CITY OF MABTON

YAKIMA COUNTY **WASHINGTON**

WATER SYSTEM PLAN

G&O #11064
SEPTEMBER 2013

Gray & Osborne, Inc.
CONSULTING ENGINEERS

CITY OF MABTON

YAKIMA COUNTY **WASHINGTON**

WATER SYSTEM PLAN

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EXECUTIVE SUMMARY

The objectives of this water system plan are to evaluate the performance and adequacy of Mabton's existing water supply and distribution system and to describe steps the City must take to meet the demands of its 6- and 20-year planning periods. This plan has been written to comply with WAC 246-290-100, the Washington State Department of Health's rules for developing a water system plan.

PLANNING

The City's residential population, estimated at 2,230 in 2012, is anticipated to grow at an annual rate of 1.5 percent to 3,004 by 2032. This growth will result in an increase in the City's water demands. The City's average day demand is expected to increase from an average of 364,000 gallons per day in 2012 to 443,000 gallons per day in 2032. Its maximum day requirement is expected to increase from 531 gpm in 2012 to 646 gpm in 2032.

CAPITAL IMPROVEMENTS

Improvements needed to meet the City's future demands are summarized below.

- *Source/Supply.* The City has three wells in service, Well No. 4 (currently in repair) and Well No. 5 that have estimated capacities of 200 gpm and 500 gpm, respectively. Well No. 3 is for emergency use only as it has elevated levels of nitrates which require the blending of this water with another source. With an approximate combined output of 700 gpm from Well Nos. 4 and 5, these wells marginally provide the City with sufficient supply capacity to meet its 2032 MDD. Consequently, for water system reliability, a new 1,000 gpm well (Well No. 6) is planned in the 6-year planning period.

  Well No. 4 failed in the summer of 2013 and is now being repaired. This required cleaning of the casing and replacement of the pump. The production of Well No. 4 has decreased to an estimated 200 gpm. The Well No. 4 flow meter is not functioning, and will be replaced, and a new water level sensor installed.

  The City plans to install an emergency generator at the new Well No. 6 in order to meet demands during an extended power outage.

- *Water Rights.* The City's instantaneous water rights, 1,000 gpm, are sufficient to allow the City to operate both its wells simultaneously. The two wells have an estimated combined capacity of 700 gpm. The City's annual withdrawal rights, 452.4 acre-feet per year, are sufficient to meet

its 6-year requirements of 431 acre-feet per year, but not the 20-year requirement of 496 acre-feet per year. Consequently, new water rights are needed for the 20-year planning period. It is noted that due to the uncertainty of the City's actual demands (due to the lack of source meter records), the City may require additional water rights sooner than projected.

- *Storage.* The City's single 800,000 gallon reservoir provides sufficient storage to meet the 20-year requirements of 340,000 gallons, assuming that the City constructs a new 1,000 gpm well (Well No. 6). However, due to the low elevation of the reservoir, the City must boost the pressure of the water system with the existing booster pumping station. The City plans to construct a new, higher reservoir in order to eliminate the need for the booster pumps which must run constantly. This will allow significant power cost savings.

- *Treatment.* The City provides chlorination for disinfection. The City plans to continue its efforts to provide a high level of water quality in its system with disinfection.

- *Telemetry.* The City's telemetry system meets its current needs and no improvements are currently planned. The system is old and changes may need to be made for operational efficiencies and safety.

- *Booster Pumping Station/Upper Pressure Zone.* The City operates a booster pumping station that serves the entire City of Mabton. No particular deficiencies were identified with this system, except that the system does not have the DOH recommended back-up power system. The City intends to construct a new, higher reservoir to eliminate the need for the constantly running booster pumps.

- *Transmission and Distribution.* The City plans to make several distribution system improvements within the 20-year planning period to improve fire flow and system operation. The City plans to initiate at least three of these projects within the next six years. With roughly 70 percent of the City's water mains over 70 years old and too small to provide adequate fire-flows, the City has made it a priority to begin replacing these old lines.

- *Operation and Maintenance.* The City plans to implement several operation and maintenance items, including repairing leaks discovered in a recent leak detection study, repair of the Well No. 4 source meter, maintenance of the booster pumping station screen, replacing in-operable

valves, replacing defective hydrants, replacing selected service meters, installing meters in the parks and replacing aging distribution lines.

The City's public works staff is working on re-establishing the City's institutional knowledge base, including the library of as-built plans, drawings, specifications, equipment operations and maintenance manuals, etc.

CAPITAL IMPROVEMENT PROGRAM

The City's 6-year capital improvement program is summarized in Table ES-1.

TABLE ES-1

Capital Improvement Program

Project	2013 Cost	Schedule
SOURCE		
Well No. 4 Repair	$130,000	2013
New Well No. 6	$1,850,000	2014
WATER RIGHTS		
Water Rights	$700,000	2014
STORAGE		
Reservoir	$1,300,000	2014
DISTRIBUTION (Fire Flow, Replacement)		
South St., Reservation St. to the Alley	$240,000	2014
Monroe St., Alley to 7th Ave.	$390,000	2014
Alley East of 1st Ave.	$270,000	2014
OPERATION & MAINTENANCE		
Source Meter Calibration	$1,000	2013
Distribution System Valves	$25,000/yr.	2013 & annually
Service Meters	$3,000/yr.	2013 & annually
Reservoir Cleaning	$5,000	2013
Hydrant Replacements	$4,000/yr	2013 & annually

FINANCING

The 6-year financial analysis performed for this plan was based on assumptions of a City growth of 1.5%, that its expenses would increase at an annual inflation rate of 3 percent, and that the there would be a one-time monthly rate increase to the base rate of $21 with annual increases of 3 percent to the base rate. Based upon those assumptions, the analysis indicates that the City has sufficient financing ability to complete the capital improvement program outlined in Table ES-1.

CHAPTER 1

DESCRIPTION OF WATER SYSTEM

CHAPTER 1

DESCRIPTION OF THE WATER SYSTEM

WATER SYSTEM OWNERSHIP AND MANAGEMENT

The City of Mabton owns and operates its domestic water system. A vicinity map showing the relationship to adjacent communities is presented on Figure 1-1. The Washington State Department of Health (DOH) water system identification number is 49650 R. A copy of the Water Facilities Inventory (WFI) form is included in Appendix A. The City is governed by a City Council and Mayor. The City's mailing address is:

City of Mabton
Post Office Box 655
Mabton, Washington 98935

The City's water system is operated by Mr. Chris Morris, who maintains a temporary operator certification while he works on a Water Distribution Manager (WDM) 1 certification. Ms. Myra Hartley is also employed by the City and operates the waste water treatment plant. Ms. Hartley is certified as a Water Distribution Manager (WDM) 2 and at times may assist with the duties of operating the water system.

The ownership is municipal with a council decision making process. The City Council sets the budget for the water department. The Mayor oversees the day to day operation of the City. The Mayor has discretionary control of the water system budget to make purchases and to have work performed. For situations where large expenses are required or long term decisions are needed, the Mayor and City Council confer to determine a course of action and method of funding. The Mayor consults the City's most recent planning documents to determine the number of connections the system can serve, and uses these documents to guide planning efforts and to plan short-term project phasing. Finally, the Mayor works with the contract City Engineer when large projects are necessary, when the City is seeking funding for a project, or if a developer should require above average fire flow.

SYSTEM BACKGROUND

HISTORY OF WATER SYSTEM DEVELOPMENT AND GROWTH

Settlement in the Mabton area began around 1884, which was approximately five years before Washington became a state in 1889. This town grew out of a Northern Pacific Railway rail stop where the company had built a water tower. It was in 1892 that

Sam P. Flower built a store and warehouse which was followed by several stores, a hotel, railroad depot and schoolhouse. The town incorporated in 1905.[1]

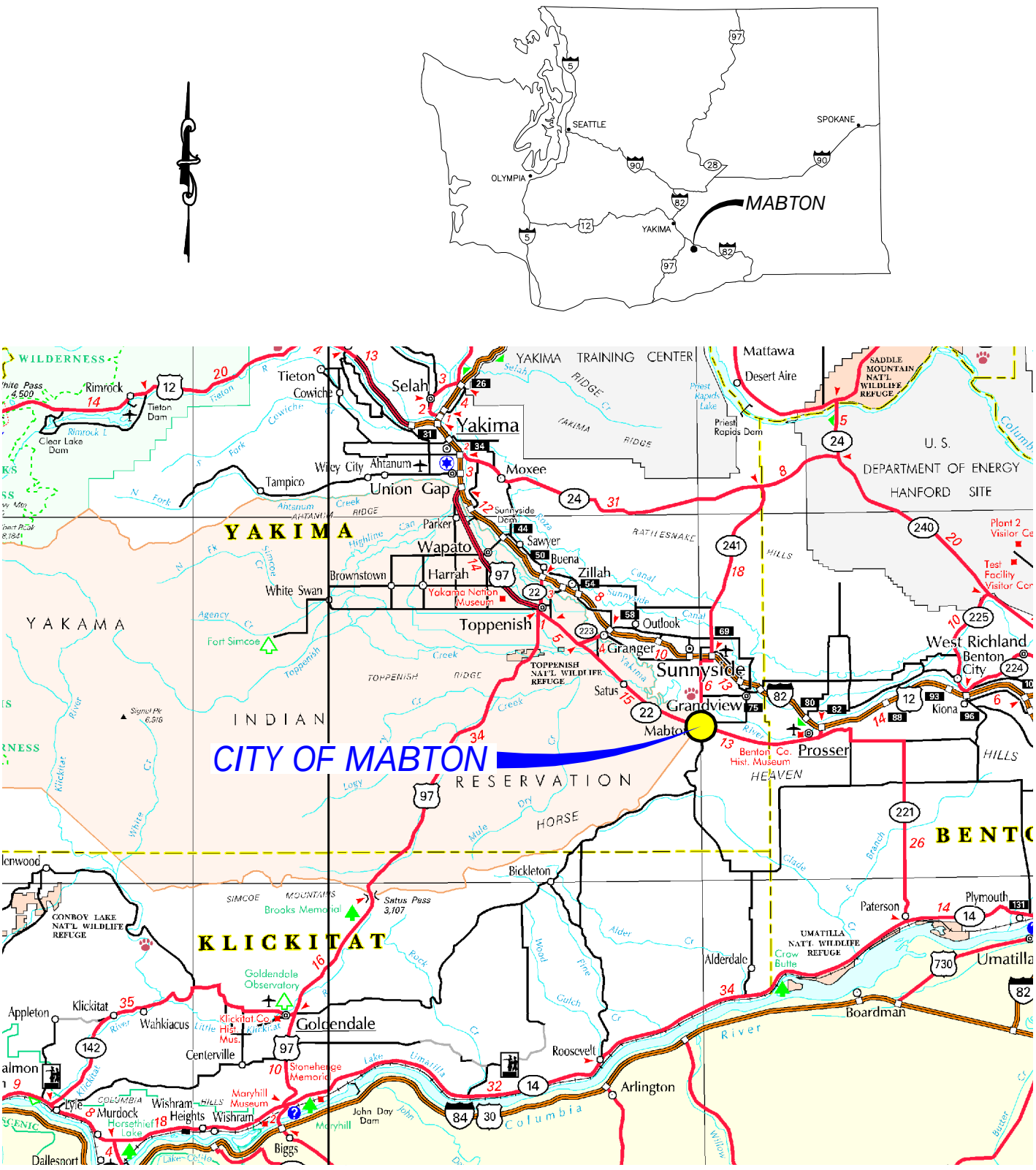
A history of the construction of major water system features for the City of Mabton is provided in Table 1-1.

TABLE 1-1

Water System History

Year	Event
1905	Town of Mabton is incorporated.
1908	Water system records show the system consisted of a well and tank located north of Pine Street, between 3rd and Main Streets. Distribution piping consisted of 4-inch, 6-inch and 8-inch wood stave and wrought iron piping, covering most of the town located north of the railroad and west of Main Street.
1922	Well No. 1 (located in the existing City park) is purchased from the original owner and tested with a 140 gpm pump.
1924	The original well house is constructed over Well No. 1 along with a 50,000 gallon steel tower and elevated tank.
1908-1930	Water main extensions are made to the south portion of the town, east of Main Street.
1933	Well No. 1 is tested by G.D. Hall of Yakima.
1933-35	Water system improvement plans are prepared including pipeline replacements, pump house for Well No. 1, pump house for Well No. 2, a gas separator and vault, and new 8-inch riser inlet and 36-inch outlet pipe to the existing 50,000 gallon steel tank.
1935	Well No. 2 is drilled by A. A. Durand of Walla Walla
1947	There is an explosion in pump house No. 2
1953	A 1,000 gpm, 60 HP vertical turbine pump is installed in pump house No. 2 and electrical improvements are performed on pump house No. 1.
1956	Use of Well No. 1 is discontinued.
1957	A 400 gpm vertical turbine pump is installed in Well No. 3.
1972	Pump in pump house No. 2 is raised to above floor level for sanitary protection.
1973-74	Gas explosion in pump house for Well No. 1 supposedly caused by light switch igniting a build-up of methane gas in a poorly ventilated pump house.
1974	Well No. 2 and No. 3 are flow tested.

[1] Katherine Trembley Wernex (1979), It Did Happen Here: A Living History of Old Mabton, Prosser, Washington: Perfect, p. 2



CITY OF MABTON
WATER SYSTEM PLAN

FIGURE 1-1
VICINITY MAP

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M:\MABTON\11064 WSP\FIGURES\FIGURE 1-1

TABLE 1-1 (cont.)

Water System History

1975	800,000 gal. steel standpipe reservoir is constructed, along with gas separator vault and piping revisions at pump house No. 2, a pump house for Well No. 3 with chlorination room and facilities, in addition to new and larger motors with additional stages added to pumps in Well No. 2 and Well No. 3, flow meters electrical improvements and a new 8-inch transmission water main. The 50,000 gal. elevated tank is taken out of service.
1978	Gas explosion destroys roof of 800,000 gal. steel standpipe, supposedly caused by spark from ventilator fan motor. Roof is repaired, aeration trays are added (either in 1975 or 1978) and all electrical is removed from within the standpipe interior. Additional screened vents are installed in the stand pipe as well as mercury pressure controls on the outside of the standpipe.
1982	Vent screens on top of the 800,000 gal. steel standpipe are found to be corroded so they are replaced with stainless steel screens.
1987	Well No. 1 decommissioned per WAC 173-160.
1988	The booster pumping station is constructed and Well No. 4 is connected to the water system.
2001	City begins blending water from Well No. 3 and Well No. 4 due to high nitrates in Well No. 3.
2001	Pump intake of Well No. 4 is lowered (depth unknown).
2002	Pump intake of Well No. 3 is lowered (depth unknown).
2002	Utility Services Assoc. is hired to perform distribution system leak detection.
2003	City replaces Well No. 3 motor.
2005	Previous Water System Plan is approved.
2006	Well No. 5 is drilled.
2007	Well No. 5 is equipped and connected to the water system.
2010	DOH approves wellfield designation for Well No. 4 and Well No. 5 at a capacity of 950 gpm.
2012	American Leak Detection is hired to perform distribution system leak detection.

SURFACE WATER

The Yakima River is located approximately one mile to the north of the City and flows from west to east in the vicinity of the City. The Yakima River in the vicinity of the Mabton WWTF outfall is deep and slow moving. The Mabton West Lateral of the Sunnyside Irrigation District is located south of the City. The City is located in the Lower Yakima River Water Resource Inventory Area (WRIA) No. 37. Most of the City is out of the flood plain. A small portion of the south west corner of the City is in the flood plain; see Figure 1-2 for a map of the flood plain.

WATER SUPPLY

The City's potable water supply is provided by the City's ground water wellfield. The City's Wells Nos. 3, 4 and 5 are equipped with pumps and motors. The Well No. 2 pump, motor and equipment have been removed. The water from these wells is chlorinated to provide disinfection throughout the distribution system. See Table 1-3 for well information. The current water system operating permit is classified as "Green" by the DOH. Systems in this category are considered adequate for existing uses and adding new service connections up to the number of approved service connections. A copy of the Operating Permit from the DOH's Sentry website is included in Appendix A. There are no comments or Current Permit Conditions listed by the DOH.

GROUNDWATER

The ground water in the vicinity of the City has two discrete aquifer systems; an unconfined and/or semi-confined alluvial aquifer (Ellensburg), and deeper Columbia River basalt aquifers. The basalt aquifers include the Saddle Mountain, Wanapum and the Grande Ronde. The upper groundwater flow follows general topography with natural recharge occurring within the headlands and discharge occurring towards the Yakima River. In this area predominant groundwater flow is from the northwest toward the southeast.

Well No. 1 was removed from service on or prior to 1956 and was grout sealed in 1989. Based on data from the City of Mabton 1985 Water Study, Well No. 2 is drawing from the Wanapum formation. Based upon information contained in the Report of Examination (ROE) for G4-29212, Well No. 3 apparently draws from the Ellensburg formation. The ROE for G4-29212C indicates that Well No. 4 is open to aquifers hosted by the Umatilla Member of the Saddle Mountain Basalt of the Columbia River Group. Ecology expressed in a letter to the City (12-16-2004) that Well No. 5 was cased and sealed into the Saddle Mountain Basalt Formation, and as of November 3, 2010, the DOH approved the wellfield designation S05 for Well No. 4 and Well No. 5.

According to the Lower Yakima Valley Groundwater Quality Preliminary Assessment and Recommendations Document, the shallow aquifer in this area has high nitrate-nitrogen levels, with at least a third of the wells in the Lower Valley having greater than 5 mg/l nitrate-nitrogen. Nitrate-nitrogen levels of 10 mg/l are considered a potential health risk to the public.

WATERSHED PLANNING

The City of Mabton is located in the Lower Yakima Watershed Water Resource Inventory Area (WRIA) 37. Several studies and planning documents are available on the Department of Ecology's website for WRIA 37.

Per the Department of Ecology, WRIA 37 has completed phases 1, 2 and 3 and is in the process of completing phase 4 of the watershed planning process.

WWTF

CITY HALL

WELL 4

WELL 2

WELL 3

WELL 5

RESERVOIR

JACKSON ST

MONROE ST

ADAMS ST

JEFFERSON ST

WASHINGTON ST

NORTH ST

SOUTH ST

FERN ST

ROSE ST

CEDAR ST

PINE ST

MAPLE ST

1ST AVE

2ND AVE

3RD AVE

4TH AVE

5TH AVE

6TH AVE

7TH AVE

VANCE RD

FERRY RD

ALLISON RD

GULDEN RD

BOUNDARY RD

SR 22

SR 22

C ST

B ST

2ND ST

3RD ST

MAIN ST

5TH ST

680

690

700

710

720

730

740

1"=1000'

CITY LIMITS

URBAN GROWTH AREA

4" WATER MAIN

6" WATER MAIN

8" WATER MAIN

10" WATER MAIN

12" WATER MAIN

RESERVOIR

FIRE HYDRANT

WELL

BOOSTER

FLOOD PLAIN / FLOOD WAY

10' CONTOURS

* PIPING UNKNOWN. RECORDS UNAVAILABLE. POSSIBLE CONFIGURATION SHOWN

CITY OF MABTON

WATER SYSTEM PLAN

FIGURE 1-2
EXISTING WATER SYSTEM

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M:\MABTON\11064 WSP\FIGURES\FIGURE 1-2

CRITICAL WATER SUPPLY AREA

Mabton is not located in a Critical Water Supply Area.

INVENTORY OF EXISTING FACILITIES

The purpose of the water system inventory is to establish the amount, type, and capacities of the various components of the existing water system. The current potable water system components consist of five wells (of which two are no longer in use, one is for emergency use and two are in service), one storage reservoir, approximately 10 miles of water distribution lines, and one booster pumping station. The City's water system has a single pressure zone. Figure 1-2 shows an overview of the City's water system piping.

SOURCE OF SUPPLY

The source of supply for the City is ground water supplied by three wells. Well No. 4 and Well No. 5 are the City's active, permanent sources and have an estimated combined total pumping capacity of 700 gpm. The City also has two emergency status wells, Well No. 2 and Well No. 3. Well characteristics are summarized in Table 1-3 and shown in Figure 1-3.

The City's Well No. 1 was taken out of service in the 1950s and decommissioned with cement grout in accordance with WAC 173-160. During the sealing of the well, 320 feet of tremie pipe was inserted into the well and removed as the bore hole and casing was filled with cement grout.

Well No. 3 has tested to be high in nitrates (17 mg/l), so if this well is to be used, the City blends this water with the water of Well No. 4 or Well No. 5 in order to produce a combined stream of water that does not exceed the State's maximum contaminant level (MCL) of 10 mg/l.

The well house for Well No. 4 appears to be constructed with explosion proof –lighting. It is possible that this well may produce methane, however no records have been found to indicate that this is the case.

Copies of the City's well logs are included in Appendix B.

The City also has a small well used for wash down at the wastewater treatment plant. This well is a 3-inch diameter, 25-foot deep well located at the wastewater treatment plant. There is no well report available for this well. It is utilized solely for the operation of the wastewater treatment plant.

TABLE 1-2

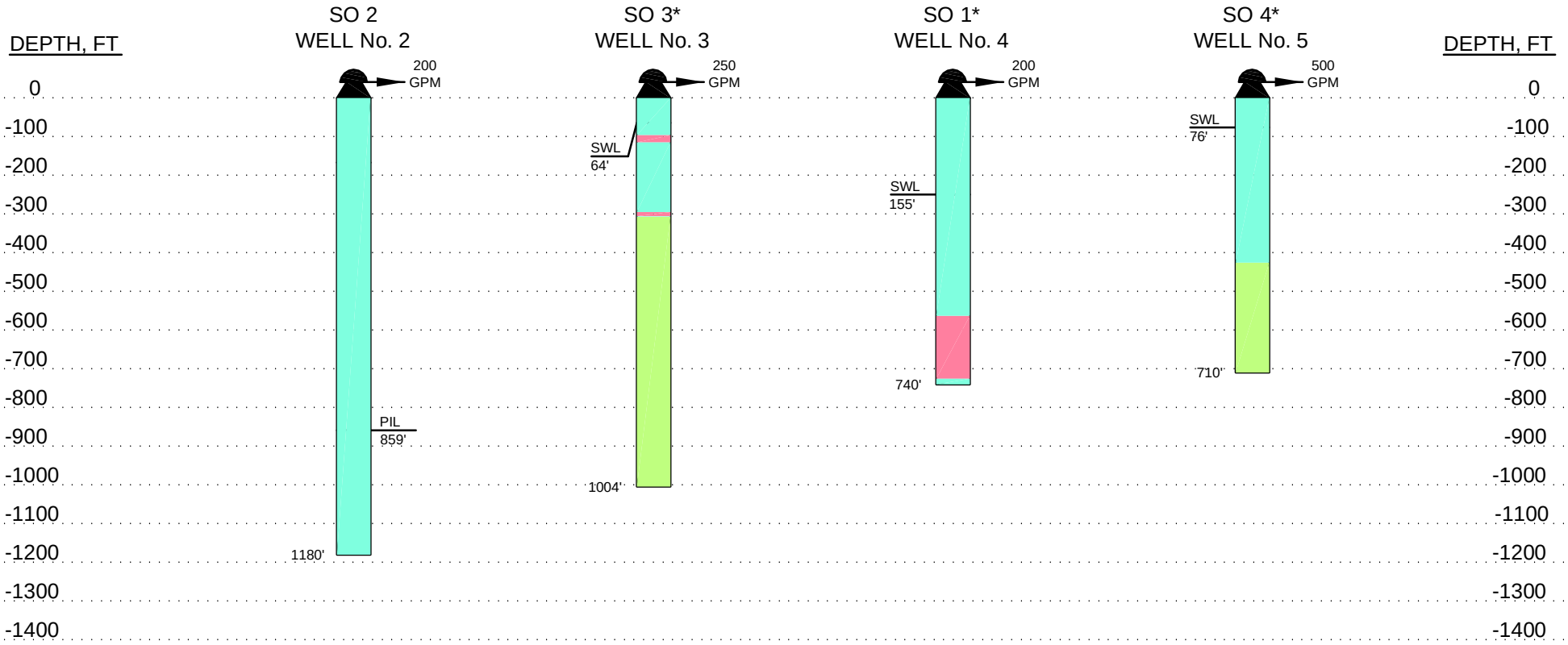
Mabton Water Well Characteristics

Characteristic	Well No. 2[(1)]	Well No. 3	Well No. 4	Well No. 5
DOH Source No.	SO2	SO3	SO1	SO4
Identifying No.	AFL768	AFL767	ABR606	ALF995
Status	Emergency	Emergency	Permanent	Permanent
Date Drilled	1935	1957	1987	2007
Wellhead Elevation (ft)	718 (+/-)	718	715 (+/-)	715 (+/-)
Pump Intake Level (bgs, ft)	n/a [(1)]	unknown	In repair. 500' (est.), to be determined.	250
Surface Seal	n/a	None indicated	Bentonite & Cement to 19'	Grout to 135', Grout strata seal at 425'
Casing Diameter (in) and depth (bgs, ft)	8"	16" (0'-130') 12" (120'-307')	16" (0,-134"), 12" (+18"-437.7'), 10" (411'-594'), 8"(563'-729')	16" (0-135'), 12" (72'-425')
Well Depth (bgs, ft)	1,180	1004	740.6	710
Well Casing Depth (bgs, ft)	n/a	307	729	425
Casing Perforations (ft)	n/a	96'-115', 295-305'	563'-726'	none
Open Interval (bgs, ft)	n/a	>307	>729	>425
Formation	Wanapum	Ellensburg	Saddle Mountain, (2)	Saddle Mountain[(2)]
Gas, Odor or Nitrate	Methane, Hydrogen Sulfide	Nitrate Level of 17 mg/l	Possible Methane	Hydrogen Sulfide
Rated Capacity (gpm)	800	250	1,000 (1987)[(3)]	500
Actual Capacity (gpm)	740	250	200 (2013) [(3)]	500
Pump Type	Line-Shaft	Submersible	Line-Shaft	Line-Shaft
Pump Manufacturer	Layne	-	Layne	
Pump Speed (RPM)	1760	-	-	1,775
Pump Column Diam. (in)	unknown	unknown	unknown	6
Motor Horsepower (HP)	75	40	125	60, US Motor
Static Water Level (bgs,ft)	82' (1989)	64' (2002)	155' (2013)	76'
Dynamic Water Level (bgs, ft)	118' (1989)	81' (1974)	411'	200' Estimated

(1) No well report is available for the well. The equipment for this well has been removed.

(2) Per the ROE for CG4-29212C, based upon geologic data, this well is "open to aquifers hosted by the Umatilla member of the Saddle Mountains Basalt of the Columbia River Basalt Group".

(3) SWL dropped from 76' in 1987 to 114' in 1999, and 155' in August of 2013 which has contributed to a reduced well output. Initial pump flow test after well cleaning indicate a capacity of approx. 240 gpm. Actual capacity will be determined once the well is re-equipped and source flow meter is installed.



LEGEND

- CASING
- PERFORATIONS
- OPEN HOLE

SWL STATIC WATER LEVEL
PIL PUMP INTAKE LEVEL
* PUMP INTAKE LEVEL UNKNOWN

M:\MABTON\11064 WSP\FIGURES\FIGURE 1-3

CITY OF MABTON
WATER SYSTEM PLAN

FIGURE 1-3
WELL CHARACTERISTICS

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WATER RIGHTS

The City currently has certificates for an instantaneous (Qi) water right of 2,400 gpm and an annual withdrawal (Qa) water right of 452.4 acre-feet. The City also has a right for a well for use at the wastewater treatment facility for Qi of 15 gpm and Qa of 2 acre-feet per year. A copy of the records of examination (ROE) and certificates for these water rights is included in Chapter 10. A summary of the City's water rights is presented in Table 1-4 and a water rights self assessment form is included in Chapter 4.

TABLE 1-3

City of Mabton Water Rights

Source	Water Right Number	Type	Priority Date	Maximum Instantaneous Withdrawal (gpm)	Annual Withdrawal (Acre-Feet)
Well Nos. 2 & 3	G3-00027C	Certificate	3/3/1971	1,400	280(1)
Well No. 4	G4-29212C	Certificate	2/24/1987	1,000(2)	452.4(2)
Well Nos. 4 & 5	CG4-29212C	Change Cert./ROE(3)	4/27/2004	--	--
Subtotal (Sources used in City's water system)				1,000(2)	452.4(2)
Other:					
WWTF Well(4)	G3-00381C	Certificate	6/2/1972	15	2
Total				2,415	454.4

(1) Total Qa capped at 280 acre-ft. Originally this right was for Wells No. 1 and 2, but Well No. 1 has been decommissioned.

(2) 280 acre-feet of this right are alternate, non-additive to Ground Water Certificate No. G3-00027C. CG4-29212C limits Qi to 1,000 gpm and Qa to 452.4 acre-ft.

(3) Water Right Change Application is approved to allow Well No. 4 and Well No. 5 as the points of withdrawal for this water right.

(4) This well is used utilized solely for the operation of the wastewater treatment facility (WWTF).

STORAGE

The City has one reservoir in service which has a nominal volume of 800,000 gallons. This reservoir serves the City's single pressure zone. All functioning wells pump to this reservoir. A summary of the characteristics of the City's reservoir is presented in Table 1-5, the reservoir location is shown on Figure 1-2. The City also has an abandoned 50,000 gal. elevated steel reservoir located adjacent to the booster pumping station.

TABLE 1-4

City of Mabton Reservoir Characteristics

Characteristic	Reservoir No. 1
Date Constructed	1975
Nominal Storage Capacity (gallons)	800,000
Usable Storage Capacity (gallons)	611,500
Type of Construction	Welded Steel
Diameter	34' - 5"
Height (feet)	115 (+/-)
Base Elevation (feet above msl)	723 (+/-)
Aeration Tray Bottom (feet above bottom of reservoir)	113(+/-)(1)
Overflow Elevation, Max. W.S. elev. (feet above msl)	835 (+/-)
Overflow Height (feet)	112 (+/-)
Tank Crown Height (feet above msl)	838 (+/-)

(1) Per Preston Shepherd plans "Water System Improvement Project, Aeration Trays", 10-17-74, (note, these are not as-built drawing). City currently sets the operating water surface at approximately 27 feet below the aeration trays to facilitate aeration.

The reservoir was last cleaned in 1984. The water levels in the reservoirs are controlled by mercury pressure controls on the outside of the tank. The controls were removed from the interior of the tank after a methane gas explosion destroyed the top of the steel standpipe. The explosion was reportedly caused by a spark from a ventilator fan motor which has since been removed. As this tank was constructed in 1975, building codes for reservoirs such as this have been tightened for seismic concerns, and it is likely that the reservoir may require additional anchorage to meet the current code.

In either 1975 or 1978 (year unknown), the City had aeration trays constructed in the top of the reservoir. The reservoir inlet pipe is routed to discharge onto these trays. These trays consist of three tiered steel trays of 3/16" thick plate steel drilled with ½" diameter holes. In addition, a 1,000 cfm explosion proof blower fan was added just above the trays at the center of the tank roof. These components were added to assist in the removal of hydrogen sulfide and the methane gas buildup in the tank to reduce the chance of explosion.

A pressure gauge located in the BPS detects the water level in the reservoir. This pressure gauge is used to turn the wells on or off. The operating pressures are 34 psi for the "pump-on" level and 37 psi for the "pump-off" level. This corresponds to reservoir water levels of 78.5 feet and 85.4 feet. This indicates that 28 feet of the reservoir are dedicated to aeration and the aeration trays. Therefore the usable capacity of the reservoir is reduced by approximately 200,000 gallons due to the aeration. This lowered water surface reduces the pressure of the output from the reservoir by approximately 9 to 12 psi.

BOOSTER PUMPING STATION

The City's Booster Pump Station (BPS) was constructed in 1988 and is located in the center of Mabton City Park, southwest of the intersection of South Main Street and Fern Street. It was designed with one 5 HP booster pump (constantly on), two 15 HP booster pumps, and a 30 HP fire pump. It is now equipped with one 10 HP booster pump (constantly on), two 15 HP booster pumps and one 30 HP fire pump. Water is pumped from the reservoir through a 12-inch pipe with gate valve and flow meter to the distribution system. The BPS is necessary to boost water system pressures and fire flows, partly because the upper portion of the reservoir has been used for aeration and the aeration trays which have reduced the head available to the system. The characteristics of the BPS pumps are shown in Table 1-6.

TABLE 1-5

Booster Pumping Station Characteristics

Characteristic	Booster Pump No. 1[(1)]	Booster Pump No. 2	Booster Pump No. 3	Fire Pump No. 4
Status	Constant on	Lead	Lag	Fire
HP	10	15	15	30
Installed	1988	1988	1988	1988
Flow (gpm)	175	550	550	1,200
@ TDH (ft)	70	70	70	70
RPM	1,770	1,750	1,750	1,750
Size	2" x 2½"	4" x 5"	4" x 5"	6" x 6"
Phase, Voltage, Hz	3, 460, 60	3, 460, 60	3, 460, 60	3, 460, 60
Manufacturer	Paco Pumps	Paco Pumps	Paco Pumps	Paco Pumps
Model No.	10-20953-130001-1682	10-40957-140001-1822	10-40957-140001-1822	16-60957-140101-1882

(1) The original 5 HP jockey pump motor was replaced with a 10 HP motor (date unknown).

TRANSMISSION AND DISTRIBUTION SYSTEM

The existing water distribution system consists of approximately 9 miles of pipeline serving the City of Mabton.

The City's older water mains are comprised largely of cast iron (CI) (1936) and asbestos – cement (AC) (1975). PVC (AWWA C900) pipe is now used almost exclusively, whether for replacement or new installations. Table 1-7 lists the approximate length, diameter, and type of pipe in the system.

In December, 2012, the City had a leak detection study (Appendix C) performed on the distribution system. This study found two leaks in the distribution system, one in a

2-inch line (estimated at 5 to 10 gpm) and the other in the Well No. 5 check valve (estimated at 1 gpm). As check valves are re-seated each time they open and then close, it is possible that the flow rate of the check valve leak may vary significantly. The City intends to investigate these leaks and to repair them in order to reduce system losses.

TABLE 1-6

Length in Feet of Transmission and Distribution System Piping

Pipe Size	Cast Iron (1936)	PVC (age varies)	Asbestos-Cement (1975)	Total	Percent of Total
4-Inch	24,267	1,016	0	25,283	52%
6-Inch	10,245	341	0	10,586	22%
8-Inch	2,245	7,012	2,699	11,956	25%
12-Inch	0	0	633	633	1%
Total	36,757	8,369	3,332	48,458	100%
Percent of Total	76%	17%	7%	100%	-

SYSTEM CONTROL

The controls for City Wells Nos. 3 and 4 are located in the BPS building. Also reported at this location are the reservoir pressure, booster pressure and booster flow, as well as various high and low pressure alarms. This site also houses and records on circle charts flows from Well Nos. 2 and 4, the reservoir level, and booster pump flows. The start and stop settings for Well Nos. 2, 3 and 4 are set via hand dials located adjacent to the reservoir level indicator. The main electrical switching panels for this equipment are located in this building as well.

Signals from the BPS are displayed on the main panel board. From this location in the booster station, the operator can operate booster components in manual or automatic modes. Alarms are displayed, and key personnel are automatically dialed when an alarm occurs. Alarms for the majority of the sites include pump failure, power failure, and high/low reservoir water level.

The controls for Well No. 5 are located at the well house for Well No. 5.

A complete description of the operation and set points for the reservoirs is described in Chapter 6, Operation and Maintenance Program.

WATER TREATMENT

The City's sources are chlorinated. A discussion of water quality is described in Chapter 3, System Analysis.

All water is pumped to the aeration trays at the top of the City's reservoir where gases are vented away by a fan in order to prevent a buildup of the naturally occurring, potentially explosive, methane gas and to facilitate hydrogen sulfide removal. The City has previously had problems with gas buildups in the reservoir and well houses. The methane production is associated with Well No. 1, Well No. 2 and Well No. 4, while Well No. 2 and Well No. 5 produce hydrogen sulfide.

ADJACENT WATER PURVEYORS AND INTERTIES

There are no adjacent water purveyors. The City has no existing interties.

RELATED PLANNING DOCUMENTS

The following documents were consulted in the preparation of the Water System Plan Update:

City of Mabton, Wastewater Facility Plan, 2011.
City of Mabton, Comprehensive Plan Update, 2009. This plan represents the community's policy plan for growth over the twenty-year planning period. This report was used for determination of future population growth.
City of Mabton, Comprehensive Water System Plan, 2005.
Plan 2015, (The Yakima County Comprehensive Plan), amended 2007.

SERVICE AREA, ZONING AND SERVICE AREA POLICIES

The current City limits and UGA boundary are shown on Figure 1-4, as well as the Existing Service Area, Future Service Area, Retail Service Area, and the water rights place of use.

EXISTING LAND USE AND ZONING

In general, existing land uses correspond to the zoning presented in Figure 1-5. The businesses, professional offices, and industries are located along or near the main routes through the City. Table 1-8 summarizes the current zoning within the Mabton UGA. Yakima County zoning is also presented in Figure 1-6.

FUTURE SERVICE AREA

The City's future service area boundary is a portion of the area within the UGA boundary and is shown on Figure 1-4.

FUTURE LAND USE AND ZONING

Extensive zoning changes are not expected to the area in and around the City for the 20-year planning period as indicated in the City's 2009 Comprehensive Plan Update.

GROWTH MANAGEMENT ACT CONSIDERATIONS

The Growth Management Act was passed into law in 1990 with the intention to control uncoordinated and uncontrolled growth, which is considered to pose a threat to the quality of life and the environment within the State of Washington. It was determined by the State that it is in the public interest that citizens, communities, local governments, and the private sector cooperate and coordinate with one another in comprehensive land use planning. The City has adopted its 2009 Comprehensive Plan Update. Currently, land is zoned in five of the nine available zoning districts. These five zones are as listed in Table 1-7:

TABLE 1-7

City of Mabton Zoning

Land Use Designation	Brief Description[(1)]
Residential District (R-1)	Intended to establish residential development, with maximum of seven to eight units per acre. Allows single family, two-family, multifamily dwellings, mobile homes and parks. Building heights up to 35 feet.
High Density Residential District (R-2)	Density of up to 26 units per acre. Permitted uses are the same as in R-1. Building heights up to 40 feet.
Commercial District (C-1)	Intended to permit a wide range of commercial uses but generally prohibits residences except as accessory uses. Intended for areas with good access so that traffic impacts on residences are minimized.
Manufacturing (M-1)	The manufacturing district permits commercial uses, plus a range of light and heavy industrial uses, but generally prohibits residences except as accessory uses.
Park and Open Space District	Intended to provide open space for low-intensity public and private parks, etc.

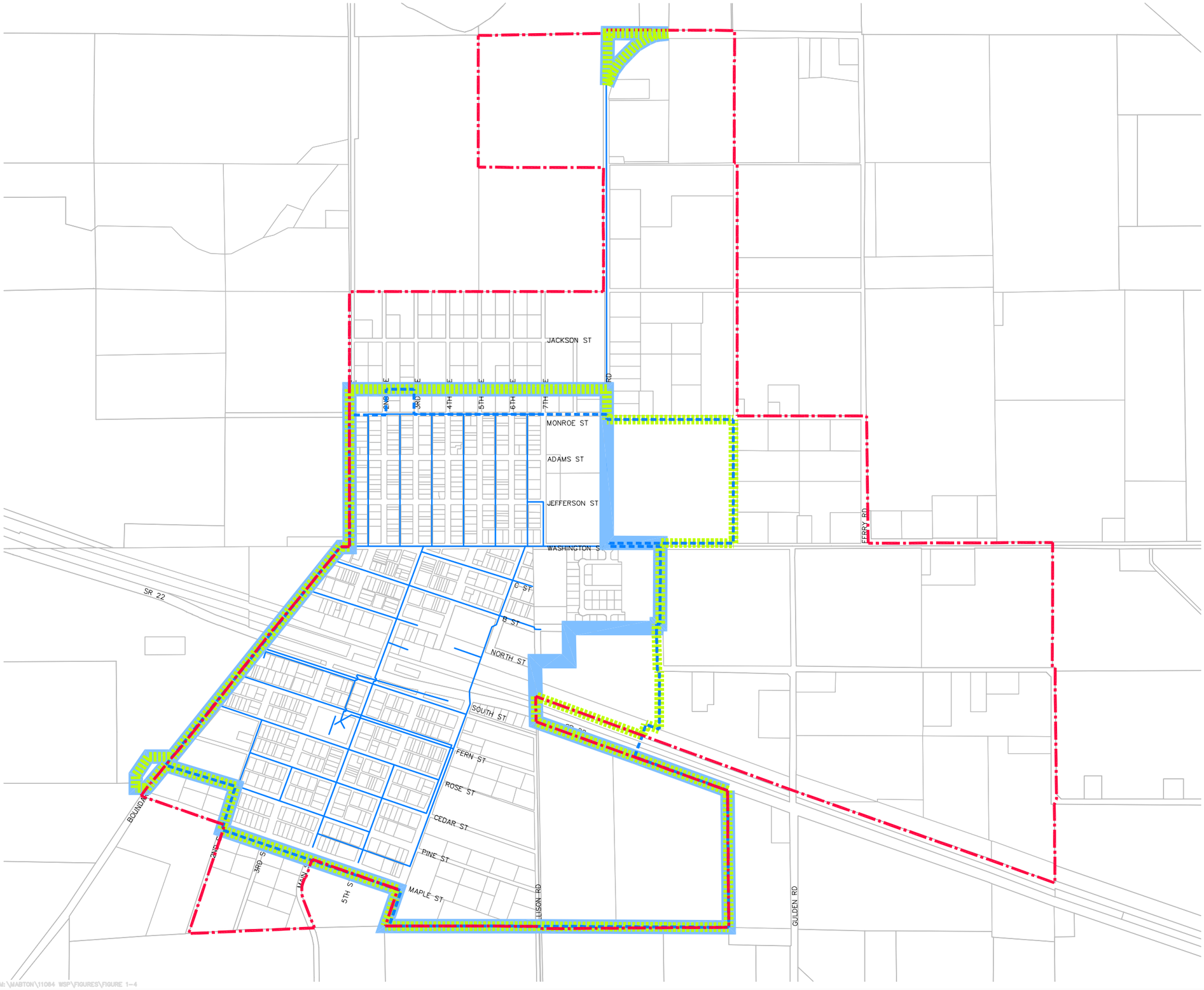
(1) For a more detailed description and definition, see the Mabton municipal code.

The City's zoning map is shown on Figure 1-5.

DUTY TO SERVE STATEMENT FOR THE RETAIL SERVICE AREA

Per RCW 43.20.260, the City has a duty to serve within its retail service area if a potential user approaches the City with a request for connection and the following threshold factors apply:

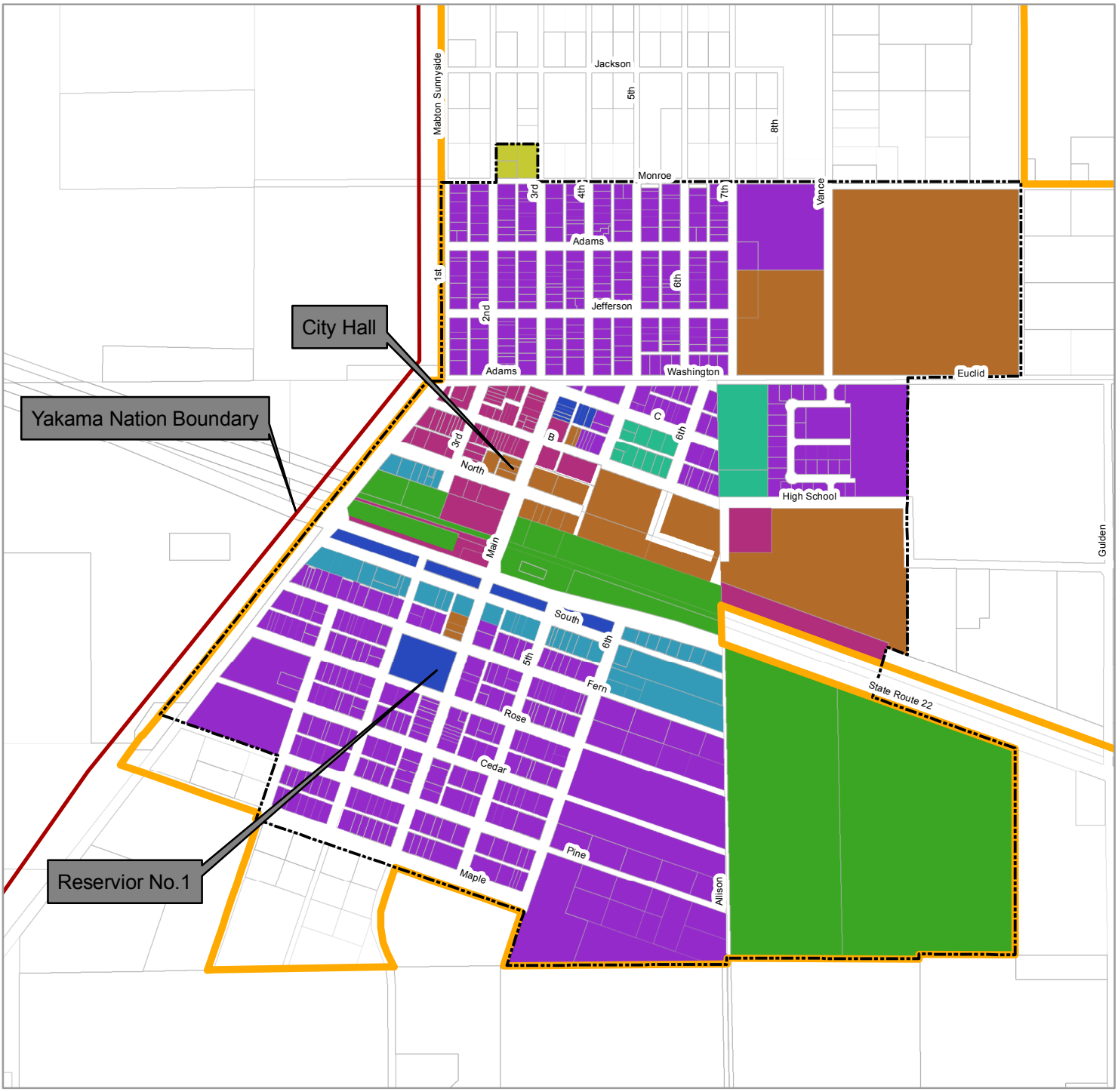
The municipal water supplier has sufficient **capacity** to serve water in a safe and reliable manner.



CITY OF MABTON
WATER SYSTEM PLAN

FIGURE 1-4
CITY LIMITS, UGA, & SERVICE AREAS

Gray & Osborne, Inc.
CONSULTING ENGINEERS



Legend:

- City Limits
- UGA
- C-1 Commercial
- M-1 Manufacturing
- MU Mixed Use
- PF Public Facilities
- PK Park/ Open Space
- R-1 Single-Family Residential
- R-2 Multi-Family Residential
- R-R Rural Residential

N

W E

S

0 500 1,000

Feet

CITY OF MABTON

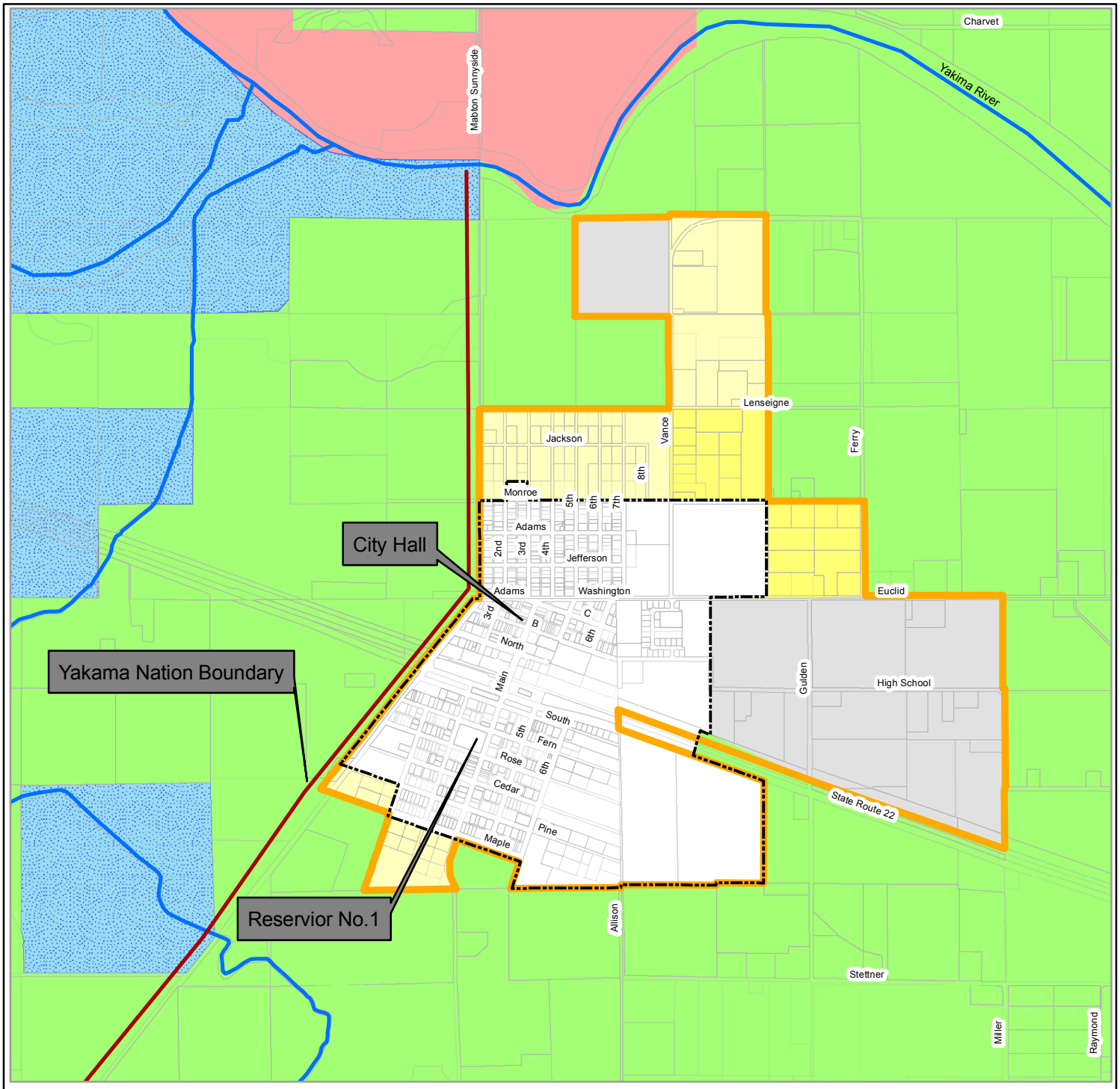
Water System Plan Update

FIGURE 1-5

City Zoning Map

Gray & Osborne, Inc.
CONSULTING ENGINEERS

M:\Mabton\10064 WSP\GIS\Zoning City



Legend:

- City Limits
- UGA

County Zoning

- Agriculture
- TRIB
- Remote/Extremely Limited
- Industrial
- Agriculture
- Industrial
- Remote/Extremely Limited
- R-1 Single-Family Residential
- R-2 Multi-Family Residential

N

W E

S

0 1,000 2,000

Feet

CITY OF MABTON

Water System Plan Update

FIGURE 1-6

County Zoning Map

Gray & Osborne, Inc.
CONSULTING ENGINEERS

M:\Mabton\10064 WSP\GIS\Zoning County

The service request is **consistent** with adopted local plans and development regulations.
The municipal water supplier has sufficient **water rights** to provide service.
The municipal water supplier can provide service in a **timely and reasonable** manner.

The Mayor and Clerk-Treasurer determine whether a request meets the above criteria, and present a recommendation to the City Council.

SERVICE AREA POLICIES AND CONDITIONS OF SERVICE

Table 1-8 summarizes the City of Mabton service area policies and their definitions.

TABLE 1-8

City of Mabton Service Area Policies

Policy Name	Policy Summary	City Municipal Code Reference
Wholesaling of Water	Will the purveyor provide water to other utilities on a wholesale basis?	Not applicable. Adjacent water utilities are not close.
Wheeling of Water	Will the purveyor allow the system's mains to be used to wheel water to another water system?	Not applicable. Adjacent water utilities are not close.
Design And Performance Policy	Policy establishing construction standards in accordance with the City's standards for all connections, extensions, and developments.	Section 13.04.050 (Note 1)
Connection Fee Policy	Establishes connection fees to be paid for new service connections.	Section 13.04.430
Cross Connection Control	Policy establishing the requirements for cross connection prevention devices.	Section 13.05
Growth Policy	Policy stating how growth of the system will be funded.	Section 13.04.560
Connection Mandatory Policy	Policy stating that connection to the water system by residents within the City Limits is mandatory.	Section 13.04.040
Over-sizing Policy	City provides funds to install larger than needed facilities to allow for future development, if necessary.	(Note 2)
Surcharge Policy	Policy determining that a surcharge will be assessed to water connections outside City limits.	New connections outside City limits are not allowed per Sec. 13.04.660.

Notes:

(1) Indirectly addressed in City's code. City performs all extensions.
(2) Not currently addressed in City's code.

TABLE 1-8 (cont.)

City of Mabton Service Area Policies

Policy Name	Policy Summary	Current City Policy Reference
Direct Extension Policy	Policy stating whether any new development shall be served through a direct line connection from the City's existing system.	(Note 2)
Extensions Policy Within City Limits	Policy establishing service extensions within City Limits, required design standards and how extensions and associated costs will be paid for.	Section 13.04.560 (Note 1)
Extensions Policy Outside City Limits	Policy establishing service extensions outside City limits but within the designated UGA. These extensions will be allowed provided certain conditions are met.	Section 13.40.560, New connections outside City limits are not allowed per Section 13.04.660.
Annexation Policy	Is annexation required in order to obtain water service?	(Note 2)
Late-Comer Agreement Policy	Policy establishing a Late-Comer agreement.	(Note 2)

Notes:

(1) Indirectly addressed in City's code. City performs all extensions.
(2) Not currently addressed in City's code.

CHAPTER 2

BASIC PLANNING DATA

CHAPTER 2

BASIC PLANNING DATA

This chapter presents the basic planning data used to estimate Mabton's future water demands. Water demand projections are used in Chapter 3 to evaluate the adequacy of the City's existing water system.

HISTORICAL POPULATION, NUMBER OF SERVICES, AND WATER USE

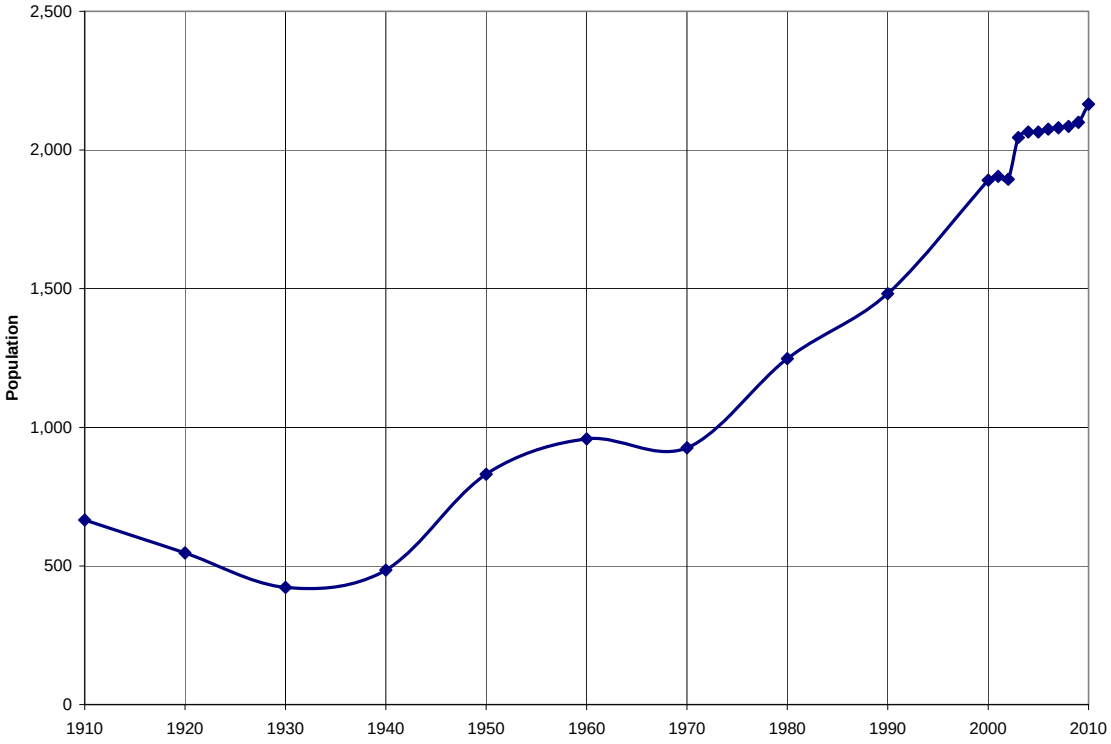
In this section historical population trends, number of services, and water production and consumption data are presented.

HISTORICAL POPULATION

As shown on Figure 2-1, the population within the City limits has grown steadily since 1930 and has more than doubled since 1970.

FIGURE 2-1

Historical Population[(1)]



(1) Source: Washington State Office of Financial Management.

SERVICE CONNECTIONS

The number of service connections for 2010 is summarized in Table 2-1. The City's classifications of service connections are consolidated here into the following customer classes: Residential (Residential and Mobile Homes), Commercial (includes Business and Churches), and Municipal (includes City/Other Buildings and Schools). As indicated in the table, the City had 532 billing connections in 2010. DOH has approved the City for 671 connections. The DOH currently shows 632 "Calculated Active Connections" on the City's Water Facilities Inventory (WFI) Form. Currently the City's water system DOH Operating Permit is color coded Green. Systems in this category are considered adequate for existing uses and adding new service connections up to the number of approved service connections.

TABLE 2-1

2010 Billing Accounts [(1)]

Customer Class (Bill Classifications)[(2)]	Number of Billing Accounts	% of Total Connections
Single Family Residential (1, 8, 10, 11)	457	86%
Multi Family Residential (3)	28	5%
Commercial (0, 2, 5)	33	6%
Municipal (4, 6)	14	3%
Total	**532**	**100%**

(1) Source: City records.

(2) The City's codes for the Bill Classifications indicated in parentheses are as follows: (0)=Water Only; (1)=Residential; (2)=Business; (3)=Apartments; (4)=City/Other Buildings; (5)=Churches; (6)=Schools; (7) is not used; (8)=Outside Water Only; (9) is not used; (10)Residential; (11)=Mobile Homes.

WATER USE

The City has started tracking the water production from Well No. 5 and has purchased a water meter for installation at Well No. 4 which is not currently functioning properly. This meter will be repaired or replaced. The City has been manually recording daily source meter reads for well No. 5, and once a functioning meter is installed at Well No. 4, will record these reads daily as well. After the City has gathered a year's worth of production records, water use efficiency can be determined in a more accurate manner.

For the purposes of this water system plan, however, water loss has been estimated by the following method:

> During a time of expected low water usage, calculate the volume of water pumped into the system by measuring the drop in the City's single reservoir and then subtract from this an estimate of the water use by authorized uses. The difference will be an estimate of the City's water losses to leakage and other unauthorized

uses (Distribution System Leakage or DSL). This test was performed on the evening of Thursday, April 26th, 2012, at approximately 10:10 pm to 11:10 pm. There had been a heavy rainfall event this day, which significantly reduced what little irrigation one might have expected at this time of the year. The drop in the reservoir height was determined from the associated pressure drop as reported by the digital pressure meter for the reservoir in the City's booster station. This difference was measured over the one-hour period. The results are summarized as follows:

During the one hour test:	
Volume of water drained from reservoir:	15,800 gal. per hour
Estimate of volume of water used(1):	10,400 gal. per hour
Approximate Distribution System Leakage (remainder)	5,400 gal. per hour

Annualized this water loss is estimated as 50,000,000 gal/yr. or 153 ac-ft/yr.

(1)Estimated uses for the hour as follows: (1) 7 gal. toilet flush per connection; (1) 50 gal. shower per 10 connections; (1) 5 gpm irrigation use per 40 connections, (2) 2 gpm commercial uses, (12) 3 gal. toilet flushes; (1) 2,000 gal. water use per Northwest Horticulture; 4 gpm for bar sprayer at WWTF.

While this type of test provides only a rough estimate of the distribution system leakage (DSL), it indicates that the leakage is quite substantial, which may be due to the fact that approximately 50 percent of the City's water mains are now over 70 years old. These flows out of the reservoir have been corroborated with the reservoir flow charts, which indicate an approximate water distribution leakage of 5,000 gallons per hour. Once the City has been able to track water production, a better estimate of the DSL can be made.

In December of 2012, the City had a leak detection survey (Appendix C) performed by American Leak Detection. This survey discovered only two leaks in the pipes that were surveyed with an estimate of 6 to 11 gpm of total leakage. Note that due to a lack of records of old pipes (which may still be connected to the system), there may be significant leaks that would not be detected by this survey. Only pipes with locations that are known can be surveyed for leaks.

Water consumption is recorded monthly at individual water service meters, except during those winter months when meters are snow-covered and inaccessible. During those months, customers are billed the base rate only and the first spring reading is averaged for the unread months. Customers are then charged accordingly for any overages.

We note here that the estimated 2012 peak hour demand (PHD) of 1,109 gpm (see Table 2-3) exceeds the estimated 700 gpm capacity of Wells No. 4 and No. 5. Therefore, during peak water usage, it is expected that the reservoir will be drawn down to supply these demands during this time when outflow exceeds inflow. The system is to some extent, self-adjusting as when the reservoir level drops, this slightly reduces the pressure which will be seen throughout the system and thereby reduce the water supply rate, water usage and water leakage.

However, it is a very real possibility and risk that the City's reservoir could potentially be emptied on high-demand days, especially if the reservoir level had not recovered overnight from the previous day's demands and sources (such as has happened to Well No. 4) are compromised.

The City has had experience with significant dropping of the reservoir levels in August 2013, when Well No. 4 failed. During this time, the City was forced to issue water-use reduction measures for customers. The City is aware of the risk of emptying the reservoir and by monitoring the reservoir water levels, and shutting off the booster station during selected times of the day (with DOH consent), the City has been able to manage system supply and demand in order to maintain water levels in the reservoir.

It is critical for the City to increase their source capacity by drilling and equipping a new well as soon as possible. This new well would help to eliminate the water storage problem, provide source redundancy should the City have another well failure, and provide the City with a more reliable source.

Average Day Demand (ADD)

Table 2-2 lists water consumption and estimated production between 2006 and 2010. The Annual production has been estimated by assuming a fixed amount of 50,000,000 gallons annually of DSL over the 5-year time period. Annual production, or demand, is commonly reduced to a daily value, and is referred to as the average daily demand (ADD). ADD is important in determining the adequacy of the City's annual withdrawal water right quantities.

The City's demands have been relatively consistent over the last several years, and an average ADD will be used to project future demands.

TABLE 2-2

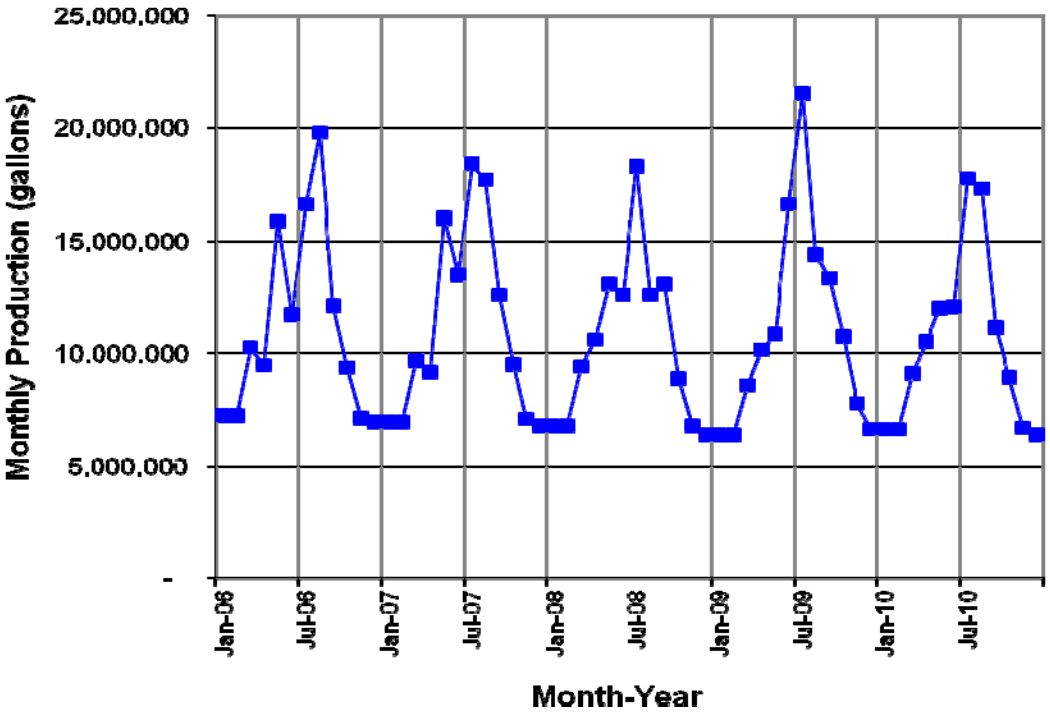
2006-2010 Average Day Demand

Year	Service Area Pop. (1)	Production (gal) (2)	Consumption (gal) (3)	ADD (gpd)	Per Capita Production (gal/cap-dy)	Annual Production (ac-ft/yr)
2006	2,075	132,000,000	82,411,000	362,000	174	406
2007	2,080	132,000,000	82,386,000	362,000	174	406
2008	2,085	127,000,000	76,919,000	348,000	167	390
2009	2,100	133,000,000	83,236,000	364,000	173	408
2010	2,165	127,000,000	77,106,000	348,000	161	390
2006-2010 Average:		**130,000,000**	**80,410,000**	**356,000**	**170**	**400**

(1) Source: Washington State Office of Financial Management.
(2) Estimated production from consumption assuming constant 50,000,000 gal. (153 ac-ft.) per year DSL.
(3) Source: Mabton billing records.

FIGURE 2-2

2006-2010 Mabton Monthly Water Production



The monthly production values in Figure 2-2 have been adjusted for DSL (assumed to be constant), seasonal variations in the meter reading cycle, outliers and recording anomalies. Production is therefore estimated based upon consumption plus a constant amount of estimated DSL.

Maximum Day Demand

The maximum amount of water pumped from the City's wells in a 24-hour period is called the maximum day demand (MDD). MDD values are used to determine whether the water system has sufficient source capacity to meet current and future production demands and to determine its requirements for instantaneous water rights.

Since the City does not have production data, an analysis of the production data cannot be performed. DOH's 2009 Water System Design Manual (WSDM) recommends using a ratio of MDD to maximum month's average day demand (MMAD) in Eastern Washington of 1.3, which results in an MDD/ADD ratio of 2.1 for Mabton. The previous water system plan had used 2.0 for the MDD/ADD ratio. MMAD and MDD data for 2006 through 2010 are presented above in Table 2-3.

Peak Hour Demand

The maximum amount of water produced in a one-hour period during a maximum day is the peak hour demand (PHD). PHD is an important parameter in determining the amount of reservoir storage needed to make up the difference between the peak hour production requirement and the system's pumping capacity.

The City currently has very few records of the continuous reservoir levels needed to calculate the PHD. In the absence of actual field data, DOH provides a means to estimate PHD using Equation 5-1 from its WSDM.

$$PHD = \left(\frac{MDD}{N}\right) \times \left[(C)(N) + F\right] + 18$$

Where PHD is in gpm, MDD is in gpm, N is the number of equivalent residential units (ERUs), and C and F are coefficients based on N. For an average value for 2006 through 2010, MDD = 519 gpm (Table 2-3), N = 448 ERUs, C = 1.6 and F = 225 (WSDM),

$$PHD = \left(\frac{519}{448}\right) \times \left[(1.6)(448) + 225\right] + 18$$
$$= 1{,}109\ gpm,$$
$$So, \quad PHD / MDD = 1{,}109 / 519$$
$$= 2.13, \quad Use\ \ 2.1$$

Table 2-3 summarizes ADD, MDD and PHD for 2006 through 2010.

TABLE 2-3

2006-2010 Estimated Water Production

Year	Service Area Pop.[1]	Estimated ADD (gpd)[2]	Estimated MDD[3] (gpm)	Estimated PHD[4] (gpm)	Estimated Annual Production (ac-ft/yr)
2006	2,075	362,000	528	1,109	406
2007	2,080	362,000	528	1,109	406
2008	2,085	348,000	508	1,066	390
2009	2,100	364,000	531	1,115	408
2010	2,165	348,000	508	1,066	390

(1) Source: Washington State Office of Financial Management.
(2) From Table 2-2.
(3) MDD = 2.1*ADD. 2006-2010 average MDD = 519 gpm.
(4) PHD = 2.1* MDD.

Because the variability from year to year is not excessive, average values of ADD, MDD, and PHD will be used to project future demands.

Consumption History

Table 2-4 shows a summary of the City's recorded water consumption history for 2006 through 2010. These data are based on City billing records for all customer classes.

TABLE 2-4

2006 - 2010 Total Water Consumption

Year	SF Residential[(1)] (gal)	Apartments (gal)	Municipal[(2)] (gal)	Commercial[(3)] (gal)	Total (gal)
2006	55,072,000	8,524,000	15,590,000	3,225,000	82,411,000
2007	54,361,000	7,178,000	17,724,000	3,123,000	82,386,000
2008	54,860,000	6,042,000	13,220,000	2,797,000	76,919,000
2009	54,203,000	6,133,000	16,453,000	6,445,000	83,234,000
2010	51,084,000	6,846,000	8,836,000	10,340,000	77,106,000
Average	**53,916,000**	**6,945,000**	**14,365,000**	**5,186,000**	**80,412,000**
% of Total	**67%**	**9%**	**18%**	**6%**	**100%**

(1) Includes codes (1) Residential, (8) Outside Water Only, (10) Residential, and (11) Mobile Homes.
(2) Includes codes (0) Water Only, (2) Business and (5) Churches.
(3) Includes codes (4) City/Other Buildings and (6) Municipal.

The City's residential consumption is summarized in Table 2-5.

TABLE 2-5

2006-2010 Residential Water Consumption

Year	Service Area Population	Total Residential Consumption [(1)] (gal/yr)	Average Day Residential Consumption (gpd)
2006	2,075	55,071,000	151,000
2007	2,080	54,361,000	149,000
2008	2,085	54,860,000	150,000
2009	2,100	54,203,000	149,000
2010	2,165	51,084,000	140,000
Average:		**53,915,000**	**148,000**

(1) Residential Consumption from Table 2-4.

Distribution System Leakage

Section 8 of WAC 246-290, as revised to incorporate the 2003 Municipal Water Law, requires municipal water suppliers with 500 or more connections to meet a state distribution system leakage (DSL) standard of no more than 10 percent. DSL must be reported as a volume and as a percentage of total production. The City of Mabton has recently been going through a change in staff and management and does not have total source production records. Therefore, the City's DSL cannot be determined to any degree of accuracy (see "Water Use" above). The City is taking measures to repair or replace the source meter on Well No. 4. Once this meter is properly functioning and the City is able to develop a history of its water production, the DSL can be determined.

Currently, with an estimate of a constant 50,000,000 gal/yr. of DSL, the percentage of DSL is as shown in Table 2-6.

TABLE 2-6

2006-2010 Estimated Distribution System Leakage

Year	Metered Consumption (gal/yr) [(1)]	Estimated DSL[(2)] (gal/yr)	Estimated DSL[(3)] (percent)
2006	82,409,000	50,000,000	38%
2007	82,386,000	50,000,000	38%
2008	76,919,000	50,000,000	39%
2009	83,234,000	50,000,000	38%
2010	77,106,000	50,000,000	39%
5-Year Average DSL:			**38%**

(1) Table 2-4.
(2) See "Water Use" above for discussion of Estimated Distribution System Leakage.
(3) Percent of DSL = (Estimated DSL) / (Consumption + Estimated DSL).

The City also plans to begin a program of routinely calibrating source meters every three years to ensure these meters are reading accurately and reliably.

Equivalent Residential Units

Equivalent residential units (ERUs) are a way to express water use by non-residential customers as an equivalent number of residential customers. Because the City's population has remained relatively stable over the last five years, the average ERUs for each customer class for 2006 through 2010 are used to determine ERU values in Table 2-7. The average consumption per residential customer for 2006-2010 was 323 gpd/ERU (=53,916,000 gallons/yr ÷365 days/yr ÷ 457 residential connections). This number was divided into the annual consumption for each customer class to arrive at the number of ERUs for that class.

TABLE 2-7

2006-2010 Average Equivalent Residential Units

Classification	Average Metered Consumption (gal) [1]	2010 Number of Conn. [2]	ERUs [3]	ERUs / Conn.	Percent of Total ERUs
Residential	53,916,000	457	457	1.0	67%
Apartment Bldgs.	6,945,000	28	59	1.1	9%
Municipal [4]	14,365,000	14	122	2.5	18%
Commercial	5,186,000	33	44	1.3	6%
Total	**80,412,000**	**532**	682	-	**100%**

(1) From City billing records. The values shown are averages for 2006 through 2010, see Table 2-4.
(2) Table 2-1. Assumes 2010 connection count is approximately equal to the average connections for this period.
(3) Metered Consumption ÷ 323 gpd/ERU ÷ 365 days/yr.
(4) Includes customer class (4) City/Other Buildings and (6) Schools.

The total number of ERUs is about 29 percent more than the number of connections. It will be assumed that growth of all connections will occur at approximately the same rate as residential growth.

LARGEST WATER USERS

Table 2-9 lists the City's 10 largest retail water users in 2010. The two largest users by far, are the school district for Mabton Elementary (8.5%) and Mabton High School (7.9%). Both schools have large irrigated areas. These two demands account for approximately 16 percent of the City's annual usage.

TABLE 2-8

2010 Largest Water Users

Customer Water Service Address	Customer Class[1]	2010 Annual Usage (gal)	2010 Avg. Daily Usage (gal)	Percent of Total Consumption [2]
Seventh Ave. 120	6	6,554,000	17,956	8.5%
B St. 516-A	0	6,071,000	16,633	7.9%
Main St. 204 C	3	1,454,000	3,984	1.9%
North St. 330	2	876,000	2,400	1.1%
Main St. 615/617	3	655,000	1,795	0.9%
Mabton/Southside Rd. 8301	8	614,000	1,682	0.8%
No. Third St. 207	6	529,000	1,449	0.7%
Mabton/Southside Rd. 8279	8	440,000	1,205	0.6%
North Third St. 214	6	432,000	1,184	0.6%
Allison Rd. 182	0	347,000	951	0.5%

(1) City Customer Class codes: 0=Water Only; 2=Business; 3=Apartments; 6=Schools; 8=Outside Water Only.

(2) Total consumption for 2010 = 77,106,000 gallons, see Table 2-6.

FUTURE SERVICE AREA

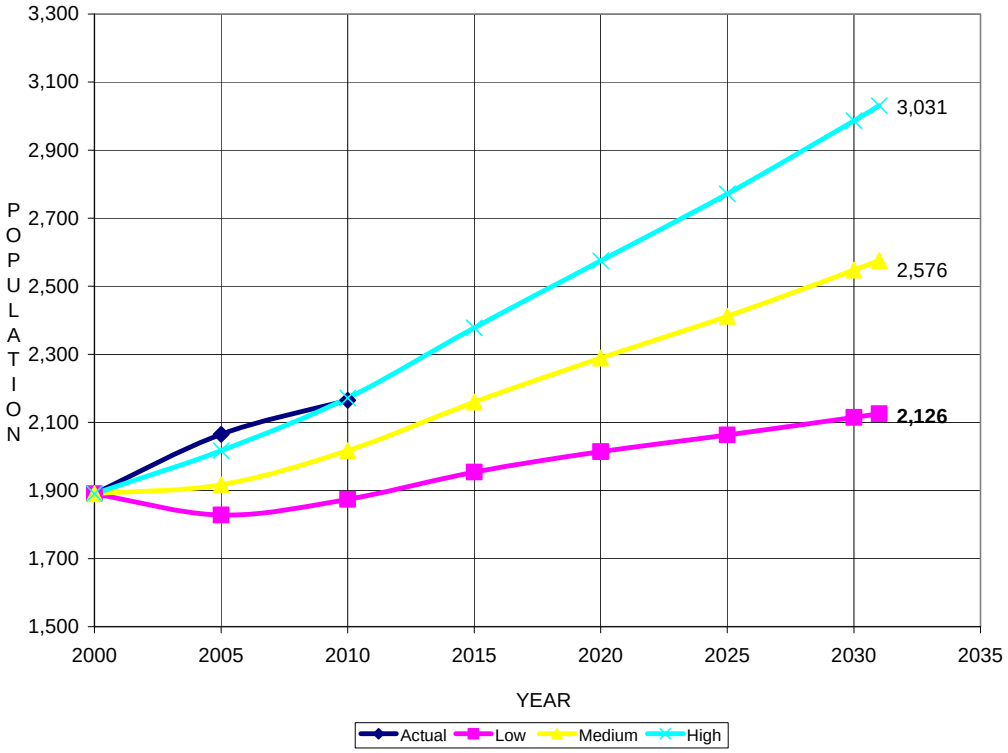
The City's residential housing has remained fairly constant. In 2008, the City adopted Resolution No. 2008-2, a resolution concerning the annexation of several parcels of land on the eastern edge of the City, referred to as the Northwest Horticulture/Allison Road Annexation. The City's water system permit color is currently coded Green, allowing new water system connections to serve this and other areas up to the number of DOH approved connections.

PROJECTED POPULATION, ADD, MDD, AND PHD

Figure 2-3 presents the low, medium and high population projections from the 2009 City of Mabton Comprehensive Plan Update and the actual population growth for 2000 to 2010.

FIGURE 2-3

City of Mabton
Comprehensive Plan Population Projections (1), (2), (3)



(1) The baseline 2000 population was 1,891.
(2) Data from the 2009 *Comprehensive Plan Update* for the years 2000 to 2025.
(3) Population projected for 2025 to 2031 at 0.5% for low projection, 1.1 % for medium projection and 1.5% for high projection.

The actual growth between 2000 and 2010 matched the "high" population projection because the actual population in 2010 was 2,165 people. For planning purposes, the 2009 City of Mabton Comprehensive Plan Update states that the medium and high forecasts should be utilized. This Plan will utilize the high population projection, since the historic growth rate matched the high population projection and the 2009 City of Mabton Comprehensive Plan Update requires utilizing the medium or high projection. The high growth rate projection is 1.5 percent per year between 2020 and 2025 per the City's planning consultant, the Yakima Valley Conference of Governments (YVCOG). Therefore, a growth rate of 1.5 percent per year will be utilized to extend the forecast from 2025 to 2031.

City officials do not know of any large businesses with plans to begin operations in the City in the near future. However, as the population increases, new businesses are expected to open, and businesses serving the everyday needs of the community are expected to expand to meet these needs. As a result, it is projected that the number of new businesses and new residences on the system will grow at the same annual rate as the population.

Table 2-9 summarizes the City's population, ADD, MDD, and PHD projections for the next six and 20 years. Population projections for the City's current corporate boundary were based on the 1.5 percent annual growth rate recommended in the City's comprehensive plan. The City's non-residential ERUs are conservatively assumed to grow at the same rate as the residential population. The ADD is based on a production demand of 323 gpd/ERU, plus an assumed constant amount of DSL of 50,000,000 gal./yr. to account for DSL (Table 2-6). Other values are based on an MDD/ADD ratio of 2.1, and a PHD/MDD ratio of 2.1.

TABLE 2-9

Projected ADD, MDD, and PHD

Year	Population (1)	ERUs (2)	ADD(3) (gpd)	Annual Prod. (af/yr)	MDD(4) (gpd)	MDD (gpm)	PHD(5) (gpm)
2012	2,230	702	364,000	408	764,000	531	1,114
2018	2,439	768	385,000	431	809,000	562	1,180
2032	3,004	946	443,000	496	930,000	646	1,356

(1) Population was estimated using Mabton's actual 2010 population growing at 1.5% annually.
(2) ERUs for Mabton are estimated to grow at 1.5% using Mabton's consumption of 323 gpd/ERU.
(3) ADD calculated from ERUs x 323 gpd/ERU + 50,000,000 gal/yr. (137,000 gpd) (DSL).
(4) MDD = ADD x 2.1.
(5) PHD = MDD x 2.1.

Projected savings from water use efficiency measures are discussed in Chapter 4.

CHAPTER 3

SYSTEM ANALYSIS

CHAPTER 3

SYSTEM ANALYSIS

The purpose of this chapter is to determine the ability of the City's existing water system to meet current and future water quality and quantity requirements. The major sections of this chapter are:

- System Design Standards
- Water Quality
- Facility Analysis
- Water System Physical Capacity Analysis
- System Deficiencies

SYSTEM DESIGN STANDARDS

Water systems are regulated by federal, state, and local design and construction standards. Standards that affect Mabton's water system are summarized in the sections below.

GENERAL FACILITY STANDARDS

WAC 246-290 is the primary drinking water regulation used by DOH to assess capacity, water quality, and compliance with drinking water standards. The 2009 Water System Design Manual (WSDM) serves as guidance for the preparation of plans and specifications for Group A public water systems in compliance with WAC 246-290. The WSDM also references the following codes and guidelines.

- Uniform Building Code (the International Building Code was adopted by all state and local agencies in 2004)
- Uniform Plumbing Code
- Recommended Standards for Water Works (RSWW), Ten State Standards
- Local codes
- American Water Works Association (AWWA) Standards
- American Society of Civil Engineers (ASCE) Standards
- American Public Works Association (APWA) Standards

Table 3-1 lists the suggested WSDM guidance and the City's policies with regard to each standard for general facility requirements.

TABLE 3-1

General Facility Requirements

STANDARD	DEPARTMENT OF HEALTH WATER SYSTEM DESIGN MANUAL	City of Mabton Standards
Average Day and Maximum Day Demand	Average Day Demand (ADD) should be determined from metered water use data. Maximum Day Demand (MDD) is estimated at approximately two times the ADD if metered data is not available.	ADD = Metered production MDD = 2.1 * ADD estimated based on WSDM.
Peak Hour Demand	Peak hour demand (PHD) is determined using the following equation: PHD = (MDD/1440(CN +F)+ 18, where MDD is in gpd/ERU, and C and F are coefficients based on N, the number of ERUs. See Eq. 5-3, WSDM	PHD = 2.1 * MDD based on Eq. 5-3, WSDM.
Source Capacity	Capacity must be sufficient to meet MDD and replenish fire suppression storage within 72 hours.	Same as WSDM, Chapter 7.
Storage Requirements	The sum of: Operational Storage Volume sufficient to prevent pump recycling. Equalizing Storage $V_{ES} = (Q_{PH} - Q_S) * 150$ Standby Storage $V_{SB} = (2 * ADD * N) - t_m * (Q_S - Q_L)$ Fire Suppression Storage $V_{FSS} = NFF * T$ ADD = average day demand, gpd/ERU N = number of ERU's Q_{PH} = peak hour demand, gpm Q_S = capacity of all sources, excluding emergency sources, gpm Q_L = capacity of largest source, gpm t_m = daily pump source run time, min (1440) NFF = needed fire flow, gpm T = fire flow duration, min	Same as WSDM, using the formulas provided in the manual, Chapter 9.
Minimum System Pressure	The system should be designed to maintain a minimum of 30 psi in the distribution system under peak hour demand and 20 psi under fire flow conditions during MDD.	Same as WSDM, Chapter 8.
Fire Flow Rate & Duration	The minimum fire flow shall be determined by the local fire authority or WAC 246-293 for systems within a critical water supply service area (CWSSA).	Fire flow requirements are based on the (local) Fire Department standards.
Minimum Pipe Size	The diameter of a transmission line shall be determined by hydraulic analysis. The minimum size distribution system line shall not be less than 6-inches in diameter.	Same as WSDM, Chapter 8.

TABLE 3-1 (cont.)

General Facility Requirements

STANDARD	DEPARTMENT OF HEALTH WATER SYSTEM DESIGN MANUAL	City of Mabton Standards
Reliability Recommendations	• Sources capable of supplying MDD within an 18-hour period • Sources meet ADD with largest source out of service • Back-up power equipment for pump stations unless there are two independent public power sources • Provision of multiple storage tanks • Standby storage equivalent to ADD x 2, with a minimum of 200 gpd/ERU • Low and high level storage alarms • Looping of distribution mains when feasible • Pipeline velocities not > 8 fps at PHD • Flushing velocities of 2.5 fps for all pipelines	Same as WSDM, Chapter 5.
Valve and Hydrant Spacing	Sufficient valving should be placed to keep a minimum of customers out of service when water is turned off for maintenance, repair, replacement or addition. As a general rule, valves on distribution mains 12-inches and smaller should be provided at least every 1,000 feet. Fire hydrants on laterals should be provided with their own auxiliary gate valve.	Valve and hydrant standards are outlined in the City's Developer Standards.
Water Quality Standards	The primary drinking water regulation utilized by Health to assess capacity, water quality, and overall compliance with drinking water standards.	WAC 246-290

CONSTRUCTION STANDARDS

The City has prepared a set of standards for developers and the City to follow when constructing water system components. These standards are included in Chapter 7 so they can be approved by DOH as part of this plan. Such approval is one of the requirements that will allow the City to construct distribution mains and distribution-related projects without the requirement to submit project reports (WAC 246-290-110) and construction documents (WAC 246-290-020) to DOH.

FIRE FLOW DEMANDS AND MINIMUM PRESSURE

The City does not have a listing of specific fire flow requirements for buildings located in the City. The IFC indicates that the minimum fire-flow requirement for one- and two-family dwellings of 3,600 square feet or less is 1,000 gpm for 2 hours, which applies for most of Mabton's residential neighborhoods. For buildings other than one- and two-family dwellings, or for buildings with greater than 3,600 square feet of area, the fire-

flow is per Table B105.1 (See Appendix D). The City's Volunteer Fire Chief has determined that the maximum fire flow requirement is 1,500 gpm for 2 hours.

Consistent with WAC 246-290-230, the City requires a minimum pressure of 30 psi under PHD conditions with operating and equalizing storage depleted, and 20 psi during concurrent fire flow and MDD conditions with fire suppression storage depleted.

WATER QUALITY

Group A public community water systems must comply with the drinking water standards of the federal Safe Drinking Water Act and its amendments. DOH has adopted these federal standards under WAC 246-290. To enable Group A water systems to comply with the regulations, Health issues each system a Water Quality Monitoring Report (WQMR) listing that system's reporting requirements. The City's current WQMR is provided in Appendix H.

The City, which provides continuous disinfection via chlorination, has had the occasional unsatisfactory bacteriological sample tests from the distribution system tests in recent years, but all repeat samples have been satisfactory. There have been two positive total coliform tests since January of 2008.

Well No. 3 frequently tests high in Nitrate-N with results of 10.2 to 24.6 mg/L verses a Maximum Contaminant Level (MCL) of 10 mg/L for Nitrate-N. This well is used for emergency only, and if used, the output is blended per agreement with the DOH, to produce water below the MCL. The blending is accomplished in the reservoir.

The City's water is discharged to aeration trays located at the top of the City's reservoir in order to remove methane gas and hydrogen sulfide which are naturally occurring in the City's water sources. This aeration helps to reduce the potential for a buildup of explosive gases due to the methane and also to reduce taste and odor issues due to the hydrogen sulfide.

The City is in compliance with all other State and federal water quality requirements. The City's Coliform Monitoring Plan is provided in Appendix F, and results of the last 12 years of test result exceedances as reported by the DOH are provided in Appendix G. Results of all tests can be found on the DOH Sentry website.

FACILITY ANALYSIS

Figure 1-1 shows a map of the City's existing water system. The system serves a single pressure zone.

SOURCE

The City's water supply consists of four wells, Wells No. 2, No. 3, No. 4 and No. 5. The City has removed the pump and motor from Well No. 2. Due to higher nitrate levels in Well No. 3, this well is reserved for emergency purposes only. Therefore, the City normally pumps from Wells No. 4 and No. 5. Well No. 4 has a capacity of approximately 200 gpm and Well No. 5 has a capacity of 500 gpm, for a total pumping capacity of approximately 700 gpm.

The source capacity analysis as shown in Table 3-2 is approximate due to the lack of a functioning source meter on Well No. 4. Without a functioning source meter, the production capacity of Well No. 4 cannot be verified. In addition, it has been observed that occasionally on high water demand weekends in the summer, the source capacity cannot keep up with system demands and replenish the reservoir during the night as indicated by the circle chart records which record the reservoir level. These circle charts indicate that occasionally the water level drops significantly, typically on hot, summer weekends.

Well No. 4 recently failed in 2013. When the pump was removed, general consensus was that the well had been drawing down the dynamic water level to the intake, and the pump had been damaged by pumping air. The well has been cleaned and is currently being repaired. A flow test of the well with a temporary submersible pump installed indicated a flow rate of 240 gpm with a stabilized drawdown to 411 bgs. For the purposes of this Water System Plan, a flow rate of 200 gpm has been estimated for this well. The actual flow rate of the equipped well will be known once the repair is completed.

FIGURE 3-1

Reservoir Circle Chart of Pressure/Water Level

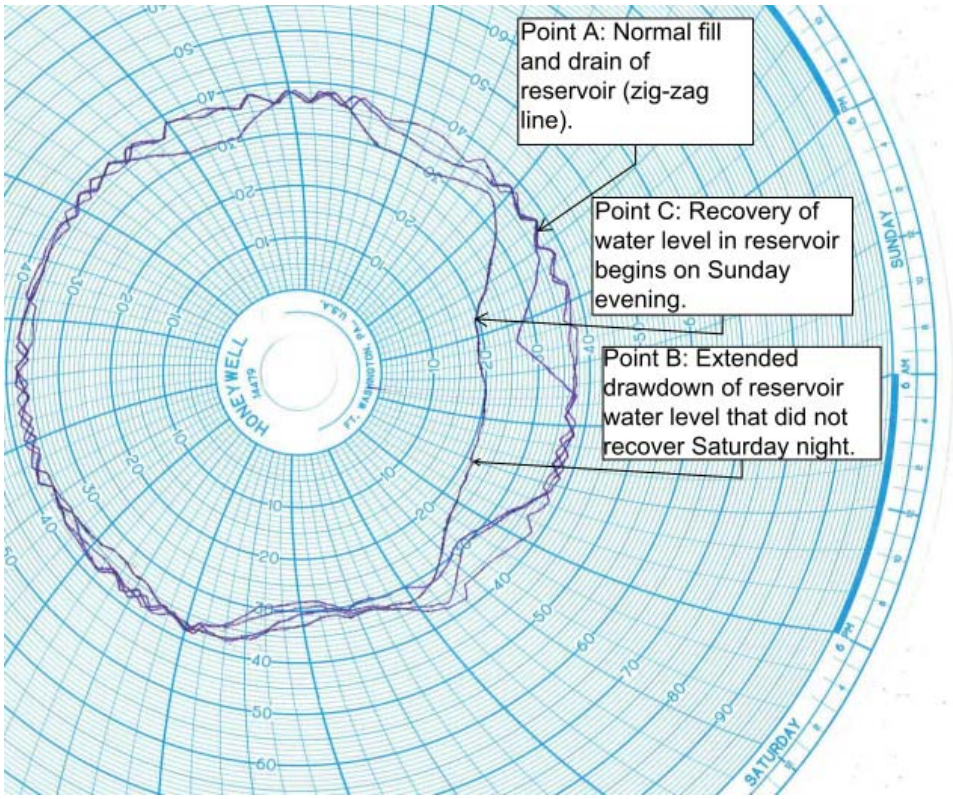


Figure 3-1 is an example of a circle chart for the City's reservoir dated 8-16-2012. The City used this particular chart to record four weeks of pressure measurements of the water in the reservoir which corresponds to the reservoir's water surface level.

Point A indicates normal filling and draining of the reservoir. This is when the water level is drawn down to a point and the well(s) are turned on to fill it back up. Point B shows that the water surface is drawn down, the wells have turned on, but the water surface continues to drop until Point C, where the demands have lessened (Sunday evening) and the water surface begins to recover, but in this case it is not until Monday evening that the water surface actually recovers to a normal fill and drain pattern.

At Point C, the recording of approximately 18 psi corresponds to a water surface elevation of approximately 41 feet above the bottom of the reservoir. At this level, the reservoir has drained roughly 305,000 gallons of the 612,000 gallons of usable capacity (about half of the reservoir volume).

The City's source capacity at times is insufficient to keep up with the demands. In addition, the City needs to have a source meter and level sensor installed for Well No. 4 in order to be able to know this well's output and dynamic water level and to provide some warning to the City when there may be a problem with the well. Also noted is that Wells No. 3 and No. 5 do not have level sensors. Level sensors are suggested for these wells in order for the operator to monitor the water levels which can help determine if there may be a problem with a dropping water table or clogged screen/perforations. The source meter on Well No. 3 is also not functioning, but as this source is generally for emergency use only, and therefore used very infrequently, installing a source meter on this well is of a lower priority. The City will try to repair this meter if possible.

The City's water consumption records indicate only approximately 85 gpd per person water usage. Since the City's Wastewater Treatment Plant (WWTP) receives approximately 80 gpd/person, it is possible that the consumption meters are under-reporting the water consumption or that there may be illicit water usage. This would help to explain why the City's sources cannot keep up with consumption.

Source and Treatment Capacity

WAC 246-290-222 (4) requires total source capacity to be sufficient to provide a reliable supply of water equal to or exceeding the MDD at all times. For the analysis in Table 3-2, both Wells No. 4 and No. 5 were assumed to be running. However, with the City's largest well, Well No. 5, out of service, the 200 gpm capacity of Well No. 4 is insufficient to meet the City's current MDD.

TABLE 3-2

Source Capacity Analysis

Year	Source Capacity[(1)] (gpm)	MDD [(2,3)] (gpm)	(+ / -)[(4)] (gpm)
2012	700	531	+ 169
2018[(5)]	1,700	562	+ 1,138
2032[(5)]	1,700	646	+ 1,054

(1) Assumes both Wells No. 4 (200 gpm) and No. 5 (500 gpm) are operating.
(2) From Table 2-10.
(3) Note that if either well is out of service, MDD cannot be supplied in 2012 (until new 1,000 gpm well is constructed).
(4) See the discussion above concerning the circle chart.
(5) Assumes new Well No. 6 in production at 1,000 gpm.

Source Reliability

Besides meeting the requirements of WAC 246-290-222 (4), the WSDM recommends that systems wishing to provide a high level of reliability to their customers consider the following source criteria for emergency conditions:

1. Provide sufficient source capacity to meet the MDD and replenish fire suppression storage within 72 hours. The largest fire suppression storage requirement is 180,000 gallons (1,500 gpm for 2 hours).
2. Meet the MDD with 18 (rather than 24) hours of pumping.
3. Meet the ADD with the largest source out of service.
4. Provide two independent power feeds, or portable or in-place backup power unless the power grid meets the following minimum reliability criteria:
   - Outage frequency averages three or less per year based on data for the three previous years with no more than six outages in a single year. A power outage is considered a loss of power for 30 minutes or longer.
   - Outage duration averages less than four hours based on data for the three previous years with not more than one outage during the three previous year period exceeding eight hours.

Table 3-3 indicates deficiencies in 2012 and that if the City constructs the new Well No. 6 at 1,000 gpm and the City's other sources continue to produce as indicated at the end of the 20-year planning period, the City will be able to meet the three recommended criteria.

TABLE 3-3

Source Reliability Analysis

Condition	Q (avail.) [(1)] (gpm)	Q (req'd) (gpm)	(+/-) (gpm)
2012			
1. Meet MDD & Replenish FSS w/in 72 hrs	700	572	+128
2. Meet MDD w/ 18 hrs Pumping	525	531	(6)
3. Meet ADD w/o Largest Source	200	253	(53)
2032			
1. Meet MDD & Replenish FSS w/in 72 hrs	1,700	688	+1,013
2. Meet MDD w/ 18 hrs Pumping	1,275	646	+629
3. Meet ADD w/o Largest Source	700	308	+392

(1) Includes estimated outputs Well No. 4, Q = 200 gpm, and Well No. 5, Q = 500 gpm. In 2032, it has been assumed that the City has constructed a new 1,000 gpm Well No. 6. For the second condition, Q (avail) = (18 ÷ 24) × Q (both wells) = 0.75 × 700 = 525 gpm in 2012.

Regarding the fourth condition, outage data from Pacific Power and Light indicate that the City has had four outages lasting longer than 30 minutes in the last three years. The longest was about 4.5 hours in length. The average outage was about 3 hours. Well No. 4 and Well No. 5 and the booster pumping station are all served by the same substation and feeder, so if this feeder is out, all three of these facilities are without power.

While backup power would provide increased reliability for the City's water supply, reliability criteria do not require it at this time. The City intends to provide backup power generation for the new 1,000 gpm Well No. 6. This well would be able to supply the City's demands if power were to fail. The pressures would not be boosted by the booster pump station, but low pressure water would be available.

Source Protection

Source water protection is covered under WAC 246-290-135. Pertinent sections of this rule for Mabton include a section on the sanitary control area (SCA) and a section on wellhead protection.

The SCA consists of the area within a 100-foot radius around each well that must be kept free from "construction, storage, disposal, or application of any source of contamination". The City owns all of the property within the SCA for Well No. 3 and the majority of the property within the SCAs for Wells No. 4 and No. 5. The City plans to approach property owners within the Well No. 4 and No. 5 SCAs to obtain a restrictive covenants per WAC 246-290-135(2)(g).

The City's 2005 Wellhead Protection Program and a 2012 update are provided in Appendix H.

Water Rights

Table 3-4 summarizes the adequacy of the City's water rights to serve its customers for the 6- and 20-year planning periods.

TABLE 3-4

Water Rights Adequacy

Year	Instantaneous Quantity (Qi)			Annual Volume (Qa)		
	MDD [1] (gpm)	Qi [2] (gpm)	(+ / -) (gpm)	Annual Prod. [1] (af/yr)	Qa [2] (af/yr)	(+ / -) (af/yr)
2012	531	1,000	+469	408	452.4	44.4
2018	562		+438	431		21.4
2032	646		+354	496		(43.6)

(1) From Table 2-8.
(2) Source: certificates for G3-00027C, G4-29212C and Report of Examination for G4-29212.

As indicated, the City's water rights are adequate to meet the current needs through the six-year planning period, however fall short for the 20-year planning period. The City's water rights self assessment form is provided in Chapter 4, Water Use Efficiency.

The City plans to keep their water use within their water rights by the following:

1. Conservation efforts including:
   a. leak detection (performed in December, 2012)
   b. water main leak repair (on-going)
   c. water main replacement
2. Obtain additional water rights through acquisition.
3. Apply for additional water rights. The City is aware that no water rights are being issued by the Department of Ecology at this time, however the City would like to establish a priority date for their application for additional rights should these become available in the Yakima Valley at some future date.

Note that the City's 2005 Water System Plan indicated that Mabton was currently exceeding the annual volume water right. Due to the lack of production records and information necessary to allow a reasonably accurate determination of distribution system leakage (DSL), the City hired American Leak Detection to perform a leak detection study to assist in prioritizing the selection of water main repairs and water main replacements. This study surprisingly found just two significant leaks in the City's distribution system, most of which is comprised of 4-inch cast iron piping installed back in 1936, which is now over 76 years old.

Once the City has functioning source meters and has developed an historical record of their water production, the determination of whether the City's water use is within or exceeding their water right can be more accurately determined. The City intends to continue their water conservation efforts, and will pro-actively seek to purchase additional water rights as it is projected that the City's rights will be exceeded in the 20-year planning period.

STORAGE

The City has one reservoir, a single 800,000 gallon welded steel reservoir located in the Mabton City Park at the intersection of South Main Street and Fern Street. The reservoir serves the City's single pressure zone after the pressure is boosted at the BPS, which is also located in the same park, adjacent to the reservoir. The reservoir has an overflow elevation of approximately 835 ft msl, however the City maintains the top of operational storage at 811 feet (in order to provide for the aeration trays and aeration of the water). Therefore the storage volume in use is approximately 612,000 gallons.

WAC 246-290 and the WSDM define the following storage volumes for reservoirs.

- *Operational Storage (OS).* Operational storage is the volume at the top of the reservoir that is used to control the well pumps. The City uses the top 5 feet, or approximately 35,000 gallons, for this purpose.

- *Equalizing Storage (ES).* This storage component consists of the amount of storage needed to make up the difference between the PHD and the source capacity of the water system. The WSDM requires sufficient ES to make up this difference for 150 minutes, i.e.,

  $$ES = (PHD - Q_S)(150 \text{ min}),$$

  where Q_S = the sum of all well capacities (in gpm) in the zone supplying the reservoir. WAC 246-290-230 (5) requires a minimum pressure of 30 psi at the bottom of ES.

- *Fire Suppression Storage (FSS).* Fire suppression storage is the amount of storage required to fight a fire. WAC 246-290-230 (6) requires a minimum pressure of 20 psi when the system is simultaneously providing MDD plus the required fire flow. The required FSS is determined to be the amount of required fire flow multiplied by the fire flow duration. The City's largest maximum fire flow storage requirement is 1,500 gpm × 120 min = 180,000 gallons.

- *Standby Storage (SB).* The purpose of standby storage is to provide a measure of reliability when sources fail, power outages occur, or another emergency places the burden of water system supply solely on storage. With the approval of the local fire authority (which the City's Fire Chief has granted), WAC 246-290-235 allows fire suppression and standby storage to be nested, with the larger of the two volumes being the minimum required. Section 9.0.4 of the WSDM indicates that SB should provide for two days of ADD assuming the largest water source is out of service, i.e.,

$$SB1 = (2\ days)(ADD) - t_m(Q_S - Q_L)$$

where Q_L = the capacity of the largest source, and t_m is the time that the sources are pumped during the two-day outage. The WSDM suggests using t_m = 1,440 minutes, or one day of pumping.

Alternatively, the WSDM recommends that SB be no less than 200 gallons times the number of ERUs being served by the reservoir.

Dead Storage (DS). Dead storage is water below the minimum design pressure of 20 psi during an emergency event. For Mabton the highest service meter is at approximately elev. 734, putting the minimum allowable hydraulic gradient at elev. 780 (734 + 20 ÷ 0.433). This elevation is approximately 57 feet from the bottom of the reservoir, which is why the City has a booster pumping station (BPS), to make use of the additional volume in the reservoir below this point and to boost pressures throughout the City.

WAC 246-290-235(4) allows fire suppression storage and standby volumes to be combined or "nested", provided the local fire protection authority does not require them to be additive. While the City's volunteer fire chief agrees that nesting of FSS and SB is allowable, it is found to not be necessary as the existing storage can provide both of these volumes independently. Table 3-5 shows the analysis of the City's physical storage capacity without nesting.

TABLE 3-5

Storage Volumes without Nesting

Year	Storage Component (Amounts in gal)					(+/-) [2] (gal)
	OS	ES	FSS [1]	SB	Total	
2012	35,000	62,000	180,000	140,000	417,000	195,000
2018	35,000	-	180,000	154,000	369,000	243,000
2032	35,000	-	180,000	189,000	404,000	208,000

(1) Fire Suppression Storage of 1,500 gpm for 2 hours.
(2) Total storage in reservoir = 612,000 gal.

As shown, the City has adequate storage based upon the City requirement of FSS=1,500 gpm for 2 hours for the current planning year of 2012 and the planning periods of 2018 and 2032 (assuming Well No. 6 is constructed at 1,000 gpm). There is a storage shortage projected beginning in 2018 if the new well or new reservoir is not constructed assuming no nesting. With nesting, the shortage appears in the 2032 planning period.

The City's volunteer fire chief sets the fire suppression storage (FSS) at 1,500 gpm for 2 hours.

The reservoir appears structurally sound, however from a brief visual inspection; it appears that the tank's seismic anchorage may not meet current code requirements. Table 3-6 shows the storage volumes with nesting of FSS and SB storage.

The existing reservoir cannot provide adequate pressures to the City's water system without the use of a booster station. It is estimated that the booster station, which normally must be run continuously, costs between $20,000 and $25,000 annually to operate. The City would like to construct a new, higher reservoir (as a capital improvement), or modify the existing tank in order to eliminate the need for a continuously running booster station. Note that the existing booster station includes a fire-flow booster. It is likely that the City would prefer to keep the seldom used, fire-flow booster even with a new or modified reservoir.

BOOSTER PUMPING STATION

The City constructed a closed-system BPS in 1988 to improve pressures throughout the City. One 10 HP service pump runs continuously to keep the system pressurized with a 15 HP pump and a second 15 HP pump to provide additional capacity in higher demand situations. There is also a 30 HP, (1,200 gpm @ 70' TDH) pump available to provide fire flow.

WAC 246-290 and the WSDM require that a closed system BPS meet the criteria shown in Table 3-6.

TABLE 3-6

Closed Booster Station Design Criteria

Condition	Reservoir Level	Demand Condition	Minimum Pressure
1(1)	ES Depleted	PHD	30
2	ES & FSS Depleted	PHD	30
3(2)	ES & FSS Depleted	MDD + Fire Flow	20

(1) For reliability purposes, DOH recommends the BPS provide this capability when the largest capacity booster pump is out of service.

(2) This demand condition is not met by the BPS.

TRANSMISSION AND DISTRIBUTION

This section provides a discussion of the hydraulic model calibration and results, and the improvements resulting from the modeling.

Hydraulic Capacity Analysis – Modeling

A hydraulic model was developed for the City's water system by creating an H_2ONet database of the distribution system, reservoirs, and wells. H_2ONet uses a graphical interface loaded into AutoCAD to develop the water system grid and components. A linked computer model performs hydraulic calculations and returns output flows and pressures.

Field fire flow testing was conducted on April 26, 2012 to obtain data necessary for calibration of the model. During this testing, several fire hydrants throughout the City were opened and flows were recorded with a pitot gauge on the hydrant. Pressures at nearby locations were recorded before, during, and after the testing. These values were used to adjust parameters in the H_2ONet model until its output generally matched the field results obtained through hydrant flowing.

In the model runs it was assumed that the City's reservoir was drawn down to El. 737, the level where OS, ES, and FSS are depleted, that all wells were off, and the system demand was set to fire flow plus the 2032 MDD. This case was more severe than the 2032 PHD with OS and ES depleted. The model was run for the City's single pressure zone with the BPS running, assuming the BPS could provide all the flow needed to meet the MDD + FF (which it actually cannot due to the BPS capacity). The small diameter of many of the City's water mains restrict flows and prevent the system from providing fire flows adequate to meet the City's fire flow requirements.

In general, the model indicates that the much of the City's distribution system cannot provide the City's fire flow requirement while supplying the MDD and providing minimum or better pressures. Since approximately 50 percent of the City's water mains consist of 4-inch cast iron pipes, these small diameter pipes simply do not allow for adequate flows to support the fire flow demands.

Fire Flow Deficiencies

As indicated above, there are several lines with hydrants that are unable to deliver the City's required fire flow of 1,000 gpm in residential areas and 1,500 gpm in commercial areas. In some locations, these demands can be met by combining the flows from two or more hydrants, however the spacing of hydrants in the City makes this impractical in many locations. The City plans to begin replacing some of the older, undersized water mains to build out a "skeleton" framework, to push higher flows out to the perimeter of the City, then to fill in the framework by replacing the smaller lines in the system.

To give a general indication of the projected fire flow improvements by the initial three projects for framework upgrades, after these improvements are made, the model indicates that the fire flows would be as shown in Table 3-7. Their locations are shown on Figure 4-1. These projects are identified as Priority A projects (Table 8-1).

TABLE 3-7

Fire Flow Improvements

Imp. No	Location	Improvement	Length (ft)	Location and Model Node	Fire Flow (gpm)[1]	
					Before	After[2]
1.	South Street 8" Water Main, Reservation St. to the Alley 170 ft. West of Main St.	Upsize 4" CI to 8" PVC Water Main	1,050	Intersection of South St. and Reservation Road, J130	596	1,149
2.	Monroe Street 8" Water Main, from Seventh Ave to Alley East of First Ave.	Upsize 4" CI to 8" PVC Water Main	1,850	Intersection of Monroe St. and Alley East of Sixth Ave., J120	482	906
3.	Alley East of First Ave. 8" Water Main, from Washington St. to Monroe St.	Upsize 4" CI to 8" PVC Water Main	1,400	Intersection of Monroe St. and Alley East of First Ave., J110	471	926

(1) Before and after with criteria of MDD and 20 psi minimum.

(2) Note that while the fire flows at these nodes for improvements No. 2 and No. 3 are below the 1,000 gpm residential FF, once the additional projects within the City are performed, these nodes will supply in excess of 1,000 gpm.

TREATMENT

The City disinfects its water supply, but is not currently required to do so. The City endeavors to provide a residual of 1 mg/l throughout the distribution system and chlorinates with Wallace and Tiernan gas chlorination equipment located in the Well No. 3 well house. According to the City's 1989 Operations and Maintenance manual for the project which installed the chlorination system, the chlorine solution is injected via a ¾" PVC line in the reservoir through a chlorine manifold which distributes the chlorine for improved contact and mixing. No improvements are anticipated for the chlorination system at this time.

SYSTEM CONTROL

The City utilizes pressure switches to operate its water system. The system uses water level information from the reservoir to activate the City's wells that are in service. The pressure of the reservoir's discharge pipe is recorded at the BPS on a circular chart recorder and is also displayed on an analog meter. At this time, the City does not plan improvements to this system.

OPERATION AND MAINTENANCE

The City has identified several O&M projects for the next six years. These projects are discussed in Chapter 6, Operation & Maintenance (see Table 6-7).

WATER SYSTEM PHYSICAL CAPACITY ANALYSIS

Worksheet 6-1 from the WSDM, presented at the end of this chapter, shows that the City has sufficient source, and storage capacity to meet the City's 2012 needs, however is in need of either additional water rights or needs to reduce the annual consumption to be within the City's annual water right. Table 3-8 summarizes the adequacy of the City's water system components to meet existing, 6-year, and 20-year demands.

TABLE 3-8

System Component Adequacy[(1)]

Component	Available Capacity	Requirement			Comment
		2012	2018	2032	
Source, MDD, gpm[(2)]	700 / 1,700	531	562	646	Table 3-2
Water Rts, Qi, gpm	1,000	531	562	646	Table 3-4
Water Rts, Qa, ac-ft/yr	452.4	408	431	**496**	Table 3-4
Equalizing Storage, gal	62,000	62,000	-	-	Table 3-5
Fire Supp. Storage, gal	180,000	180,000	180,000	180,000	Table 3-5
Standby Storage, gal	397,000	140,000	154,000	189,000	Table 3-5

(1) Deficient values are shown in bold.
(2) Source capacity shown here is estimated with Well No. 4 at 200 gpm and Well No. 5 at 500 gpm in 2012. In 2018 and 2032, it is assumed that the City has an additional 1,000 gpm of source capacity with new Well No. 6.

SYSTEM DEFICIENCIES

Table 3-9 summarizes deficiencies identified in this chapter and the improvements the City plans to implement to correct them. A schedule for the improvements planned within the next six years is presented in Chapter 8. Preliminary cost estimates are also provided in Chapter 9.

TABLE 3-9

Summary of Deficiencies

Category	Deficiency	Improvement/Comment
Source	Water Rights. The City has sufficient instantaneous (Qi) water rights for the next 20 years and beyond, but has inadequate annual (Qa) water rights in the 20 year planning period.	The City will seek to reduce their water use and water losses in order to stay below their Qa water right, and seek to acquire additional water rights in the 6-year planning period.
	Wells. The City's wells with estimated total production at 700 gpm, are inadequate to serve its retail water service area for the next 20 years.	Well No. 4 needs to be repaired and a new, 1,000 gpm well is proposed to be drilled and equipped. Well No. 4 needs a source meter and water level sensor. Well 5 will also be fitted with a level sensor.
Storage	The City's storage volumes are adequate to meet 20-year demands if the 1,000 gpm well is constructed.	The DOH recommends more than one storage reservoir for increased reliability and for maintenance purposes. The City intends to construct a new 1 Mgal. reservoir or modify the existing reservoir in order to eliminate the booster station.
Treatment	The City is in compliance with all water quality requirements.	No improvements needed.
Control	The City does not have a functioning source meter on Well No. 4 or water level sensor on Well Nos. 4 and 5, otherwise, the City's controls are adequate to meet its 20-year needs.	The City will put a source meter and level sensor for the repaired Well No. 4. A level sensor is needed for Wells No. 3 and No. 5. If work is to be done on these two wells, the addition of a water level sensor will be considered.
Booster Pumping Station	The City's BPS is adequate to meet its 20-year needs.	No improvements needed, but the City would prefer to eliminate the need for the continuously running boosters, so will plan to construct a new higher, reservoir in order to eliminate this need.
Distribution	The distribution system has known locations of leaks in the distribution system.	Repair the identified leaks in the city's system, and then begin a water main repair and/or replacement program in order to reduce the DSL.
	Several 4- and 6-in lines (see Table 3-7 and 3-8) do not meet fire flow requirements, and many mains have out lived their service life.	Begin a water main replacement program to upsize and loop lines per Table 3-7 and 3-8.
O&M (see Ch. 6)	Source meters need to be periodically rebuilt & calibrated.	Implement a program to rebuild and calibrate one source meter every four years.
	Several valves are aged and do not close.	Perform testing of all valves in the City and then replace valves as necessary.
	Water mains require flushing to improve water quality.	Establish and implement a directional flushing program.

WORKSHEET 6-1: ERU Determinations

Mabton Water System Physical Capacity Documentation based on MDD

Note: *Capacity determinations are only for existing facilities that are operational for the water system*[(1)].

Specific Single-Family Residential Connection Criteria (measured or estimated demands) (see Chapter 2):

Average Day Demand (ADD): 323 gpd/ERU (p. 2-11)
Max. Day Demand (MDD): 679 gpd/ERU (MDD = ADD × MDD/ADD = 323 ×2.1)

Water System Service Connections Correlated to ERUs			
Service Classification	**Total MDD for the Classification, gpd**	**Total # Connections in the Classification**	**ERUs**
Residential			
Single-family	310,000	457	457
Multi-family	40,000	28	59
Nonresidential			
Industrial	---	---	---
Commercial	29,800	33	44
Governmental	82,600	14	122
Agricultural	---	---	---
Recreational	---	---	---
Other	---	---	---
DSL	288,000	N/A	424
Other (identify)	---	---	---
Total existing ERUs =			**1,105**

Physical Capacity as ERUs			
Water System Component	**Calculated Capacity (ERUs)**	**2010 [(2)] (ERUs)**	**2010 (+/-) ERUs**
Source(s)[(1)]	1,485	1,105	+380
Treatment	1,485	1,105	+380
Equalizing Storage	3,367	1,105	+2,261
Standby Storage	1,390	1,105	+585
Distribution	N/A	N/A	N/A
Transmission	N/A	N/A	N/A
Other (Qi)	2,121	1,105	+1,016
Other (Qa)	1,250	1,105	+144
Water System Physical Capacity ERUs)= (based on the limiting water system component shown above)		**1,250**	

(1) Well No. 3 is for emergency use only and has therefore not been included in these capacity determinations. Source capacity estimated as follows: Well No. 4 at 200 gpm and Well No. 5 at 500 gpm.

CHAPTER 4

WATER USE EFFICIENCY

CHAPTER 4

WATER USE EFFICIENCY

BACKGROUND

In 2003, the Washington State Legislature passed Engrossed Second Substitute House Bill 1338, which has come to be known as the 2003 Municipal Water Law. Among other things, the new law required the Washington State Department of Health (DOH) to develop a rule that defines how municipalities are to demonstrate efficient use of their water supplies. In response, DOH developed the Water Use Efficiency (WUE) Rule, which became effective on January 22, 2007. Key elements of the rule and the City of Mabton's progress in meeting the rule are summarized in Table 4-1.

TABLE 4-1

Summary of Water Use Efficiency Rule Requirements

Requirement	Deadline [(1)]	Status City of Mabton
Install source meters	January 22, 2007	In progress and included in this Water System Plan
Begin collecting production and consumption data	January 1, 2008	In progress and included in this Water System Plan
Include WUE program in planning documents	January 22, 2008	In this Water System Plan
Set WUE goals through a public process	July 1, 2010	Completed February 2013
Submit service meter installation schedule	July 1, 2009	In progress and included in this Water System Plan
Submit first annual performance report	July 1, 2009	Done
Meet distribution leakage standard	July 1, 2011	Undetermined[(2)]
Complete installation of all service meters	January 22, 2017	In progress and included in this Water System Plan

(1) These are the deadlines for municipalities with < 1,000 connections. Deadlines are generally earlier for larger municipalities.

(2) Since the City has not kept water production records, the distribution leakage can only be estimated at this time. Once the City has installed functioning production meters, the DSL can be more accurately determined.

PRODUCTION AND SOURCE METERS

The City's water supply is provided by two wells, Well No. 4 and Well No. 5. Well No. 4 has an estimated capacity to pump 200 gpm and Well No. 5 can pump approximately 500 gpm. Well No. 4 is equipped with an insertion flow meter inserted in the 8 inch well discharge pipe (currently not functioning). Well No. 5 is equipped with a 6-inch propeller flow meter. As the Well No. 4 flow meter is not currently functioning properly, the City plans to have this repaired or replaced. Further description of the City's wells is provided in Chapter 1.

The City began keeping water production records for Wells No. 5 in the January of 2012. At this time, water leakage cannot be accurately determined until the City has repaired the Well No. 4 source meter and then developed a production history.

As previously discussed in Chapter 2, the City has estimated their water losses. By combining this estimated water loss with the City's water consumption as determined by records from individual service water meters, it was possible to estimate production.

The annual production estimates, including average day demands, maximum day demands, and peak hour demands are summarized in Table 2-4. Water demand forecasts for the 6- and 20-year planning periods are provided in Table 2-10.

SERVICE METERS AND WATER CONSUMPTION

Table 2-5 summarizes the City's annual water consumption history for 2006 through 2010 by customer class. Meters are required upon hookup and all of the City's residential and commercial customers are metered. The following City parks have not yet been metered:

- Freezel Park at Washington and Main
- Governor's Park at Main Str. and South (these meters have been purchased, but not yet installed)
- Catholic Charities Housing Park

The City performs maintenance and replacement on service meters as needed.

INTERTIES

The City does not have any interties with other water systems.

WATER USE EFFICIENCY PROGRAM

In January 2009, DOH published the second edition of its Water Use Efficiency Guidebook (Guidebook). Section 5.3 of the Guidebook summarizes the items that are to be included in a WUE program. A discussion of each item is provided in this section.

CURRENT WATER USE EFFICIENCY PROGRAM

The City encourages efficient use of water through its annual consumer confidence report. It has also adopted a base rate plus an increasing block (two-step) volume charge rate structure that encourages conservation by charging customers by volume at increasing rates for water used over a base amount.

Because the City has just started to implement a formal water use efficiency program, it is not able to determine water savings over the last six years. However, the City plans to improve its procedures for tracking water production and consumption, and expects to be able to provide reasonable estimates of projected water savings in its next Water System Plan update.

WUE GOALS

The WUE rule requires a water system's elected governing body to establish WUE goals that are measurable and have a timeframe for implementation. Mabton's WUE goals are:

- Supply side goal. Track source water production for use in future WUE reports and for determining the City's DSL.
- Demand side goal. Reduce average residential per capita use, currently at 323 gallons per day per ERU (Chapter 2), by approximately 2 percent to a level of 317 gallons per day per ERU or less over the next six years.

These goals were adopted by City Council in a public meeting on April 9, 2013 (minutes are provided at the end of this chapter). The meeting was held in accordance with the requirements of WAC 246-290-830.

WUE MEASURES

The WUE Rule requires all municipal water systems to implement and evaluate certain mandatory water use efficiency measures. The City is also required to identify additional demand (i.e., customer) side measures. The purpose of adopting a particular set of water use efficiency measures is to develop a strategy to meet the City's two water use efficiency goals described above. The mandatory measures the City is required to address are summarized in Table 4-2.

TABLE 4-2

Mandatory Water Use Efficiency Measures

Mandatory Measures	Requirement	Status
Install source meters	Implementation	Completed (replacement planned)(1)
Install service meters	Implementation	In progress and in this Water System Plan
Calibrate meters per industry standards	Implementation	As needed
Water loss control action plan if DSL>10%	Implementation	DSL above 10%
Educate customers about WUE once per year	Implementation	On-going every year
Water conservation rates	Evaluation	Completed, evaluated inclined block rates

(1) Well No. 4 source meter will be repaired and meter readings will be kept.

In addition to these mandatory measures, WAC 246-290-810(4)(d) requires systems with more than 500 and less than 1,000 connections to adopt another four demand (i.e., customer) side water use efficiency measures. The Guidebook provides that a qualified WUE measure that is implemented for different customer classes counts as multiple WUE measures.

At its April 9, 2013, City council meeting, the City adopted, in addition to the mandatory measures, one demand side measure for its nine customer classes, which results in a total of nine measures, five more than required. The City has determined that implementing these measures will be cost effective, and plans to pay for these measures using operating funds from its water utility. The City believes these measures, in addition to ongoing efforts to educate its customers about water use efficiency, will enable it to meet its second WUE goal to reduce average annual consumption from 323 gpd/ERU to 317 gpd/ERU.

Table 4-3 summarizes the demand-side water use efficiency measures the City plans to implement over the next six years. The City believes that both goals will be very cost effective in reducing customer demand.

TABLE 4-3

Demand-Side Water Use Efficiency Measures

Demand Side Measures	Customer Classes Affected	Number of Measures (1)	Est. Ann. Water Savings(2)	Status	Cost
Notify customers of high meter reads	All (3)	9	2 gpd/ ERU	On-going	Minimal
Total Measures (4 required)		**9**			

(1) Per the Guidebook, if a qualified WUE measure is implemented for different customer classes, it counts as multiple WUE measures.

(2) Savings projected by the end of the 6-year planning period. Savings are expected to enable the City to meet its second goal, i.e., to reduce consumption from 323 gpd/ERU to 317 gpd/ERU.

(3) Water Only, Residential, Business, Apartments, City/Other Bldgs, Churches, Schools, Outside Water Only, Mobile Homes.

As indicated, the City plans to adopt, in addition to the mandatory measures, nine (9) Demand Side Water Use Efficiency Measures for each of its customer classes, which is 5 more than required. The City has determined that the cost to implement these measures will be minimal. The City believes these measures, in additional to efforts to educate its customers about water use efficiency, will enable it to meet its second WUE goal to reduce average day demand by 2% by December 31, 2018.

WUE EDUCATION

The City plans to encourage water use efficiency by periodically including water conservation information with its monthly billings and in its annual consumer confidence report.

EVALUATING WUE EFFECTIVENESS

Once the City has developed a historical record of water production (once the Well No. 4 source meter is repaired and functioning), the City plans to track the effectiveness of its WUE efforts by annually checking its distribution system leakage to determine whether its on-going leak detection and repair efforts are enabling it to eventually reduce its DSL to below 10 percent. It also plans to annually check its residential water use to determine if its demand-side water use efficiency measures are helping it meet its second WUE goal to reduce residential consumption from 323 gpd/ERU to317 gpd/ERU. The City's plan for collecting data to make these evaluations is summarized in Table 4-4.

TABLE 4-4

Water Use Data Collection Strategy

Data Type	Unit of Measure	Collection Frequency	Comments
Water Production	Gallons	Weekly	Total water produced from all sources
Revenue Water	Gallons	Monthly	Billed metered consumption plus estimated billed unmetered consumption
Unbilled Consumption	Gallons	Monthly	Estimated authorized unbilled metered and unmetered consumption
Authorized Consumption	Gallons	Monthly	The sum of Revenue Water and Unbilled Consumption
Distribution System Leakage (DSL)	Gallons	Annually	Water Production – Authorized Consumption
	Percent	Annually	(Water Production – Authorized Consumption) / * 100*Water Production
Apparent Losses	Gallons	Annually	Estimated unauthorized consumption, water theft, meter inaccuracies, and other non-leakage losses.
Leakage Eliminated	Gallons	Per Occurrence	When leaks are discovered and repaired, the leakage rate and duration are estimated and the resultant leakage volume for the billing period is estimated and recorded.

Although the WUE Rule does not allow the last two items, Apparent Losses and Leakage Eliminated, to be subtracted in the calculation of DSL, both are useful in tracking opportunities for reducing DSL.

Table 4-5 shows how meeting the City's water use efficiency goals would affect its projected water demands. The estimated water savings shown in Table 4-5 assume the City has meets its demand side goal of reducing customer usage from 323 gpd/ERU to 317 gpd/ERU for the first 6 year planning period, and then hold steady at 317 gpd/ERU until the 20 year planning period.

TABLE 4-5

Projected Water Demands with Water Savings (1)

Year	Popul-ation	ERUs	ADD (gpd)	Annual Prod. (af/yr)	MDD (gpd)	MDD (gpm)	PHD (gpm)
Without Savings (Table 2-10)							
2012	2,230	702	364,000	408	764,000	531	1,114
2018	2,439	768	385,000	431	809,000	562	1,180
2032	3,004	946	443,000	496	930,000	646	1,356
With Savings							
2,012	2,230	702	364,000	408	764,000	531	1,114
2,018	2,439	768	377,000	422	792,000	550	1,155
2,032	3,004	946	434,000	486	911,000	633	1,329
Net Savings							
2,012	2,230	702	-	-	-	-	-
2,018	2,439	768	8,000	9	17,000	12	25
2,032	3,004	946	9,000	10	19,000	13	28

(1) Savings attributable to reducing customer demands from 323 gpd/ERU to 317 gpd/ERU by 2018.

DISTRIBUTION SYSTEM LEAKAGE

Current DOH rules require calculation of the three-year average DSL to determine compliance with its maximum 10 percent DSL allowance. However, with no historical source production records, this calculation cannot be performed. The analysis of the City's DSL presented in Chapter 2 estimates that City's DSL is approximately 38 percent (Table 2-6). The City seeks to more accurately track water production and consumption in order to calculate DSL.

CONSERVATION RATE STRUCTURE

The City has an inclined block rate structure. At its April 9, 2013 meeting, the City considered implementing seasonal rates in addition to increasing the volume charges for higher consumption users. At that meeting, the City decided to not change its current inclined block rate structure. There are several reasons for this.

- The City believes that while increasing these charges might promote some conservation, decreased consumption is likely to result in a decrease in revenue.
- The City's water utility is currently in good financial health (see Chapter 9), and is expected to remain so in the future.
- The City's average consumption rate of 323 gpm/ERU is already lower than many communities in Yakima County, and the City believes that any

additional reductions can be achieved better with the WUE measures outlined above.

Since 2010, the City has increased the base rate charged for water service by $6.00 per month per connection. The volume charge has remained the same during this time.

WATER SUPPLY CHARACTERISTICS

Mabton's water supply characteristics are summarized as follows:

- Name and Location. The City's water supply consists of two wells known as Well No. 4 and Well No. 5. A map of the wells and the City's water system is provided on Figure 1-1. Additional description of the City's sources is provided in Chapter 1.
- Capacity and Seasonal Limitations. Well No. 4 is assumed to have a capacity of producing 200 gpm and Well No. 5 is capable of producing 500 gpm. There are no seasonal limitations on these wells. However, the City's wells have had difficulty keeping up with peak summer demands. It is evident that the water levels in the wells have continued dropping which has contributed to the water system being occasionally unable to keep up with demands. As the City does not have water level sensing transducers in its wells, the static or dynamic water levels cannot easily be determined. It is recommended that the City install water level transducers in each of their functioning wells in order to better monitor the water levels and that these level sensing transducers be connected via telemetry (best) or be manual read at least once per year.
- Water Rights. Based upon the leakage assumptions provided in Chapter 2, the City appears to have sufficient water rights to serve its existing population, and has a surplus to meet the 6-year demands. Additional discussion of the City's water rights is provided in Chapters 1 and 3. The City's water right self assessment form is provided in Table 4-6. Pertinent water right documentation is provided in Appendix J. Note however that without functioning source meters and historical production records, it is difficult to assess the City's actual water production and consequently, the adequacy of its water rights..
- Legal Constraints. There are currently no legal constraints that would affect the City's ability to supply water to its customers over the next 20 years.

TABLE 4-6

Water Rights Self Assessment

Permit Certificate or Claim #	Name of Right Holder or Claimant	Priority Date	Source Name/Number	Primary, Additive or Non-Additive	Existing System Capacity - based on Water Right Limits		Water Right Requirement		Projected System Capacity Status (Excess or Deficiency)	
					Maximum Instantaneous Flow rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)
1. G3-00027C	Mabton	Mar. 3, 1971	Well No. 2, S02 and Well No. 3, S03	Primary	1,400	280	0	0	0	0
2. G3-00381C	Mabton	June 2, 1971	Well (no source No.)	Non-additive	15	2	0	0	0	0
3. G4-29212C	Mabton	Feb. 24, 1987	Well #4, Well #5, S05 Wellfield (WWF S01, S04)	Primary(3)	1,000	452.4(2)	700	408	+300	+44.4
Claims										
NA										
Total					**1,000 (1)**	**452.4 (2)**				
2012 (Existing)					1,000	452.4	700	408	+300	+44.4
2018 (6-year)					1,000	452.4	1,000	431	+0	+21.4
2032 (20-year)					1,000	452.4	1,000	496	+0	-43.6

Intertie Name/Identifier	Name of Purveyor Providing Water	Existing Limits on Intertie Water Use		Proj. Production/Withdrawal with New Project On-line		Current Intertie Supply Status (Excess/Deficiency)	
		Maximum Instantaneous Flow rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)
NA	NA	NA	NA	NA	NA	NA	NA

(1) CG4-29212C limits Qi to 1,000 gpm.

(2) 280 acre-feet are supplemental to Ground Water Certificate No. G3-00027C.

CHAPTER 5

SOURCE WELL PROTECTION

CHAPTER 5

SOURCE WATER PROTECTION

GENERAL

The City is providing an update to its previously completed Wellhead Protection Plan, May 2005 in this Plan. Included for this purpose, the following are provided in Chapter 10 (Appendix H):

- Update of the listing of potential contaminant sources
- Contact letter to potential contamination source owners

Chapter 5 includes updated mapping of wellhead travel-time circle and potential contaminant sources (Figure 5-1).

OBJECTIVE

Water from underground aquifers, commonly referred to as groundwater, forms the primary source of drinking water for approximately 65 percent of Washington State residents. The City of Mabton relies on wells to meet its water supply needs. To protect groundwater supplies, the Environmental Protection Agency (EPA) and Washington Department of Health (DOH) require public water utilities to develop a wellhead protection program as a component of its water system plan. The purpose of a wellhead protection program is to provide water systems with a proactive program for preventing groundwater contamination. The minimum requirements for a wellhead protection plan are specified in WAC 246-290-135(3).

WELLHEAD PROTECTION AREA DELINEATIONS

In developing a wellhead protection program, a first step is to establish the land areas around each well from which groundwater may flow to the well. These areas are likely to contribute pollutants to the groundwater and are referred to as “zones of contribution”. The time-of-travel for a given zone is determined by estimating the distance in feet of a hypothetical particle of water traveling through the aquifer to a pumping well over a selected period of time. Zones of contribution require proper land use management to minimize the possibility of contaminants entering the groundwater system. The most commonly accepted tools for delineating wellhead protection zones include the calculated fixed radius method, analytical models, and numerical models.

The calculated fixed radius method was used to analyze the wellhead protection area zones of contribution. Based on WAC 246-290-135 and through the use of the DOH susceptibility analysis techniques, wellhead protection areas are estimated for six-month,

1-year, 5-year, and 10-year periods. The delineations of the City's zones of contribution are shown on Figure 5-1.

POTENTIAL CONTAMINANT SOURCES

Within a wellhead protection zone, there are many diverse activities that may contaminate an aquifer and potentially prevent its use as a viable drinking water source. It is important that these activities are properly inventoried and, if necessary, regulated to prevent degradation of groundwater quality. Relevant activities and sources at a minimum include land use practices, industrial and commercial operations, underground storage tanks, hazardous materials storage and use, septic tanks, and dry wells. These activities are potential sources for groundwater contamination. A discussion of these practices and their potential affects on groundwater, and the regulatory requirements that may apply are included in the sections that follow. However, the first step in identifying potential contaminant sources is to develop an inventory of businesses and industries that handle hazardous products.

INVENTORY OF POTENTIAL CONTAMINANT SOURCES

An essential element of wellhead protection is an inventory of all potential sources of groundwater contamination in and around the delineated wellhead protection areas. The purpose of the inventory is to identify past, present, and proposed activities that may pose a threat to a water supply source.

Other purposes for maintaining an inventory of potential contaminant sources are to assist in the development of plan management strategies, to establish a mailing list for notifying potential contaminant sources within the wellhead protection areas, and to notify agencies regarding inventory findings. An accurate inventory and description of hazardous material handlers is required in WAC 246-290-135.

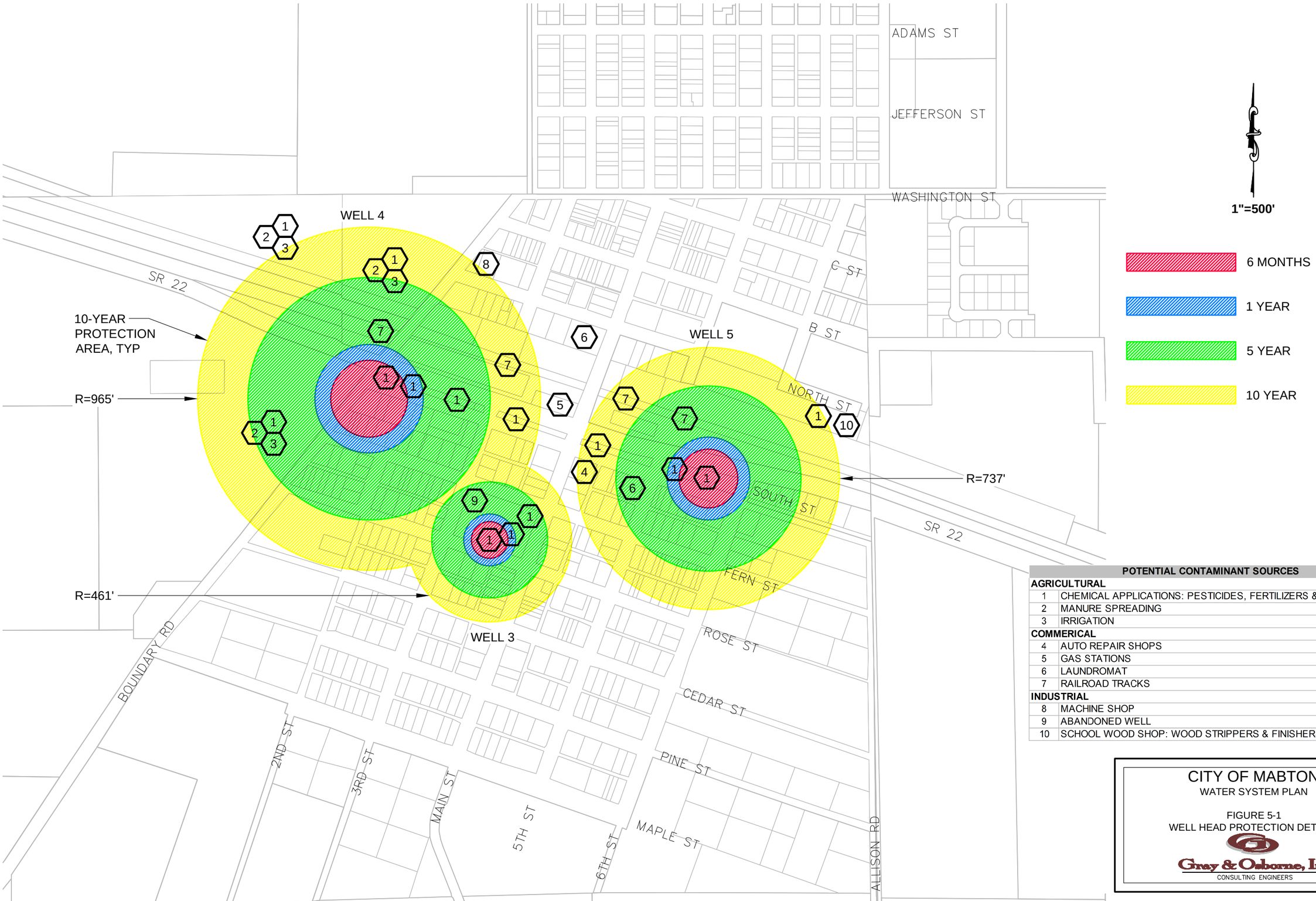
Appendix H includes a list of residences and businesses located within the wellhead protection areas (WPA) for all sources within the City's service area. This information identifies potential contaminant sources.

NOTIFICATIONS

Minimum requirements for notification of wellhead protection areas are issued to owners and operators of potential sources of contamination, to regulatory agencies and local governments, and to local emergency incident responders.

Notices to Owners of Potential Sources of Contamination

A standard letter (included in Appendix H) has been sent to all land or business owners identified on the list of potential contaminant sources. The standard letter states that their property is in the wellhead protection area, and states that the activities of their business



POTENTIAL CONTAMINANT SOURCES	
AGRICULTURAL	
1	CHEMICAL APPLICATIONS: PESTICIDES, FERTILIZERS & FUNGICIDES
2	MANURE SPREADING
3	IRRIGATION
COMMERICAL	
4	AUTO REPAIR SHOPS
5	GAS STATIONS
6	LAUNDROMAT
7	RAILROAD TRACKS
INDUSTRIAL	
8	MACHINE SHOP
9	ABANDONED WELL
10	SCHOOL WOOD SHOP: WOOD STRIPPERS & FINISHERS

CITY OF MABTON

WATER SYSTEM PLAN

FIGURE 5-1
WELL HEAD PROTECTION DETAILS

Gray & Osborne, Inc.
CONSULTING ENGINEERS

M: \MABTON\11064 WSP\FIGURES\FIGURE 5-1

may be a potential source for ground water contamination. Residents within the WPAs have been notified through public service messages of their potential impact upon the City's drinking water supply. Landowners with on-site septic systems should be notified that, when operated properly, septic systems would not be a significant threat to the City's wells. However, the dumping of chemicals into septic systems, on to the ground, or into storm drains in the wellhead protection area could contaminate the City's water supply and that enforcement action may be taken.

NOTIFICATION TO REGULATORY AGENCIES AND LOCAL GOVERNMENTS

Under WAC 246-290-135, it is required that notification is provided to regulatory agencies and local government of the WPAs and an inventory of potential sources of contamination in the area be identified. The regulatory agencies and local government office that must receive the notification are listed as follows:

Washington State Department of Ecology
Eastern Region Office
N. 4601 Monroe
Spokane, WA 98205-1295
Phone: (509) 329-3400

Washington State Department of Health
Division of Drinking Water
Eastern Regional Office
Contact: Russell Mau, P.E.
Riverview Corporate Center
16201 East Indiana Avenue, Suite 1500
Spokane Valley, Washington 99216
Phone: (509) 329-2116

Washington State Department of Health
Wellhead Protection Program, Headquarters
243 Israel Rd. SE
Tumwater, WA 98501
P.O. Box 47823
Olympia, WA 98504-7822
Phone: (360) 236-3114

Yakima County Health District
1210 Ahtanum Ridge Drive
Union Gap, WA 98903
Phone: (509) 575-4040

U.S. Environmental Protection Agency
Attn: Ground Water Unit
1200 Sixth Avenue
Seattle, WA 98101
(206) 553-6708

The City has sent notification to regulatory agencies and local governments of the boundaries of the WHPs and the finding of the WHPS inventory.

NOTIFICATION TO LOCAL EMERGENCY INCIDENT RESPONDERS:

It is required by regulation that documentation of coordination with incident responders be provided. The following incident responders have been contacted and provided with information regarding the City's WPAs:

Mabton Police Department
305 Main Street
Mabton, WA 98935
Emergency: 911
Non-emergency: (509) 894-4096

Mabton Fire Department
315 North Street
Mabton, WA 98935
(509) 894-4777

Yakima County Sheriff's Office
1822 S 1st Street
Yakima, WA 98907
Emergency: 911
Business: (509) 574-2500

Fire Protection Bureau
Washington State Patrol
PO Box 42600
Olympia, WA 98504-2600
Emergency: 911
Business: (360) 596-3902

Yakima County Public Services
128 North 2nd Street
Yakima, WA 98901
Business: (509) 574-2300

Emergency Response, Washington
State Department of Transportation
Doug Pierce
Transportation Bldg.
47358, Olympia 98504-7358
Emergency: 911
Business: (360) 705-7812

Yakima County Health District
1210 Ahtanum Ridge Drive
Union Gap, WA 98903
Phone: (509) 575-4040

Spill Response Program
Washington State Department of Ecology
Will Strand
Central Regional Office
15 West Yakima Avenue, Suite 200
Yakima, WA 98901
(509) 575-2806

Washington State Department of Health
Division of Drinking Water
Eastern Regional Office
Contact: Russell Mau, P.E.
Riverview Corporate Center
16201 East Indiana Avenue, Suite 1500
Spokane Valley, Washington 99216
Phone: (509) 329-2116

CHAPTER 6

OPERATION AND MAINTENANCE

CHAPTER 6

OPERATION AND MAINTENANCE

In its 1997 Planning Handbook, the Department of Health identifies several elements that are important in a properly managed operation and maintenance (O&M) program. A list of these elements and where they are discussed or presented in this Plan is provided in Table 6-1.

TABLE 6-1

Operation & Maintenance Program Elements

Operation and Maintenance Component	Location in Plan
Water System Management and Personnel	Chapter 1
Operator Certification	Chapter 6
Routine Operating Procedures	Chapter 6
Coliform Monitoring Plan	Appendix F
Emergency Response Plan	Appendix K
Safety Procedures	Chapter 6
Cross-Connection Control	Appendix L
Customer Complaint Response Program	Chapter 6
Record keeping and Reporting	Chapter 6
O&M improvements	Chapter 6

SYSTEM PERSONNEL

The City's water system personnel are listed below. The City's daytime phone number is (509) 894-4096. A comprehensive list of emergency phone numbers is provided in Appendix K.

TABLE 6-2

Water System Personnel

Name	Title	Certification	Phone
Chris Morris	Public Works Lead	Temporary	(509) 439-4077 (Cell) (509) 894-4096 (City Hall)
Myra Hartley	Waste Water Plant Operator	WDM2	(509) 439-4103 (Cell)
Noe Trujillo	Public Works Employee, On Call for Water System	N/A	(509) 439-4230 (Cell) (509) 894-4096 (City Hall)

Note that while the certification level required for the water system operator is actually Water Distribution Manager 2 (WDM2) for the City of Mabton, the City has been working toward the goal of either training an existing employee for this role or hiring from outside a suitably qualified employee. Mr. Chris Morris has a temporary certification to operate the water system. Myra Hartley, the Waste Water Plant Operator has the WDM2 certification.

OPERATION AND MAINTENANCE PROGRAM

Tables 6-3 through 6-5 provide general information on the City's operation and maintenance program. Table 6-3 summarizes the City's principal operating and preventive maintenance activities and their frequency. Photos of the City's facilities are provided at the end of this chapter.

TABLE 6-3

Operation and Maintenance Practices

Activity	Frequency
Well inspection	5 days / wk
Record well production and reservoir data	Flow meter/weekly/manually Reservoir on chart recorder
Collect water samples for coliform testing	Monthly (two samples)
Read service meters	Monthly, except when snow covered
Clean/inspect booster pumping station screen	Every 6 months
Flush fire hydrants and blowoffs	Annually
Exercise valves	Annually
Inspect reservoir screen and hatch	Annually
Perform preventive maintenance on control valves	As Needed
Test/Replace service meters > 2-inches	As needed
Test/Replace service meters < 2-inches	Every 10 years
Test/Replace production meters	As Needed
Inspect and clean reservoir	As Needed
Pull and inspect well pumps & motors	As Needed

Table 6-4 summarizes the normal settings, positions and readings used for the City's water reservoir.

TABLE 6-4

Normal Reservoir Settings (800,000 gal. Reservoir)

Item	Elev. (ft, msl)	Elev. in Reservoir[(1)] (ft)	Setting
Reservoir	723 (+/-)	112 (+/-)	Overflow
	NA	NA	High Level Alarm
	811 (+/-)	88 (+/-)	Lead Well Off
	811 (+/-)	88 (+/-)	Lag Well Off
	806 (+/-)	83 (+/-)	Lead Well On
	806 (+/-)	83 (+/-)	Lag Well On

(1) Usually multiple wells would be arranged in a lead-lag type operation, however the City understands that the current setting for the wells is that both Well No. 4 and Well No. 5 turn on at the same reservoir level.

The reservoir's pressure transmitter is set at 5-feet above the floor of the reservoir.

Table 6-5 provides a list of the typical water system supplies used by the City, and the current suppliers for these materials.

TABLE 6-5

Supplies and Suppliers

Supply	Supplier	Phone
PVC Pipe	H.D. Fowler, Yakima	(877) 562-2100
Gate valves		
Fire hydrants		
Service meters & setters		
Meter boxes		
Repair bands		
Dresser couplings		
Miscellaneous pipe fittings		
Electrical	Stoneway Electric Supply, Yakima	(509)-469-6154

RECORD KEEPING

The City keeps the following water system records and data.

TABLE 6-6

Record Keeping Practices

Record Type	Comment
Source meter readings	Weekly readings kept indefinitely
Maximum Day Demand	Not available
Peak Hour Demand	Not available
Service meter readings	Records kept indefinitely
Unbilled authorized consumption	Not currently tracked
Bacteriological test results	Records kept 5 years
DOH correspondence, incl. sanitary surveys	Records kept indefinitely
Legal documents	Records kept indefinitely
Backflow Device Inspection Notices	Records kept 5 years
Backflow Violation Case Files	Records kept 5 years
Water Availability Request Forms	Records kept 2 years

The City is attempting to keep water system mapping, including the location of pipelines, hydrants, and valves up to date based on the best information available. In recent years, there has been a significant loss of institutional knowledge of the water system and the City has been working on redeveloping this information and the documentation of existing facilities.

COMPLAINT RESPONSE

The City maintains customer complaint records to verify trends that may help the City improve service to its customers. Response to questions and complaints is typically verbal, either through a field visit or a telephone call. However, depending on the nature of the question or complaint, written response can also be given. Bimonthly City Council meetings, scheduled on the second and fourth Tuesdays of the month, are the main venue for public involvement in the water system.

SAFETY PROCEDURES

All appropriate Occupational Safety and Health Administration (OSHA) and Washington Industrial Safety and Health Administration (WISHA) regulations are routinely followed during operation of the system. Operation and maintenance staff is trained in safety practices including confined space, first aid, and fall restraint. The City maintains fall equipment for inspecting reservoir hatches and screens, and confined space equipment for underground vaults.

SANITARY SURVEY FINDINGS

The City's last DOH sanitary survey was conducted on January 12, 2010. No significant deficiencies were noted, and all have been corrected. A copy of the DOH letter is provided in Appendix M.

DEFICIENCIES

The City has identified the several O&M deficiencies and plans to take action to correct them. These projects are summarized in Table 6-7 below and are discussed further in Chapter 8.

TABLE 6-7

Operation and Maintenance Improvements

Deficiency	Action
The City's Well No. 5 check valve was found to be leaking.	Repair.
Source meters need to be periodically repaired, rebuilt and/or calibrated.	Repair, rebuild, replace and/or calibrate as needed.
Several 1-inch and smaller meters have been failing and several are difficult to read due to fading or the crystal has been smashed.	Replace as necessary.
2-inch meters are often inaccurate.	Commit to a program to replace every 5 years.
Valves are aging and the majority of which do not function properly. It is difficult to isolate a portion of the water system without functioning valves.	Replace valves as necessary.
Hydrants are aging and some do not function adequately.	Replace hydrants as necessary.
Much of the City's water mains consist of aging cast iron and AC pipe, more than half of which is 4-inch diameter and smaller, with much of the remainder aging and in need of replacement.	Replace as funding permits.
Per the WSDM 5.7.1 Water System Reliability Recommendations, an alarm system should be included that "notifies the operator(s) of overflows, or when the storage level drops below the point where the equalizing storage volume is depleted. This should only occur during abnormal operating conditions."	Install as upgrades are performed and as funding permits.

PHOTOS

	
500 gpm Well No. 5 Well House	Well No. 5 – Motor and Piping
	
200 gpm Well No. 4 Well House	Well No. 4 – Motor and Piping
	
800,000 gal. Welded Steel Reservoir	BPS

	
BPB Fire Pump and Bypass	BPS Building

CHAPTER 7

CONSTRUCTION STANDARDS

CHAPTER 7

CONSTRUCTION STANDARDS

In 2004, the City adopted Construction Specifications for its water utility. A copy of these documents is provided in Appendix N. The City requests that DOH review and approve these documents. Such approval would allow the City to construct distribution mains without the requirement to submit project reports (WAC 246-290-110) and construction documents (WAC 246-290-020) to DOH.

The City has under contract a Professional Engineer (Gray & Osborne, Inc.), licensed in the State of Washington. The City's engineer will design and/or review any plans for distribution mains to be constructed in the City. If a developer proposes to construct a water main extension within the City, the developer would be required to submit engineering plans and specifications for review and approval by the City's engineer per Mabton Municipal Code 13.04.560.

The City will maintain a file with copies of the construction completion reports from any project completed under the DOH project submittal review waiver.

CHAPTER 8

CAPITAL IMPROVEMENT PROGRAM

CHAPTER 8

CAPITAL IMPROVEMENT PROGRAM

Several water system deficiencies are identified in Chapter 3. A brief description of the improvements required to address these deficiencies is presented in the following sections. A map showing the location of each project is presented on Figure 8-1. Detailed cost estimates are provided in Appendix O. A schedule for implementing these improvements is provided in Table 8-1. Financing for improvements planned during the next six years is discussed in Chapter 9.

SOURCE IMPROVEMENTS

The City's source capacity is not adequate to meet its current, 6- and 20-year needs. Well No. 4 is currently being repaired, and is now anticipated to produce in the range of 200 to 250 gpm, much lower than the original 1,000 gpm. The City will have the flow meter for this well either repaired or replaced once this well has been repaired. This flow meter will allow the City to more accurately determine the City's source capacity and the City's water use.

Whether or not the City's annual water rights are adequate to meet its 20-year needs will depend upon water use reductions in the water system DSL (Distribution System Leakage) and increases in the City's water use efficiency. With the current DSL estimated to be 38 percent of production (see Chapter 2, Water Use), the City's annual withdrawal right is estimated to be exceeded by 2032. Thus, if the DSL were reduced to 10 percent or less (as recommended by DOH), the City's annual withdrawal in 2032 may fall within their annual withdrawal water right. Another possibility is for the City to acquire additional water rights.

The City plans to discuss this issue with DOH (and Ecology, if necessary) and determine what the next steps are. This plan can be amended to address any significant engineering studies or construction projects that the agencies determine may be needed.

As mentioned previously, the source meter and level sensor at Well No. 4 is not functioning properly, therefore this well's production (and therefore the City's total production) has not been accurately measured. The City plans to either replace this malfunctioning meter and level sensor or have them repaired and in operation in 2013.

Currently the City has no emergency backup power to power the wells or the booster pumping station. The City anticipates installing an emergency generator to power the new Well No. 6 in case of an extended power outage.

STORAGE

After the City constructs a new 1,000 gpm well (Well No. 6), the existing storage is adequate for the 20-year planning period.

The City anticipates having the reservoir cleaned out.

The City would like to eliminate the need for the continuously running booster station due to the costs of the power to run these boosters. By either constructing a new, higher reservoir, or by increasing the height of the existing reservoir, the booster station (except for the fire-flow booster) can be eliminated. The City plans to construct a new 1,000,000 gallon reservoir or to increase the height of the existing reservoir if this is found to be possible.

TREATMENT

No treatment improvements are planned for the 20-year planning period.

TELEMETRY

No major telemetry improvements are planned for the 20-year planning period.

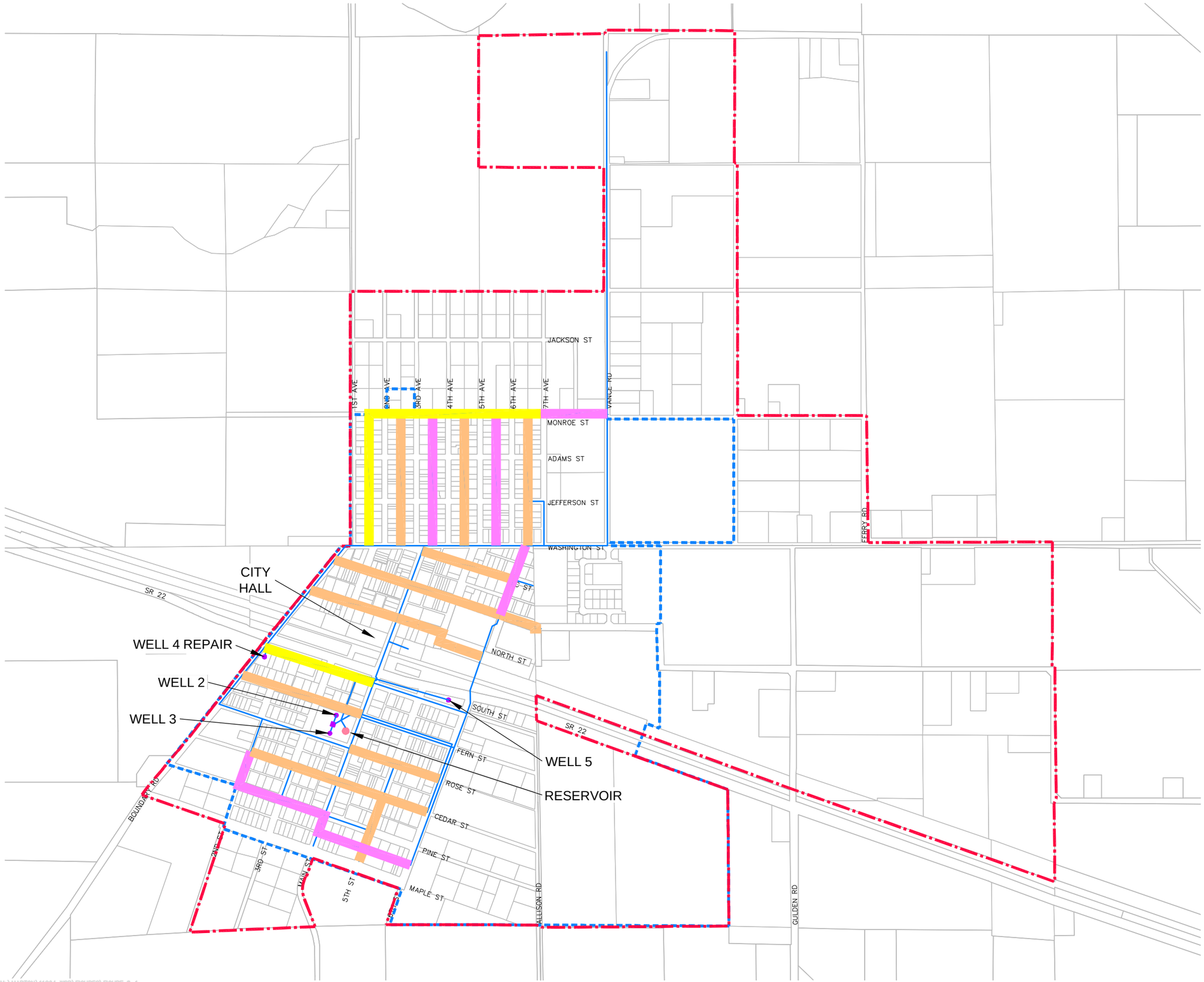
DISTRIBUTION SYSTEM

The City's distribution system contains many 4-inch and 6-inch lines that are inadequate to support the fire flows required by the City's fire chief. The 6-year improvements are summarized in Table 8-1. The 6- and 20- year water main improvements have been categorized into three priority groups, Category A, B and C. Figure 8-2 shows the location of each proposed improvements.

As previously shown in Table 1-6, approximately 76% of the distribution piping is CI pipe, which was installed in the 1930s and may be approaching the end of its useful life. Also notable is that roughly half of the City's piping is just 4-inches in diameter, leading to significant pressure losses during fire-flow conditions. It is the City's desire to begin replacing the CI pipe which is now over 70 years in age. In 2012, the City applied for PWTF funding for three projects in order to begin the process of gradually replacing and upsizing water mains. Since the funding for the PWTF was cut, the City will be seeking funding for these projects with a DWSRF loan.

The City's leak detection study indicates that there is a sizable leak in a 2-inch diameter PVC pipe on 3rd Avenue. The City is planning to repair this leak in early Spring of 2013.

The following water main improvements are included in the 20-year capital improvement plan. Each of these projects replaces old and undersized water mains, improving fire flows and reducing leakage from old pipes while reducing maintenance and repairs. They have been categorized into Priority A, B and Priority C. Also indicated are an approximate number of water services that would likely be upgraded with the project.



1"=1000'

- CITY LIMITS
- URBAN GROWTH AREA
- EXISTING WATER MAIN
- CATEGORY A 6-YEAR CAPITAL IMPROVEMENTS
- CATEGORY B 20-YEAR CAPITAL IMPROVEMENTS
- CATEGORY C 20-YEAR CAPITAL IMPROVEMENTS

NOTES:

1. **NOT ALL CAPITAL IMPROVEMENTS ARE SHOWN ON THIS FIGURE.**
2. **ALL WATER MAIN IMPROVEMENTS WILL BE 8-INCH C900 PVC**

CITY OF MABTON
WATER SYSTEM PLAN

FIGURE 8-1
CAPITAL IMPROVEMENTS

Gray & Osborne, Inc.
CONSULTING ENGINEERS

I:\MABTON\11084 WSP\FIGURES\FIGURE 8-1

TABLE 8-1

Fire Flow and DSL Improvements

No.	Water Main Location	Improvement	Length (ft)	Services (count)	Estimate
6-Year Capital Improvements, (Category A)				**Subtotal:**	**$900,000**
1.	South Street, Reservation St. to the Alley 170 ft. West of Main St.	Upsize 4" CI to 8" PVC Water Main	1,050	8	$240,000
2.	Monroe Street, from Seventh Ave to Alley East of First Ave.	Upsize 4" CI to 8" PVC Water Main	1,850	20	$390,000
3.	Alley East of First Ave, from Washington St. to Monroe St.	Upsize 4" CI to 8" PVC Water Main	1,400	36	$270,000
20-Year Capital Improvements, (Category B)				**Subtotal:**	**$1,410,000**
4	Alley East Of 3rd Ave. From Washington St. To Monroe St.	Upsize 4" CI to 8" PVC Water Main	1,400	36	$260,000
5	Alley East Of 5th Ave. From Washington St. To Monroe St.	Upsize 4" CI to 8" PVC Water Main	1,400	36	$260,000
6	Monroe St. From 7th Ave. To Vance Rd.	Upsize 4" CI to 8" PVC Water Main	700	2	$160,000
7	N. 6th St. From B St. To Washington St.	Upsize 4" CI to 8" PVC Water Main	800	8	$190,000
8	In Alley North Of Maple St. From 6th St. To Main St. (1)	Upsize 4" CI to 8" PVC Water Main	1,200	16	$220,000
9	Pine St. From Main St. To 2nd St. (2)	Upsize 4" CI to 8" PVC Water Main	1,400	26	$320,000
20-Year Capital Improvements, (Category C)				**Subtotal:**	**$2,920,000**
10	Alley East Of 2nd Ave. From Washington St. To Monroe St.	Upsize 4" CI to 8" PVC Water Main	1,400	36	$260,000
11	Alley East Of 4th Ave. From Washington St. To Monroe St.	Upsize 4" CI to 8" PVC Water Main	1,400	36	$260,000
12	Alley East Of 6th Ave. From Washington St. To Monroe St.	Upsize 4" CI to 8" PVC Water Main	1,400	36	$260,000
13	C St. From 6th Ave. To Main St.	Upsize 4" CI to 8" PVC Water Main	1,000	10	$220,000
14	B St. From Allison St. To Boundary Rd.	Upsize 4", 6" CI to 8" PVC Water Main	2,100	22	$450,000
15	North St. From 6th Ave. To Boundary Rd.	Upsize 4", 6" CI to 8" PVC Water Main	1,800	12	$360,000
16	Fern St. From Main St. To Boundary Rd.	Upsize 4" CI to 8" PVC Water Main	1,300	24	$290,000
17	Rose St. From 6th Ave. To Main St.	Upsize 4" CI to 8" PVC Water Main	1,000	18	$230,000
18	Cedar St. From 6th Ave. To 2nd St.	Upsize 4" CI to 8" PVC Water Main	1,900	40	$420,000
19	5th St. From Maple St. To Cedar St.	Upsize 4" CI to 8" PVC Water Main	700	8	$170,000
				Total:	**$5,230,000**

(1) Includes from Alley to Pine St. (200 ft.).
(2) Includes from Pine St. to Cedar St. (400 ft.).

BOOSTER PUMPING STATION

No Booster Pumping Station (BPS) improvements are planned for the 20-year planning period. The need for the BPS will be eliminated when the new reservoir is constructed (except for the fire-flow booster pump).

OPERATION AND MAINTENANCE

The City has identified several O&M projects for the next six years. These projects are also discussed in Chapter 6.

- Source Meter Repair/Replacement. The City has plans to repair/replace its source meter for Well No. 4. This meter has not been functioning properly requiring repair and/or replacement.
- Valves. The City plans to begin a program to add or replace valves throughout the City's system. Currently, the majority of the valves do not close, preventing the isolation of water mains for flushing or in the case of a water main break.
    - The 2012 leak detection study also indicated that there is a significant leak in the Well No. 5. discharge pipe check valve. The City plans to repair this leaky valve in early 2013. Costs for this repair are expected to be minimal.
- Service Meters. The water used at the City's parks is not yet metered. The City plans to place service meters for all parks for all uses (including irrigation) at the parks.
    - The City has the four meters required to meter Governor's Park and anticipates installing these meters early in the Spring of 2013. Costs for this installation are expected to be minimal.
    - The meter for Fezell Park has not yet been purchased, but once these funds become available, the City intends to meter this park as well.
    - The Water Department has budgeted to purchase 20 meters per year, and has prioritized the following :
        - Dead meters.
        - Incorrectly reading meters.
        - Difficult to read meters.
        - Reservoir Cleaning. There are no records of when the City's 800,000 gal. reservoir was last cleaned, and the reservoir is due for a cleaning.
        - Hydrant Replacements. The City has several hydrants that are no longer operable and will begin an annual program to replace them.

SCHEDULE

A schedule for the City's planned capital improvements is provided in Table 8-2. Planning level cost estimates are provided in Appendix O.

TABLE 8-2

Capital Improvement Plan [(1)]

	Project	2013 Cost [(1)]	2013	2014	2015	2016	2017	2018	'19-'32
SOURCE									
1.	Well No. 4 Repair	$130,000	X						
2.	Well No. 6 (New Well)	$1,800,000		X					
WATER RIGHTS									
3.	Water Rights	$700,000		X					
STORAGE									
4.	New Reservoir	$1,300,000		X					
TREATMENT									
-	No Improvements	-							
TELEMETRY									
-	No Improvements	-							
DISTRIBUTION									
5.	South St., Reservation St. to the Alley	$240,000		X					
6.	Monroe St., Alley to 7th Ave.	$390,000		X					
7.	Alley East of 1st Ave.	$270,000		X					
8.	Alley East Of 3rd Ave.	$260,000							X
9.	Alley East Of 5th Ave.	$260,000							X
10.	Monroe St. 7th Ave., To Vance Rd.	$160,000							X
11.	N. 6th St.	$190,000							X
12.	Alley North Of Maple St.	$220,000							X
13.	Pine St.	$320,000							X
14.	Alley East Of 2nd Ave.	$260,000							X
15.	Alley East Of 4th Ave.	$260,000							X
16.	Alley East Of 6th Ave.	$260,000							X
17.	C St.	$220,000							X
18.	B St.	$450,000							X
19.	North St.	$360,000							X
20.	Fern St.	$290,000							X
21.	Rose St.	$230,000							X
22.	Cedar St.	$420,000							X
23.	5th St.	$170,000							X
BOOSTER STATION									
-	No Improvements	-							
OPERATION & MAINTENANCE									
24.	Source Meter Repair	$10,000	X						
25.	Distribution System Valves	$25,000/yr.	X	X	X	X	X	X	
26.	Service Meters	$3,000/yr.	X	X	X	X	X	X	
27.	Reservoir Cleaning	$5,000	X						
28.	Hydrant Replacements	$4,000/yr	X	X	X	X	X	X	X
29.	Water System Plan	$55,000							X

(1) Engineering News Record (ENR) National Construction Cost Index January, 2013 = 9437.

CHAPTER 9

CAPITAL IMPROVEMENT FINANCING

CHAPTER 9

CAPITAL IMPROVEMENT FINANCING

EXISTING RATES AND CHARGES

Mabton's water rates are established by ordinance. Meters are read on a monthly basis and customers are billed according to the rate schedule summarized in Table 9-1. As indicated, the City charges a base rate that includes the first 536 cubic feet (cf) of usage for 1½ inch and smaller meters, and 938 cf of usage for meters 2-inches and greater in size. Each 134 cf (approximately 1,000 gal.) of usage above these amounts is assessed a volume charge as shown in the table. The volume charge has two levels and is therefore considered to be an inclining block structured rate, which helps to encourage water conservation.

TABLE 9-1

2012 Water Service Rates [(1)]

Classification	Monthly Base Rate	Senior Monthly Base Rate	Volume Charge (per 134 cf)	Volume w/ Base (cf)
3/4 " or smaller	$26.35	$18.35	(included)	First 536
			$1.24	Next 402
			$1.28	Over 938
1"	$27.59	$19.59	(included)	First 536
			$1.24	Next 402
			$1.28	Over 938
1¼ " to 1½"	$34.11	$26.11	(included)	First 536
			$1.24	Next 402
			$1.28	Over 938
2"	36.21	28.21	(included)	First 938
			$0.98	Next 4,020
			$1.08	Over 4,958
3"	59.29	51.29	(included)	First 938
			$0.98	Next 4,020
			$1.08	Over 4,958
4"	$99.26	$91.26	(included)	First 938
			$0.98	Next 4,020
			$1.08	Over 4,958
6"	$192.51	$184.51	(included)	First 938
			$0.98	Next 4,020
			$1.08	Over 4,958

Source: City of Mabton Ordinance 977, January 24, 2012.

Connection charges are also defined by ordinance. A connection to the City's distribution system for meters 2 inches and smaller in size requires a payment to the City of the cost of labor and materials plus 10 percent. For larger meters, the costs are determined by the clerk-treasurer. The City also charges new customers a "water system connection fee" of $300. The property owner bears all expenses for the construction of the water service from the water main to the building.

HISTORICAL FINANCIAL STATUS

Revenues and expenditures between 2009 and 2011 for the City's water utility are shown in Table 9-2. Like many Washington cities, Mabton combines its water and sewer systems into a single combined utility.

Table 9-2 has been summarized to show only those revenue and expenditure line items associated with the domestic water system. The City assigns most water system revenue and expenditure categories their own line items. For the few instances where water revenues and costs are combined with those of the sewer utility (see footnotes), the City estimates that these amounts should be split equally between water and sewer.

TABLE 9-2

Water Utility Historical Revenue and Expenditures

REVENUES	**2009**	**2010**	**2011**
Water Sales	288,430	291,821	284,917
Connection Charges	3,346	2,709	0
Late Fees/On/Off Charges(1)	10,490	10,558	10,378
Interest & Other Earnings(1)	1,462	306	155
Water/Sewer Utility Tax(1)	69,352	49,883	54,259
Total Revenues	**373,080**	**355,277**	**349,709**
EXPENDITURES			
Salaries, Wages & Benefits	99,614	75,624	109,541
Supplies	25,718	15,256	22,804
Utilities	43,621	44,694	49,155
Repairs, Maintenance, Fuel, Insurance	13,801	12,759	27,348
Miscellaneous	25,546	22,763	24,622
Prof. Serv., Other Services and Charges	16,174	14,285	19,303
Utility Taxes(1)	70,892	45,513	54,258
Well Project, Principal & Interest	19,790	0	0
1989 Bond, Principal & Interest	14,500	10,728	11,622
Total Expenditures	**326,778**	**241,622**	**318,653**
Revenues minus Expenditures	**46,302**	**113,655**	**31,056**
Beginning Water Balance(1)	111,511	172,707	286,362
Ending Water Balance(1,2)	172,707	286,362	317,418

(1) Because Mabton operates a combined water-sewer utility, these items were combined with the sewer utility in the City's annual reports. The City estimates that the water utility portion of these items was 50%.

(2) Actual value from average of combined utility.

The following items are worth noting:

- Operation Salaries and Benefits have varied somewhat because of changes in personnel and shifting duties of some employees to/from water and sewer.

- As indicated, it was necessary to estimate the 2009 Beginning Cash balance as half the combined balance for the combined Water/Sewer Fund. The fact that the balance has increased each year indicates the water portion of the combined fund has remained financially viable during these years.

SIX-YEAR FINANCING PLAN

Table 9-3 summarizes the City's projected 6-year financing plan.

TABLE 9-3

Six-Year Financing Plan

REVENUES	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Water Sales	285,000	285,000	285,000	285,000	285,000	285,000	285,000
Connection Charges	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Late Fees/On/Off Charges[(1)]	10,800	10,800	10,800	10,800	10,800	10,800	10,800
Interest & Other Earnings[(1)]	700	700	700	700	700	700	700
Water/Sewer Utility Tax[(1)]	57,000	57,000	92,420	94,300	96,260	98,340	100,500
Revenues From Increase Rates[(2)]		0	177,100	186,500	196,300	206,700	217,500
Total Revenues	355,600	355,600	568,120	579,400	591,160	603,640	616,600
Loan Revenues			4,900,000				
Total Revenues	**355,600**	**355,600**	**5,468,120**	**579,400**	**591,160**	**603,640**	**616,600**
EXPENSES							
Salaries, Wages & Benefits	97,800	100,700	103,700	106,800	110,000	113,300	116,700
Supplies	21,900	22,600	23,300	24,000	24,700	25,400	26,200
Utilities	47,200	48,600	50,100	51,600	53,100	54,700	56,300
Booster Station Power Savings[(3)]				(22,000)	(23,000)	(24,000)	(26,000)
Repairs, Maint., Fuel, Insurance	18,500	19,100	19,700	20,300	20,900	21,500	22,100
Miscellaneous	25,000	25,800	26,600	27,400	28,200	29,000	29,900
Prof. Serv., Other Services,	17,100	17,600	18,100	18,600	19,200	19,800	20,400
Utility Taxes	57,000	57,000	92,420	94,300	96,260	98,340	100,500
O&M Expenditures							
Source Meter Repair		1,000					
Distribution System Valves		25,000	25,000	25,000	25,000	25,000	25,000
Service Meters		3,000	3,000	3,000	3,000	3,000	3,000
Reservoir Cleaning		5,000					
Hydrant Replacement		4,000	4,000	4,000	4,000	4,000	4,000
CAPITAL IMPROVEMENTS (DEBT FINANCED)							
Well No. 4 Repair[(4)]		130,000					
Well No. 6			1,910,000				
Water Mains[(5)]			930,000				
Reservoir			1,340,000				
Water Rights	-	-	720,000	-	-	-	-
DEBT SERVICE							
1989 Bond, Princ. & Int.	11,300	11,300	11,300	11,300	0	0	0
New Loans, Princ. & Int.[(6)]				203,500	203,500	203,500	203,500
Loan Reserve Fund				20,350	20,350	20,350	20,350
Total Expenditures	**295,800**	**470,700**	**5,277,220**	**588,150**	**585,210**	**593,890**	**601,950**
Revenues minus Expenditures	**59,800**	**(115,100)**	**190,900**	**(8,750)**	**5,950**	**9,750**	**14,650**
Beginning Water Balance	317,400	377,200	262,100	453,000	444,250	450,200	459,950
Ending Water Balance	377,200	262,100	453,000	444,250	450,200	459,950	474,600

Notes for Table 9-3:

(1) 2012 est. based upon ave. of 3 prev. years plus pop. growth rate of 0% annually, with 3% inflation.
(2) Revenues from Increased Rates assumed from a monthly rate increase of $21/ ERU/month in 2014, 3% annually thereafter, 1.5% annual population growth rate.
(3) Projected booster station power costs savings if new reservoir is constructed to eliminate the continuously running booster pumps.
(4) Well No. 4 Repair assumed to be paid out of reserves.
(5) Water Mains project includes water main improvements in South St., Monroe St. and the Alley east of 1st Ave.
(6) Funding for the Well No. 6, Water Mains Project, Reservoir and Water Rights assumed to be through USDA RD with a 40 year, 2.75% loan.

Due to the recent failure of Well No. 4, the cost of the repair of this well and this reduction in production, the City is in a position where it will need to raise revenues to pay for these capital improvements. Table 9-3 indicates that with an annual increase of a one-time $21 per month increase and 3 percent annually to the base rate, assuming 1.5 percent annual growth in population, and successful applications for USDA RD loans with 40-year, 2.75% terms, the City can fund the repair of Well No. 4, new Well No.6, the three water main projects included in the Water Mains Project, the new Reservoir, purchase additional water rights and complete its planned O&M improvements.

With these increased revenues, over the 6-year planning period, the City's revenues are projected to be sufficient to enable the Water Fund's ending cash balance to remain solvent. In the twenty-year planning period, additional capital improvements will be necessary to replace the City's aging infrastructure, which may require additional rate adjustments to enable the City to take on these additional improvements beyond the 6-year planning horizon.

FUNDING SOURCES

There are several outside funding sources available to the City if the need arises for additional large projects during the planning period. The funding source(s) selected for a particular project will depend on the status of the City's financial commitments, its capital and cash flow requirements, funding source availability, and the impact on the service rates and connection charges.

The City had the Rural Community Assistance Corporation (RCAC) perform an income survey in 2011.

Grant and loan programs available through public funding agencies are summarized in Table 9-4. Following the table are brief descriptions of each program listed in the table, as well as descriptions of other financing options including revenue bonds, developer financing, general facility charges, and utility local improvement districts (ULIDs).

TABLE 9-4

Grant and Loan Programs

Agency	Program	Maximum Amount	Type	Application Cycle
Washington State Department of Health	Drinking Water State Revolving Fund	$12,000,000	Loan	March
Wash. State Dept. of Commerce	Community Development Block Grant, General Purpose	$1,000,000	Grant	January
Wash. State Dept. of Commerce	Community Development Block Grant, Planning Only	$24,000 or $35,000	Grant	Open all year as $ available
Washington State Public Works Board	Public Works Trust Fund Planning Loan (1)	(1)	(1)	(1)
Washington State Public Works Board	Public Works Trust Fund Preconstruction Loan (1)	(1)	(1)	(1)
Washington State Public Works Board	Public Works Trust Fund Construction Loan (1)	(1)	(1)	(1)
USDA Rural Development	Community Assistance Grant and Loan Program	Variable	Loan and grant	Year-round
U.S. Congress	State and Tribal Assistance Grant	Variable	Grant w/. 45% match	Year-round
Wash. State Dept. of Commerce	Community Economic Revitalization Board, Committed Private Partner Program	Variable	Loan	Year-round
Wash. State Dept. of Commerce	Community Economic Revitalization Board, Construction Program	$1 M max. possible grant	Loan & Grant	Year-round
Wash. State Dept. of Commerce	Community Economic Revitalization Board, Planning Projects	$50k max. grant, 25% match	Grant	Year-round

(1) No funding is currently available for FY 2013-2015. Terms thereafter to be determined.

DRINKING WATER STATE REVOLVING FUND

In 1997 the Washington State Department of Health began taking applications for a new loan program called the Drinking Water State Revolving Fund (DWSRF). The program was funded by Congress as part of the 1996 reauthorization of the Safe Drinking Water Act. The program provides low-interest loans to help publicly owned as well as privately owned not-for-profit and for-profit water systems make improvements to water systems for public health protection.

The program is primarily targeted toward projects that will improve public health and safety. Infrastructure improvement projects can also be considered, but are given a lower priority in the ranking. Project rankings and selection are made by the Department of Health; program financial administration is handled by the Department of Commerce.

COMMUNITY DEVELOPMENT BLOCK GRANT

The Community Development Block Grant program, administered by the Washington State Department of Commerce, consists of two programs that can be used to fund water system improvements. The first is the General Purpose Grant program, which allows applicants to request up to $1 million for design and construction of public facilities, community facilities, housing rehabilitation, or economic development projects that principal benefit low- and moderate-income persons. If total project costs exceed $10 million, the maximum grant can be increased to $1.5 million.

The second program is the Planning-Only Grant program. This program supports a range of planning activities that lead to implementation of priority projects that benefit low- and moderate-income communities. Funding levels are set at a maximum of $24,000 for most projects, although projects meeting certain priority needs may be eligible for up to $35,000. Grants are offered to qualifying applicants on a first-come, first-serve basis until the year's allocation for the program is exhausted.

PUBLIC WORKS TRUST FUND

The Public Works Trust Fund (PWTF) is a revolving loan fund designed to help local governments finance needed public works projects through low-interest loans and technical assistance. The PWTF, established in 1985 by legislative action, offers loans substantially below market rates, payable over periods typically ranging up to 20 years, and in amounts up to $5,000,000 per jurisdiction. In past years, PWTF has also offered planning loans for planning projects and preconstruction loans for engineering design. These programs have been temporarily suspended because of State budget deficits.

Interest rates on construction loans are 0.5 percent, 1 percent, or 2 percent, with the lower interest rates providing an incentive for a higher local match. A minimum of 15 percent

of project costs must be provided by the local community to qualify for a 0.5 percent loan. A 10 percent local share qualifies the applicant for a 1 percent interest rate, and a 15 percent local share qualifies for a 2 percent loan.

To be eligible for the program, an applicant must be a local government such as a City, a County, or special purpose utility district, and have a long-term plan for financing its public work needs. If the applicant is a City or a County, it must adopt the 1/4 percent real estate excise tax dedicated to capital purposes, which Mabton has done. Eligible public works systems include streets and roads, bridges, storm sewers, sanitary sewers, and domestic water. Loans were offered for purposes of repair, replacement, rehabilitation, reconstruction or improvement of existing eligible public works systems, and can be sized to meet the needs of growth.

USDA RURAL DEVELOPMENT

USDA Rural Development (RD) has a loan program that is available to communities whose rates, as a result of projected RD debt payments, are expected to exceed the rates of "similar" communities. Under certain hardship conditions, RD's funding options include a limited grant program. The loan program provides long-term 30- to 40-year loans at an interest rate currently between 1.875 and 3.125 percent. RD loans are issued as revenue bonds with a 1.1 debt coverage requirement.

STATE AND TRIBAL ASSISTANCE GRANTS

State and Tribal Assistance Grants (STAG grants) are available through the federal government by petitioning the applicant's federal Representative or Senators. There is no formal application form, although legislators often have developed their own application form to describe the project and its need. The program requires a 45 percent match, using any type of funding other than funding derived from EPA (e.g. DWSRF). Funding is approved annually as a separate appropriation in the federal budget.

COMMUNITY ECONOMIC REVITALIZATION BOARD

The Community Economic Revitalization Board (CERB) has three Core Financing Programs:

Committed Private Partner Program:

The Committed Private Partner Construction Program requires an eligible private business commitment as part of the public entity's application. The applicant and business must provide evidence that a private development or expansion is ready to occur and that the private development is contingent upon the approval of CERB funds. CERB requires that the project generate either significant job creation or significant private investment in order to be eligible for funding.

Prospective Development Construction Program:

Loans up to $1,000,000 per project, grants in unique cases. Interest rates of 3% for non-distressed and 2.5% for distressed counties. 20-year term maximum, requires 10% match. Jurisdictions in rural counties and rural communities are eligible for Prospective Development awards. The applicant must provide evidence that a private development or expansion is likely to occur as a result of the public improvements. CERB requires that the project generate either significant job creation or significant private investment in order to be eligible for funding. Applicants must demonstrate convincing evidence (based on a feasibility study) that the median hourly wage of the private sector jobs created after the project is completed will exceed the countywide median hourly wage. Applicants must also demonstrate the need for CERB assistance and that no other timely source of funds is available at a reasonably similar rate to the current CERB rate.

Planning Projects:

Grants up to $50,000 per application, requires 25% matching funds.

CERB provides limited funding for studies which evaluate high-priority economic development projects. Projects should target job growth and long-term economic prosperity and can include: site-specific plans, studies, and analyses that address environmental impacts, capital facilities, land use, permitting, feasibility, marketing, project engineering, design, site planning and project debt and revenue impacts. When considering planning applications, the Board will give priority to those projects which could ultimately result in a type of project eligible for CERB construction funds.

CERB accepts applications from public entities to finance public infrastructure and planning activities on an ongoing basis. The Board meets every two months to make funding decisions.

REVENUE BONDS

Revenue bonds are tax-free bonds issued by a utility that are repaid by revenues from monthly service charges. In order to make revenue bonds marketable to investors, the bonds typically have contractual provisions for the utility to meet debt coverage requirements. The District must show that its annual net operating income (gross income less operation and maintenance expenses) is equal to or greater than a factor, typically 1.2 to 1.4 times the annual debt service on all par debt. If a coverage factor has not been specified it will be determined at the time of any future bond issues.

DEVELOPER FINANCING

Developers typically fund the construction of extensions to the water mains to property within new plats. The developer extensions are turned over to the City for operation -and maintenance upon completion. Developer extensions must be constructed to meet the requirements of the City's construction standards.

GENERAL FACILITIES CHARGE

In order to finance improvements of general benefit to the City, a general facilities charge may be adopted. General facilities charges are usually established as one-time charges assessed at hook up against new water customers as a way to recover part or all of the cost of existing and additional facilities constructed for their use.

The general facilities charge or fee is typically deposited into a construction fund for construction of water infrastructure. The intent is that all new system customers will pay an equitable share of the cost of the system improvements needed to accommodate growth. Typical types of construction financed by the general facilities charge are general improvements that benefit the entire system, such as wells, booster pump stations, distribution mains, and office and storage space.

UTILITY LOCAL IMPROVEMENT DISTRICTS

Another potential source of funds for improvements comes through the formation of utility local improvement districts (ULIDs) involving a special assessment made against properties benefiting by the improvements. ULID bonds are further backed by a legal claim to the revenues generated by the utility, similar to revenue bonds.

Water system expansion is a frequent application of ULID financing. Typically, ULIDs are formed at the written request (by petition) of the property owners within a specific section of the service area. Upon the receipt of a sufficient number of signatures or petitions, and acceptance by the City council, the local improvement area is formed, and a water system is designed for that particular area in accordance with the City's construction standards.

Each separate property in the ULID is assessed in accordance with the special benefits the property receives from the water system improvements. A City-wide ULID could form part of a financing package for large-scale capital projects such as water line extensions or replacements that benefit all residents in the service area. The ULID assessment places a lien on the property that must be paid in full upon sale of the property. ULID participants have the option of paying their assessment immediately upon receipt, thereby reducing the portion of the costs financed by the ULID bonds.

CHAPTER 10

LIST OF APPENDICES

CHAPTER 10

LIST OF APPENDICES

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B	WELL LOGS
C	LEAK DETECTION REPORT
D	FIRE MARSHALL LETTER AND FIRE FLOW REQUIREMENTS
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I	WATER QUALITY MONITORING REPORT
J	WATER RIGHTS
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W	WELL NO. 3 DOH BLENDING INSTRUCTIONS
X	CORRESPONDENCE

APPENDIX A

PERMIT AND WATER FACILITIES INVENTORY REPORT

Washington State Department of Health

Division of Environmental Health
Office of Drinking Water

Individual System View - MABTON, CITY OF - Water System Id - 49650

Compliance Actions | Operating Permits | Operators | Reports | Water Use Efficiency

General Information | Source Information | Samples | Exceedances

Last Permit Color Issued: Green Last Permit Issued Date: 6/1/2012

Last Permit Issued Definition: Green: Systems in this category are considered adequate for existing uses and adding new service connections up to the number of approved service connections.

Current Color: Green Current Color is what the calculated permit color would be based on information as of 1/17/2013

Current Color Definition: Green: Systems in this category are considered adequate for existing uses and adding new service connections up to the number of approved service connections.

Override Comments:

Current Permit Conditions:

Links to external resources are provided as a public service and do not imply endorsement by the Washington State Department of Health

Department of Health, Office of Drinking Water

Street Address:
243 Israel Road S.E. 2nd floor
Tumwater, WA 98501

Mail:
PO BOX 47822
Olympia, WA 98504-7822

Phone: (360) 236-3100

Send inquiries about DOH and its programs to the Health Consumer Assistance Office
Comments or questions regarding this Web site? Send email to Environmental Health Application Testing and Support or call 360-236-3113.

Washington State Department of Health

WATER FACILITIES INVENTORY (WFI) FORM

ONE FORM PER SYSTEM

Quarter: 1
Updated: 10/15/2012
Printed: 9/5/2013
WFI Printed For: On-Demand
Submission Reason: Pop/Connect

RETURN TO: Eastern Regional Office, 16201 E Indiana, Suite 1500, Spokane Valley, WA, 99216

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
49650 R	MABTON, CITY OF	YAKIMA	A	Comm

6. PRIMARY CONTACT NAME & MAILING ADDRESS	7. OWNER NAME & MAILING ADDRESS	8. Owner Number 003522
CHRISTOPHER E. MORRIS CITY OF MABTON PO BOX 655 MABTON, WA 98935	MABTON, CITY OF ANGEL REYNA PO BOX 655 MABTON, WA 98935	TITLE: MAYOR
STREET ADDRESS IF DIFFERENT FROM ABOVE ATTN ADDRESS CITY STATE ZIP	STREET ADDRESS IF DIFFERENT FROM ATTN ADDRESS 305 MAIN ST CITY MABTON STATE WA ZIP 98935	

9. 24 HOUR PRIMARY CONTACT INFORMATION		10. OWNER CONTACT INFORMATION	
Primary Contact Daytime Phone:	(509) 894-4568	Owner Daytime Phone:	(509) 894-4096
Primary Contact Mobile/Cell Phone:	(509) 439-4077	Owner Mobile/Cell Phone:	(509) 439-4012
Primary Contact Evening Phone:	(xxx) xxx-xxxx	Owner Evening Phone:	(xxx) xxx-xxxx
Fax:	| E-mail: XXXXXX	Owner Fax Phone:	| E-mail: XXXXXX

WAC 246-290-420(9) requires that water systems provide 24-hour contact information for emergencies.

11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)

- [x] Not applicable (Skip to #12)
- [ ] Owned and Managed — SMA NAME: _____ SMA Number:
- [ ] Managed Only
- [ ] Owned Only

12. WATER SYSTEM CHARACTERISTICS (mark all that apply)

- [ ] Agricultural
- [x] Commercial / Business
- [x] Day Care
- [x] Food Service/Food Permit
- [ ] 1,000 or more person event for 2 or more days per year
- [ ] Hospital/Clinic
- [ ] Industrial
- [ ] Licensed Residential Facility
- [ ] Lodging
- [ ] Recreational / RV Park
- [x] Residential
- [x] School
- [ ] Temporary Farm Worker
- [x] Other (church, fire station, etc.): _____

13. WATER SYSTEM OWNERSHIP (mark only one)

- [ ] Association
- [x] City / Town
- [ ] County
- [ ] Federal
- [ ] Investor
- [ ] Private
- [ ] Special District
- [ ] State

14. STORAGE CAPACITY (gallons)

800,000

15	16	17	18									19			20	21					22	23	24			
	SOURCE NAME	INTERTIE	SOURCE CATEGORY									USE				TREATMENT					DEPTH		SOURCE LOCATION			
Source Number	LIST UTILITY'S NAME FOR SOURCE AND WELL TAG ID NUMBER. Example: WELL #1 XYZ456 IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S NAME Example: SEATTLE	INTERTIE SYSTEM ID NUMBER	WELL	WELL FIELD	WELL IN A WELL	SPRING	SPRING FIELD	SPRING IN [illegible]	SEA WATER	SURFACE WATER	RANNEY / INF. GALLERY	OTHER	PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION	FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	DEPTH TO FIRST OPEN INTERVAL IN FEET	CAPACITY (GALLONS PER MINUTE)	1/4, 1/4 SECTION	SECTION NUMBER	TOWNSHIP	RANGE
S01	Well #4 - ABR606				X								X					X				X	740	450	SE NW	01	08N	22E
S02	Well #2 - AFL768		X												X			X					1180	200	SE NW	01	08N	22E
S03	Well #3 - AFL767		X											X		Y		X				X	1004	250	SE NW	01	08N	22E
S04	Well #5 - ALF995				X								X			Y		X					425	500	SE NE	01	08N	22E
S05	Wellfield / S01, S04			X									X			Y		X				X	420	950			00N	00E

WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
49650 R	MABTON, CITY OF	YAKIMA	A	Comm

	ACTIVE SERVICE CONNECTIONS	DOH USE ONLY! CALCULATED ACTIVE CONNECTIONS	DOH USE ONLY! APPROVED CONNECTIONS
25. SINGLE FAMILY RESIDENCES (How many of the following do you have?)	0	590	632
A. Full Time Single Family Residences (Occupied 180 days or more per year)	501		
B. Part Time Single Family Residences (Occupied less than 180 days per year)	0		
26. MULTI-FAMILY RESIDENTIAL BUILDINGS (How many of the following do you have?)			
A. Apartment Buildings, condos, duplexes, barracks, dorms	28		
B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied more than 180 days/year	89		
C. Part Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied less than 180 days/year	0		
27. NON-RESIDENTIAL CONNECTIONS (How many of the following do you have?)			
A. Recreational Services and/or Transient Accommodations (Campsites, RV sites, hotel/motel/overnight units)	0	0	0
B. Institutional, Commercial/Business, School, Day Care, Industrial Services, etc.	42	42	39
28. TOTAL SERVICE CONNECTIONS		632	671

29. FULL-TIME RESIDENTIAL POPULATION

A. How many residents are served by this system 180 or more days per 2290

30. PART-TIME RESIDENTIAL POPULATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many part-time residents are present each month?												
B. How many days per month are they present?												

31. TEMPORARY & TRANSIENT USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many total visitors, attendees, travelers, campers, patients or customers have access to the water system each month?												
B. How many days per month is water accessible to the public?												

32. REGULAR NON-RESIDENTIAL USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. If you have schools, daycares, or businesses connected to your water system, how many students daycare children and/or employees are present each month?												
B. How many days per month are they present?												

33. ROUTINE COLIFORM SCHEDULE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	2	2	2	2	2	2	2	2	2	2	2	2

35. Reason for Submitting WFI:

☐ Update - Change ☐ Update - No Change ☐ Inactivate ☐ Re-Activate ☐ Name Change ☐ New System ☐ Other _____

36. I certify that the information stated on this WFI form is correct to the best of my knowledge.

SIGNATURE: _____

DATE: _____

PRINT NAME: _____

TITLE: _____

WS ID	WS Name
49650	MABTON, CITY OF

Total WFI Printed: 1

APPENDIX B

WELL LOGS

WELL NO. 1 WELL LOG

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. _____

Water Right Permit No. _____

(1) **OWNER:** Name City of Mabton Address P.O. Box 655, Mabton, WA 98935

(2) **LOCATION OF WELL:** County Yakima S½ ¼ NE ¼ Sec. 1 T. 8 N., R. 22 W.M.

(2a) **STREET ADDDRESS OF WELL** (or nearest address) In middle of City Park at Main and Fern Streets G.H.

(3) **PROPOSED USE:** ☐ Domestic ☐ Industrial ☐ Municipal ☐ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) **TYPE OF WORK:** Owner's number of well (if more than one) _____

Abandoned ☐ New well ☐ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well _____ inches.

Drilled _____ feet. Depth of completed well _____ ft.

(6) **CONSTRUCTION DETAILS:**

Casing installed: _____ " Diam. from _____ ft. to _____ ft.

Welded ☐ Liner installed ☐ Threaded ☐ _____ " Diam. from _____ ft. to _____ ft.

_____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☐

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☐

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☐ Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☐ No ☐ To what depth? _____ ft.

Material used in seal _____

Did any strata contain unusable water? Yes ☐ No ☐

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) **PUMP:** Manufacturer's Name _____

Type: _____ H.P. _____

(8) **WATER LEVELS:** Land-surface elevation above mean sea level _____ ft.

Static level _____ ft. below top of well Date _____

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
This is the Well #1 in Mabton drilled in about 1920 to a depth of 1,140 feet. It is reported to have been abandoned on or prior to 1956. It had been capped and not used since then but was never grout sealed until this time. The bore hole and casing was sealed with neat cement grout with a high pressure grout pump, 320 LF of 1¼" G.I. pipe and a pump rig. Job required 8 cubic yards of neat cement to seal it to the surface. Work supervised by: Pat Jungmann Retired Well Driller		

RECEIVED
FEB 6 1989
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work started 9/30/88, 19. Completed 10/1/88, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Bob Spink
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 636A Jadwin Avenue, Richland, WA 99352

(Signed) Bob Spink City Engineer License No. _____
(WELL DRILLER)

Contractor's Registration No. _____ Date 2/2, 19 89

(USE ADDITIONAL SHEETS IF NECESSARY)

WELL NO. 2 WELL LOG NOT FOUND

WELL NO. 3 WELL LOG

Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

STATE OF WASHINGTON

Permit No G 3-00027

(1) OWNER: Name TOWN OF MABTON Address Town Hall, Mabton, Wa. 98935

(2) LOCATION OF WELL: County Yakima SW ¼ NE ¼ Sec 1 T 8 N., R 22E W.M.

Bearing and distance from section or subdivision corner 910'N & 530'E. from the center of Sec 1

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 2
New well ☐ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 10 inches.
Drilled 1,004 ft. Depth of completed well 1,004 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 16" Diam. from 0 ft. to 130 ft.
Threaded ☐ 12" Diam. from 120 ft. to 307 ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐
Type of perforator used ?
SIZE of perforations ? in. by ? in.
295 perforations from 295 ft. to 305 ft.
96 perforations from 96 ft. to 115 ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☐ No ☐ To what depth? ft.
Material used in seal
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level 718 ft.
Static level 34 ft. below top of well Date 5/28/57
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom?
Yield: 400 gal./min. with 66 ft. drawdown after 24 hrs.
" 300 " 42 " "
" 450 " 74 " "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 5/2
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 61 Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:
Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Top Soil	0	10
Sand and Gravel	10	15
Cemented Gravel	15	28
Gravel	28	73
Blue Clay	73	76
Sand and Gravel	76	127
Black Porous Bassalt	127	132
Black Bassalt	132	167
Black Bassalt with Clay	167	180
Green and Blue Clay	180	229
Blue Sand Rock	229	240
Blue Shale	240	289
Black Bassalt with Shale	289	297
Black Porous Bassalt	297	300
Black Bassalt with Shale	300	308
Black Bassalt	308	312
Red Bassalt	312	328
Brown Basalt	328	347
Black Basalt	347	363
Dull Gray Basalt	363	380
Gray Basalt	380	400
Black Basalt	400	407
Gray Basalt with Sand	407	418
Black Basalt	418	450
Gray Basalt with Sand	450	453
Gray Basalt	453	479
Black Basalt	479	487
Black Porous Basalt	487	513
Black Basalt	513	666
Red Basalt	666	690
Black Basalt	690	757
Gray Basalt with Sand	757	860
Black Basalt with Sand	860	885
Black Basalt	885	890
Black and Gray Basalt	890	1004
Sand	1004	

Work started September 19 56 Completed May 19 57

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Dilley Drilling Co.
(Person, firm, or corporation) (Type or print)

Address 605 Meadowbrook Road Yakima, Wash. 9890

[Signed] Victor E. Dilley
(Well Driller)

License No. 223 02 3587 Date Aug. 2, 1972

(USE ADDITIONAL SHEETS IF NECESSARY)

F. No. 7336—OS—(Rev. 4-71).

WELL NO. 4 WELL LOG

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. B

Permit No. 64-29212P

(1) OWNER: Name City of Mabton Address P.O. Box 655 Mabton, WA. 98935

(2) LOCATION OF WELL: County Yakima — NW ¼ NE ¼ Sec. 1 T. 8 N., R. 22 E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 4
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 15" 0-437 ft, 12" 437-594 and 9 7/8" from 594-740.6 inches.
Drilled 740.6 ft. Depth of completed well 740.6 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 16" Diam. from 0 ft. to 134 ft.
Threaded ☐ 12" Diam. from +18" ft. to 437.7 ft.
Welded ☒ 10" Diam. from 411 ft. to 594 ft.
8" 563 729

Perforations: Yes ☒ No ☐
Type of perforator used Factory
SIZE of perforations 5/32 in. by 3 in.
563 perforations from 563 ft. to 726 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 19 ft.
Material used in seal Bentonite & Cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 67 ft. below top of well Date 11-8-87
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Layne of Washington
Yield: gal./min. with ft. drawdown after hrs.
" " "
" see attached "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
	see attached				

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 66 Was a chemical analysis made? Yes ☒ No ☐
*SEE ATTACHED

RECEIVED
NOV 25 1987
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Br sand	0	20
Br sandy clay	20	48
Cemented gravel	48	50
Gravel	50	62
Br sand clay	62	67
Gravel	67	129
Basalt grey	129	179
Br broken basalt	179	191
Br clay & basalt	191	203
Green clay	203	217
Gray clay & blue	217	259
Green clay	259	271
Gray clay	271	286
Br basalt	286	297
Med. black basalt	297	304
Black basalt	304	319
Trace of red	319	320
Black basalt	320	369
Hard grey basalt	369	418
Black basalt	418	423
Grey basalt	423	438
Black broken	438	442
Grey basalt	442	444
Black basalt	444	446
Grey basalt	446	459
Black broken	459	462
Med grey basalt	462	486
Very black broken	486	503
Black broken	503	517
Grey basalt	517	593
Black broken pyrite	593	610
Black basalt	610	667
Black basalt	667	673
Cracks in rock, black	673	677
Hard basalt	677	689
Fractured basalt	689	710

Work started May 26, 19 87 Completed Nov. 6, 19 87

WELL DRILLER'S STATEMENT: (continued)

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

ENTERED

NAME L & L Drilling, Inc.
(Person, firm, or corporation) (Type or print)
Address P.O. Box 167
Wilson Creek, WA. 98860

[Signed] Larry Webley
(Well Driller)

License No. 0518 Date Nov. 11, 19 87

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

Page 2

WATER WELL REPORT

STATE OF WASHINGTON

B

Application No. .....

Permit No. .....

(1) OWNER: Name City of Mabton Address .....

(2) LOCATION OF WELL: County ..... NW ¼ NE ¼ Sec. 1 T. 8 N., R. 22 W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well ☐ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well ..... inches.
Drilled ..... ft. Depth of completed well ..... ft.

(6) CONSTRUCTION DETAILS:

Casing installed: ..... " Diam. from ..... ft. to ..... ft.
Threaded ☐ ..... " Diam. from ..... ft. to ..... ft.
Welded ☐ ..... " Diam. from ..... ft. to ..... ft.

Perforations: Yes ☐ No ☐
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes ☐ No ☐
Manufacturer's Name .....
Type ..... Model No. .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes ☐ No ☐ Size of gravel .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes ☐ No ☐ To what depth? ..... ft.
Material used in seal .....
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

(7) PUMP: Manufacturer's Name .....
Type: ..... H.P. .....

(8) WATER LEVELS: Land-surface elevation above mean sea level ..... ft.
Static level ..... ft. below top of well Date .....
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? .....
Yield: ..... gal./min. with ..... ft. drawdown after ..... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test .....
Bailer test ..... gal./min. with ..... ft. drawdown after ..... hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
PAGE 2		
Green clay	710	734
Broken basalt	734	740.6

RECEIVED
NOV 25 1987
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work started ..... 19 ..... Completed ..... 19 .....

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME ..... (Person, firm, or corporation) (Type or print)

Address .....

[Signed] ..... (Well Driller)

License No. ..... Date ..... 19 .....

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

WELL NO. 5 WELL LOG

#5

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

Please print, sign and return to the Department of Ecology

Water Well Report

Original – Ecology, 1st copy – owner, 2nd copy – driller

ECOLOGY

Construction/Decommission

☐ Construction
☐ Decommission ORIGINAL INSTALLATION Notice of Intent Number W210571

Current Notice of Intent No. W210571
Unique Ecology Well ID Tag No. ALF 995
Water Right Permit No. G4-29212C
Property Owner Name City of Mabton
Well Street Address Hwy 12 + 3 St
City Mabton County Yakima
Location SE 1/4-1/4 NE 1/4 Sec 1 Twn 8 R 22 EWM (circle one) or WWM
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____
Tax Parcel No. ____

PROPOSED USE: ☐ Domestic ☐ Industrial ☒ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other ____

TYPE OF WORK: Owner's number of well (if more than one) ____
☒ New well ☐ Reconditioned Method: ☐ Dug ☐ Bored ☐ Driven
☐ Deepened ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 12 inches, drilled 710 ft.
Depth of completed well 710 ft.

CONSTRUCTION DETAILS
Casing Installed: ☒ Welded 16" Diam. from +2 ft. to 135 ft.
☐ Liner installed 12" Diam. from +2 ft. to 425 ft.
☐ Threaded ____" Diam. from ____ ft. to ____ ft.

Perforations: ☐ Yes ☒ No
Type of perforator used ____
SIZE of perfs ____ in. by ____ in. and no. of perfs ____ from ____ ft. to ____ ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location ____
Manufacturer's Name ____
Type ____ Model No. ____
Diam. ____ Slot size ____ from ____ ft. to ____ ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel/Filter packed: ☐ Yes ☐ No ☐ Size of gravel/sand ____
Materials placed from ____ ft. to ____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 135 ft.
Material used in seal Cement Grout
Did any strata contain unusable water? ☒ Yes ☐ No
Type of water? Not allowed Depth of strata ____
Method of sealing strata off Cement grout at 425'

PUMP: Manufacturer's Name ____
Type: ____ H.P. ____

WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 71' ft. below top of well Date 06-20-06
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? Layne of Wa.
Yield: 500 gal./min. with 107 ft. drawdown after 1 hrs.
Yield: 600 gal./min. with 192 ft. drawdown after 1 hrs.
Yield: 860 gal./min. with 325 ft. drawdown after 1 hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1:35	401'	1:45	82'	2:00	81'2"
2:05	80'4"				

Date of test 06-20-06
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water 57° Was a chemical analysis made? ☒ Yes ☐ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. Indicate all water encountered. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Silt Fine Sand + Gravel	0	17
Sand Stone small gravel	17	50
Silt Stone Sand Gravel	50	135
Gray Basalt Hard	135	165
Brown Clay	165	180
Blue Green Clay	180	200
Blue Green Clay Stone	200	220
Ash Claystone & Ash		
Ash Blue Small	220	250
Diamond Clay		
Blue Green Clk Stone	250	280
Sand Stone Conglomerate		
Black to Gray Basalt	280	300
Gray Basalt	300	366
Black Basalt	366	416
Gray Basalt	416	470
Brown Green Claystone	470	480
Black Broken	480	560
Gray Basalt	560	675
Black Brown Broken	675	710
Basalt claystone		
12" casing was cemented to		
Basalt at 425'		

DEPT OF ECOLOGY Received FEB 12 2008 CENTRAL REGION OFFICE

Start Date 4-10-06 Completed Date 7-12-06

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller/Engineer/Trainee Name (Print) Robert Wehrle
Driller/Engineer/Trainee Signature [signature]
Driller or trainee License No. 2820

If TRAINEE:
Driller's Licensed No. 2847
Driller's Signature [signature]

Drilling Company Blue Star Enterprises North West
Address 2010 Butler Loop
City, State, Zip Richland WA. 99354
Contractor's Registration No. Bluesee 965 KE Date 8-28-06

Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 2/03)

Mailed to Eric + Sparks nx-30-06

APPENDIX C

LEAK DETECTION REPORT

COPY

LEAK DETECTION SURVEY REPORT

City of Mabton

Mabton, WA

December 2012

AMERICAN LEAK® DETECTION
THE ORIGINAL LEAK SPECIALISTS™

P.O. Box 155 Spokane, WA 99210
800-928-5325

AMERICAN LEAK DETECTION
THE ORIGINAL LEAK SPECIALISTS™

December 11, 2012

Chris Morris
City of Mabton
PO Box 655
Mabton, WA 98935

RE: Leak Detection Survey Summary

Dear Chris,

American Leak Detection provided a leak detection survey for the City of Mabton water system 12/06/2012 and 12/07/2012 of all steel and plastic lines. The survey was conducted by Jordan Marsh with American Leak Detection and Noe, Chris and Mike with the City of Mabton.

During this survey 108 areas were tested throughout the system as shown on the Field Notes. Thirteen areas were initially found to have possible leak noise. All probable leak noise detected was noted and during the final phase these areas were re-tested to determine if they were real leaks and where they were originating.

This process yielded a total of 2 leaks: 1 on a service line and 1 on a check valve. Details of each leak detection can be found in the Survey Field Notes portion of the report.

In summary, the system tested very good with only these issues stated above. Thanks for the opportunity to serve your community.

Sincerely,

Patti Godwin
American Leak Detection

PO Box 155 • Spokane Washington 99210
800.928.5325 • 509.536.5166 • Fax 509.536.5002
Idaho 208.765.8550 • Moses Lake 509.764.6640 • Tri Cities 509.585.7812
Wenatchee 509.662.7324 • Yakima 509.972.2122
www.americanleakdetection.com
Each Office is Independently Owned and Operated

AMERICAN LEAK DETECTION
THE ORIGINAL LEAK SPECIALISTS™

SURVEY FIELD NOTES

CUSTOMER: City of Mabton **DATES:** 12/06/2012 – 12/07/2012
ALD TECH: Jordan Marsh **CUSTOMER'S REPRESENTATIVE:** Noe Trujillo

SET UP# 27	GV CS CHECK VALVE FH MTR WELL	NOISE LEVEL: LOW	LOCATION: Well #5
Check valve is leaking by.			

SET UP# 54	GV CS OTHER FH MTR WELL	NOISE LEVEL: MEDIUM	LOCATION: 222 North St
Checked all available valves and meters in area. Noise did not develop in any direction. Monitor area for changes.			

AMERICAN LEAK DETECTION
THE ORIGINAL LEAK SPECIALISTS™

LOCATE: 1

SET UP: 107

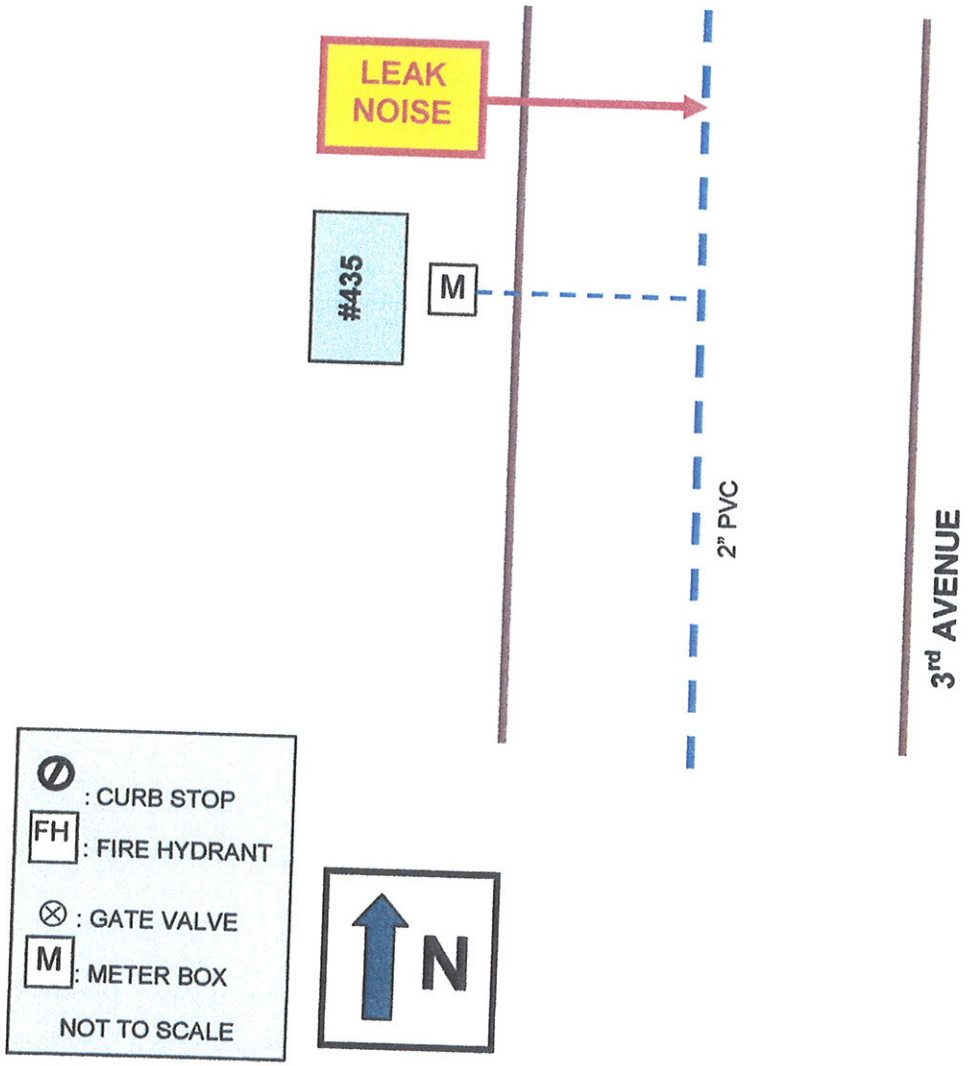
LOCATE DETAIL SHEET

CUSTOMER: City of Mabton **DATE:** 12/7/12

TECH: JMarsh **CUSTOMER'S REPRESENTATIVE:** NTrujillo

DETECTION OF LEAK: Correlator: ☐ Sonic: ☒

TYPE & SIZE OF MAIN: 2" PVC **SERVICE:** 435 3rd Ave



REMARKS: Leak noise best 11 feet north of #435 meter, approximately 11 feet east of fence. Marked with blue paint.

CUSTOMER INPUT:
DATE REPAIRED:_____ BY:_____ EST.LEAK SIZE:_____GPM

AMERICAN LEAK DETECTION
THE ORIGINAL LEAK SPECIALISTS™

SURVEY TEST POINTS RECORD

SYSTEM: Mabton DATE: 12-6-12

NOTES	SET UP	CONTACT POINTS		
	# 1	(GV) FH CS MTR OTHER ____		Tank
	# 2	(GV) FH CS MTR OTHER ____		Main / Rose
	# 3	(GV) FH CS MTR OTHER ____		East of tank on Main
	# 4	GV (FH) CS MTR OTHER ____		Main / Rose
	# 5	(GV) FH CS MTR OTHER ____		Main / Cedar
	# 6	(GV) FH CS MTR OTHER ____		Main / Pine
	# 7	GV (FH) CS MTR OTHER ____		Main / Pine
	# 8	(GV) FH CS MTR OTHER ____		Alley B/T Pine & Maple on Main
	# 9	(GV) FH CS MTR OTHER ____		Main / Maple
	# 10	GV (FH) CS MTR OTHER ____		Maple / 3rd St
	# 11	GV (FH) CS MTR OTHER ____		Maple / 3rd St

AMERICAN LEAK DETECTION
THE ORIGINAL LEAK SPECIALISTS™

SURVEY TEST POINTS RECORD

SYSTEM: Mabton DATE: 12-6-12

NOTES	SET UP	CONTACT POINTS		
See notes	# 27	GV FH CS MTR OTHER Check Valve	L	Well 5
	# 28	GV (FH) CS MTR OTHER		South / 6th st
	# 29	GV (FH) CS MTR OTHER		Fern / 6th st
Rech OK	# 30	(GV) FH CS MTR OTHER	L	Fern / 6th st
	# 31	GV FH CS (MTR) OTHER		617 E Fern
	# 32	GV (FH) CS MTR OTHER		Fern / 5th st
	# 33	(GV) FH CS MTR OTHER		Fern / Main
	# 34	(GV) FH CS MTR OTHER		Main / Rose
Rech ok	# 35	GV (FH) CS MTR OTHER	L	519 E Rose
Rose	# 36	(GV) FH CS MTR OTHER	L	Rose / 6th
	# 37	GV FH CS (MTR) OTHER		Northwest Horticulture

Find

AMERICAN LEAK DETECTION
THE ORIGINAL LEAK SPECIALISTS™

SURVEY TEST POINTS RECORD

SYSTEM: Mabton DATE: 12-8-12

NOTES	SET UP	CONTACT POINTS		
	# 53	GV (FH) CS MTR OTHER ____		Ally b/t 3rd st / Main on South In ground under Round meter lid
See notes	# 54	GV ~~FH~~ CS (MTR) OTHER ____	M	222 North st
	# 55	GV ~~FH~~ CS MTR OTHER ____		Fire station
	# 56	GV ~~FH~~ CS MTR OTHER ____		Washington / 6th st
	# 57	(GV) FH CS MTR OTHER ____		Washington / 6th st
	# 58	GV (FH) CS MTR OTHER ____		C st / 6th st
	# 59	(GV) FH CS MTR OTHER ____		B st / 6th st
	# 60	GV ~~FH~~ CS MTR OTHER ____		B st / 6th st
	# 61	GV (FH) CS MTR OTHER ____		East side of MHS
	# 62	GV FH CS (MTR) OTHER ____		East side of MHS
	# 63	GV (FH) CS MTR OTHER ____		507 B st

AMERICAN LEAK DETECTION
THE ORIGINAL LEAK SPECIALISTS™

SURVEY TEST POINTS RECORD

SYSTEM: Mahtas DATE: 12-6-12

NOTES	SET UP	CONTACT POINTS		
	# 79	GV FH (CS MTR) OTHER ____		109 Adams
	# 80	GV CS (FH) MTR OTHER ____		b/t 3rd ave & 2nd ave on Adams
	# 81	GV (FH) CS MTR OTHER ____		b/t 3rd & 4th on Adams
	# 82	GV CS FH (MTR) OTHER ____		304 ~~3rd~~ 5th ave
	# 83	GV CS FH (MTR) OTHER ____		601 Adams
	# 84	GV CS FH (MTR) OTHER ____		7th ave / Monroe
	# 85	GV (FH) CS MTR OTHER ____		6th ave / Monroe
Find	# 86	(GV) FH CS MTR OTHER ____		b/t 5th ave & ~~6th~~ ave on monroe
	# 87	(GV) FH CS MTR OTHER ____		b/t 4th ave & 5th ave on monroe
	# 88	GV (FH) CS MTR OTHER ____		4th ave / Monroe
Find	# 89	GV FH CS (MTR) OTHER ____		~~6th~~ 330 N 3rd ave

AMERICAN LEAK DETECTION
THE ORIGINAL LEAK SPECIALISTS™

SURVEY TEST POINTS RECORD

SYSTEM: Mabton DATE: 12-6-12

NOTES	SET UP	CONTACT POINTS		
	# 105	(GV) CS OTHER FH MTR _____		8th / 9th
	# 106	(GV) CS OTHER FH MTR _____		High school Rd / 9th
Locate 1	# 107	GV CS OTHER FH MTR _____	L	435 3rd Ave
	# 108	GV (CS) OTHER FH (MTR) _____		North end of 3rd Ave
	#	GV CS OTHER FH MTR _____		
	#	GV CS OTHER FH MTR _____		
	#	GV CS OTHER FH MTR _____		
	#	GV CS OTHER FH MTR _____		
	#	GV CS OTHER FH MTR _____		
	#	GV CS OTHER FH MTR _____		
	#	GV CS OTHER FH MTR _____		

APPENDIX D

FIRE MARSHALL LETTER AND FIRE FLOW REQUIREMENTS

Mabton Fire Department

315 North St. P.O. Box 655 Mabton, WA 98935 (509) 894-4096 Fax (509) 894-4813
Luke Cussins
Fire Chief
lcussins@bentonrea.com

November 21, 2012

Mayor Angel Reyna
City of Mabton
City Hall
PO Box 655
Mabton, WA 98935

Subject: City of Mabton Water System Plan Update

Dear Mayor Reyna:

The Fire Department understands the following:

- The Department of Health and The Washington Administrative Code (WAC 246-290-235 Finished Water Storage Facilities) allow standby and fire suppression water storage to be nested with the larger of the two volumes being the minimum available, provided the local fire protection authority does not require them to be additive.
- Nesting of standby storage and fire suppression storage is a choice taken by municipalities to avoid the need for additional reservoir capacity to be constructed.
- The City's current maximum fire flow requirement is 1,500 gpm for 2 hours for a total of 180,000 gallons.
- The City cannot immediately change facilities to stop nesting standby storage and fire suppression storage.

We believe that this decision is valid for the City's current water system plan 6-year planning period, but should be reevaluated during the development of the next water system plan.

The Fire Chief for the City of Mabton approves the nesting of standby and fire suppression storage for the City of Mabton.

If you have any questions or concerns, please contact our office.

Sincerely yours,

Luke Cussins

Volunteer Fire Chief
City of Mabton

cc: Jim Bricel, P.E., Project Manager, Gray & Osborne, Inc.

APPENDIX B
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION B101
GENERAL

B101.1 Scope. The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

SECTION B102
DEFINITIONS

B102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIRE-FLOW. The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for fire fighting.

FIRE-FLOW CALCULATION AREA. The floor area, in square feet (m^2), used to determine the required fire flow.

SECTION B103
MODIFICATIONS

B103.1 Decreases. The fire chief is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

B103.2 Increases. The fire chief is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

B103.3 Areas without water supply systems. For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the *fire code official* is authorized to utilize NFPA 1142 or the *International Wildland-Urban Interface Code.*

SECTION B104
FIRE-FLOW CALCULATION AREA

B104.1 General. The fire-flow calculation area shall be the total floor area of all floor levels within the *exterior walls*, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

B104.2 Area separation. Portions of buildings which are separated by *fire walls* without openings, constructed in accordance with the *International Building Code*, are allowed to be considered as separate fire-flow calculation areas.

B104.3 Type IA and Type IB construction. The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

Exception: Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

SECTION B105
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings. The minimum fire-flow and flow duration requirements for one- and two-family *dwellings* having a fire-flow calculation area that does not exceed 3,600 square feet (344.5 m^2) shall be 1,000 gallons per minute (3785.4 L/min) for 1 hour. Fire-flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5m^2) shall not be less than that specified in Table B105.1.

Exception: A reduction in required fire-flow of 50 percent, as *approved*, is allowed when the building is equipped with an *approved automatic sprinkler system.*

B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family *dwellings* shall be as specified in Table B105.1.

Exception: A reduction in required fire-flow of up to 75 percent, as *approved*, is allowed when the building is provided with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.

SECTION B106
REFERENCED STANDARDS

ICC	IBC-09	International Building Code	B104.2, Table B105.1
ICC	IWUIC-09	International Wildland-Urban Interface Code	B103.3
NFPA	1142-07	Standard on Water Supplies for Suburban and Rural Fire Fighting	B103.3

TABLE B105.1*
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute)[b]	FLOW DURATION (hours)
Type IA and IB[a]	Type IIA and IIIA[a]	Type IV and V-A[a]	Type IIB and IIIB[a]	Type V-B[a]		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

For SI: 1 square foot = 0.0929 m^2, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. Types of construction are based on the *International Building Code*.

b. Measured at 20 psi residual pressure.

APPENDIX C
FIRE HYDRANT LOCATIONS AND DISTRIBUTION

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION C101
GENERAL

C101.1 Scope. Fire hydrants shall be provided in accordance with this appendix for the protection of buildings, or portions of buildings, hereafter constructed.

SECTION C102
LOCATION

C102.1 Fire hydrant locations. Fire hydrants shall be provided along required fire apparatus access roads and adjacent public streets.

SECTION C103
NUMBER OF FIRE HYDRANTS

C103.1 Fire hydrants available. The minimum number of fire hydrants available to a building shall not be less than that listed in Table C105.1. The number of fire hydrants available to a complex or subdivision shall not be less than that determined by spacing requirements listed in Table C105.1 when applied to fire apparatus access roads and perimeter public streets from which fire operations could be conducted.

SECTION C104
CONSIDERATION OF EXISTING FIRE HYDRANTS

C104.1 Existing fire hydrants. Existing fire hydrants on public streets are allowed to be considered as available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads.

SECTION C105
DISTRIBUTION OF FIRE HYDRANTS

C105.1 Hydrant spacing. The average spacing between fire hydrants shall not exceed that listed in Table C105.1.

Exception: The fire chief is authorized to accept a deficiency of up to 10 percent where existing fire hydrants provide all or a portion of the required fire hydrant service.

Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table C105.1.

TABLE C105.1
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS[a, b, c] (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT[d]
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more[e]	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

a. Reduce by 100 feet for dead-end streets or roads.

b. Where streets are provided with median dividers which cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.

c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.

d. Reduce by 50 feet for dead-end streets or roads.

e. One hydrant for each 1,000 gallons per minute or fraction thereof.

APPENDIX E

WATER QUALITY MONITORING REPORT

Water Quality Monitoring Report for the Year 2011

System: MABTON, CITY OF **PWSID:** 49650 R **Report Date:** 03/02/2011
Contact: ANGEL REYNA **Group:** A - Comm **County:** YAKIMA **Region:** EASTERN

Part 1: List of Active Sources with Water Quality Monitoring Requirements

DOH Source#	Name	Type	Use	Susceptibility Rating
S05	Wellfield / S01, S04	Well Field	Permanent	Low

Part 2: Sampling Schedule for the Year 2011

Coliform Sampling (Routine)	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	4	4	4	4	4	3	3	3	3	3	3	3

* Indicates the requirement is an exception from WAC 246-290.

- If the coliform (bacteriological) sampling schedule listed at the bottom of the current Water Facilities Inventory (WFI) form for your system is different from the schedule listed above, follow the schedule on the current WFI.
- Samples must be collected from representative points throughout the distribution system.
- Repeat samples are required following an unsatisfactory sample. In addition, collect a sample from each operating groundwater source.
- A minimum of 5 routine samples are required the month following one or more unsatisfactory samples in accordance with your system's Coliform Monitoring Plan.

Lead and Copper Distribution Sampling

- Lead and copper samples must be collected from indoor faucets within the distribution system after the water has sat unused in the pipes for at least 6 hours but no more than 12 hours.
- Sample faucets should be flushed with cold water the evening prior to collecting the sample.
- Part 2 indicates the month in which samples should be collected. Part 4 indicates the total number of sample required.
- If you are required to sample annually or once every 3 years, samples must be collected between June and September.

Chlorine Residual Sampling

- Systems that use continuous chlorination must take chlorine residual measurements daily (or at a reduced frequency approved by the department), and at the same time and location as routine and repeat coliform samples.

Disinfection Byproducts Sampling

- Systems that use continuous chlorination treatment must collect samples for total trihalomethanes (TTHM) and for haloacetic acids (HAA5) for each chlorination treatment facility identified in your individual disinfection byproducts (DBP) monitoring plan. Collect the samples from the distribution system at the frequency and locations identified in your DBP monitoring plan.

Chemical Sampling Requirements

- Source water chemical samples must be taken from a location as near to the source as possible, but after all treatment, and before entering the distribution system.
- Nitrate, nitrite and arsenic are included as part of a complete IOC.

Month	Source	Monitoring Requirement	Test Panel
January		*No source chemical sampling required this month*	

Washington State Department of Health
Division of Environmental Health, Office of Drinking Water

Water Quality Monitoring Report for the Year 2011

Monitoring Group	Test Panel	Sample Location	Schedule/Status
Lead/Copper *	LCR	Distribution	LCR 1 Set of 20 samples between Jan 2010 - Dec 2012
Nitrate *	NIT	S05	Collect 1 sample(s) every 1 year
General Pesticides	Pest1	S05	1 sample between Jan 2011 - Dec 2013
Diquat	Diquat	All sources	State Waiver Thru Dec 2013
Radium 228	RAD 228	S05	2 sample(s) between Jan 2011 – Dec 2013
Total Trihalomethane	THM	Distribution	1 sample per treatment plant every 3 years
Volatile Organic Contaminants	VOC	S05	1 sample between Jan 2011 - Dec 2013

** These contaminant monitoring groups do not have waiver options under the SDWA.*

Water Quality Last Collect Date

Create Date: 2/24/2012

Analyte Group	WS ID	Water System Name	Test Panel	Source	Collect Date	Lab/Sample Number	Number Analytes	Number Measured	Number Triggers	# Secondary MCLs	# Primary MCLs	# THM Detections
DBP	49650 R	MABTON, CITY OF	HAA5	Distr.	09/27/2010	089 80086	8	7				
DBP	49650 R	MABTON, CITY OF	THM	Distr.	09/27/2010	089 70006	6	5	4			5
IOC	49650 R	MABTON, CITY OF	ICHEM	Distr.	08/28/1990	051 12679	18	18				
						051 12683	18	18	1	1		
						051 12684	20	20	3		1	
IOC	49650 R	MABTON, CITY OF	ICHEM	S01	09/29/1993	109 93015	1	1				
IOC	49650 R	MABTON, CITY OF	ICHEM	S02	08/28/1990	051 12683	18	18	1	1		
IOC	49650 R	MABTON, CITY OF	ICHEM	S03	08/28/1990	051 12684	20	20	3		1	
IOC	49650 R	MABTON, CITY OF	IOC	S01	06/25/2009	105 11192	43	31				
IOC	49650 R	MABTON, CITY OF	IOC	S02	09/14/1998	014 22297	43	4				
						081 57143	43	25	1	1		
IOC	49650 R	MABTON, CITY OF	IOC	S03	12/30/2002	149 00661	43	29				
IOC	49650 R	MABTON, CITY OF	IOC	S04	06/25/2009	105 11193	43	31				
IOC	49650 R	MABTON, CITY OF	LCR	Distr.	07/29/2009	105 13942	2	2				
						105 13943	2	2				
						105 13944	2	2				
						105 13945	2	2				
						105 13946	2	2				
						105 13947	2	2				
						105 13948	2	2				
						105 13949	2	2				
						105 13950	2	2				
						105 13951	2	2				
						105 13952	2	2				
						105 13953	2	2				
						105 13954	2	2				
						105 13955	2	2				
						105 13956	2	2				
						105 13957	2	2				
						105 13958	2	2				
						105 13959	2	2				
						105 13960	2	2				
						105 13961	2	2				
IOC	49650 R	MABTON, CITY OF	NIT	S01	09/14/2010	151 18449	3	3				
IOC	49650 R	MABTON, CITY OF	NIT	S02	07/09/2007	151 11449	3	3	1			
IOC	49650 R	MABTON, CITY OF	NIT	S03	09/06/2011	151 17718	3	3				
IOC	49650 R	MABTON, CITY OF	NIT	S04	09/14/2010	151 18450	3	3				
IOC	49650 R	MABTON, CITY OF	NIT	S05	11/07/2011	151 23886	3	3				
MICRO	49650 R	MABTON, CITY OF	COLI_AP	Distr.	01/24/2012	151 01283	3	1				
						151 01284	3	1				
RAD	49650 R	MABTON, CITY OF	RAD	Distr.	02/20/1990	101 03094	1	1				
RAD	49650 R	MABTON, CITY OF	RAD	S01	04/25/2007	028 34396	13	2				
RAD	49650 R	MABTON, CITY OF	RAD	S02	09/14/1998	101 06036	10	3				

LCR Sample Detail

Water System Information

Water System Name	MABTON, CITY OF	**Analyte Group**	IOC -- INORGANIC CONTAMINANTS
Water System ID	49650	**Test Panel**	LCR -- LEAD COPPER
WS Group-Type	Group A-Community	**County**	YAKIMA
Status	Active	**Region**	Eastern
Source Number		**Total Pop**	3335

Coll Date	Lab Sam	Purp	Location	Rslt Rng	Lead	Rslt Rng	Copper
07/29/2009	105-13942	RC	104 n 6th st	LT	.0005	LT	.0200
07/29/2009	105-13943	RC	430 5th st	LT	.0005	LT	.0200
07/29/2009	105-13944	RC	517 6th	LT	.0005	LT	.0200
07/29/2009	105-13945	RC	318 rose st	EQ	.0006	EQ	.0482
07/29/2009	105-13946	RC	302 rose st	LT	.0005	LT	.0200
07/29/2009	105-13947	RC	533 b st	EQ	.0011	LT	.0200
07/29/2009	105-13948	RC	419 b st	LT	.0005	EQ	.0238
07/29/2009	105-13949	RC	524 fern st	LT	.0005	LT	.0200
07/29/2009	105-13950	RC	605 fern st	EQ	.0010	EQ	.0205
07/29/2009	105-13951	RC	503 b st	LT	.0005	EQ	.0382
07/29/2009	105-13952	RC	322 6th ave	LT	.0005	EQ	.0288
07/29/2009	105-13953	RC	103 first ave	EQ	.0011	LT	.0200
07/29/2009	105-13954	RC	307 pine	EQ	.0006	EQ	.0365
07/29/2009	105-13955	RC	116 5th ave	LT	.0005	LT	.0200
07/29/2009	105-13956	RC	211 5th ave	EQ	.0099	EQ	.0835
07/29/2009	105-13957	RC	211 2nd ave	EQ	.0008	EQ	0388
07/29/2009	105-13958	RC	205 6th ave	LT	.0005	EQ	.0445
07/29/2009	105-13959	RC	kt	EQ	.0009	LT	.0200
07/29/2009	105-13960	RC	232 6th ave	LT	.0005	EQ	.0990
07/29/2009	105-13961	RC	130 4th ave	LT	.0005	EQ	.0252

Coll Date	Lab Sam	Purp	Location	Rslt Rng	Lead	Rslt Rng	Copper
07/25/2006	105-12877	RC	507 B. ST.	EQ	.0016	EQ	.0342
07/25/2006	105-12878	RC	302 Rose St	EQ	.0005	EQ	.0478
07/25/2006	105-12879	RC	803 Main St.	EQ	.0015	EQ	.0330
07/25/2006	105-12880	RC	205 6th Ave	EQ	.0009	EQ	.0698
07/25/2006	105-12881	RC	211 5th Ave	EQ	.0108	LT	.0200
07/25/2006	105-12882	RC	218 Rose St.	EQ	.0007	EQ	.0435
07/25/2006	105-12883	RC	605 Fern St.	EQ	.0006	LT	.0200
07/25/2006	105-12884	RC	714 Main St.	EQ	.0007	EQ	.0318
07/25/2006	105-12885	RC	308 5th Ave	EQ	.0041	LT	.0200
07/25/2006	105-12886	RC	232 6th Ave	EQ	.0008	EQ	.1480
07/25/2006	105-12887	RC	302 Pine St.	LT	.0005	EQ	.0225
07/25/2006	105-12888	RC	324 Pine St.	EQ	.0006	EQ	.0322
07/25/2006	105-12889	RC	322 6th Ave.	EQ	.0008	EQ	.0250
07/25/2006	105-12890	RC	322 6th Ave.	EQ	.0006	EQ	.0210
07/25/2006	105-12890	RC	322 6th Ave.	EQ	.0006	EQ	.0210
07/25/2006	105-12891	RC	524 Fern St.	EQ	.0025	EQ	.0390
07/25/2006	105-12892	RC	517 C. St.	EQ	.0007	EQ	.0388
07/25/2006	105-12893	RC	430 5th St.	LT	.0005	EQ	.0210
07/25/2006	105-12894	RC	116 5th Ave	EQ	.0006	LT	.0200
07/25/2006	105-12895	RC	130 4th St.	EQ	.0011	EQ	.0260

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

November 3, 2010

Angel Reyna, Mayor
City of Mabton
PO Box 655
Mabton, Washington 98935

Subject: Mabton, City of; PWS ID #49650R; Yakima County
Wellfield Designation – S05 Wellfield (WWF S01, S04)

Dear Mr. Reyna:

Thank you for your time and the submittal of the required documentation. I reviewed the final documents for the project, and the wellfield designation **IS APPROVED**.

S05 is the new source identification number. The designation combines the information for both S01 and S04. The depth to open interval for S04 (Well #5), will be changed to reflect the information provided in the project report submitted for source approval for S04. In addition, the Department of Health (DOH) will update the Water Facilities Inventory to show:

- S05 is the wellfield, located in Township 8 North, Range 22 East, Section 1, in Yakima County. The wellfield is a permanent source, with a depth to groundwater of 420 feet, and capacity of 950 gpm.

Source Monitoring

Bryony Stasney will provide an updated water quality monitoring report for the city. If our records are not up to date, please notify our office by letter with the correct information.

Sincerely,

Andres R. Cervantes, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

cc: Yakima County Health District
Bryony Stasney, DOH
Department of Ecology

Major Activity Report	ıd # 49650 R
Date of Inspection: September 13, 2010	**Type:** A-COMM

X	**Source Improvement / Treatment** (SI/T)	**Special Purpose Investigation** (SPI)		
	Routine Sanitary Survey (RSS)	**Significant Accomplishment** (SA)		X
Water System Name:		City of Mabton		
Contact Person:		Frank Tejerina		
County:		Yakima		

Dear Frank Tejerina:

Thank you for meeting with me about the city's current monitoring requirements, and showing me around the city facilities. I attached a copy of the pictures taken during our visit. You will see where I identified a significant deficiency in the pump motor base for S04 (Well #5).

The deficiency is the hole in the pump motor base open to the atmosphere. In most cases or a typical use for this open hole or port, are a static water level tube and a screened air vent, or if left unused fitted with a plug. In this case, it appears to be a drain for the water used to flush or lube the line shaft bearings. The use of the port for a drain is not a water quality issue in this case, but you must seal the open hole around the black poly pipe or find the appropriate plug.

Typical issues include bacterial and other chemical contaminants with these ground level or lower level holes, from small rodents and flooding.

Background: The city has two permanent sources, booster station, reservoir, and chlorination station. The wells feed into a common manifold at the booster / chlorination station, disinfected, and feed the upper section of the reservoir (WSP). The booster station meets the system demand and pressure, through the three main booster pumps, and a larger fire pump is on standby if necessary.

1. S01 and S04 are line shaft vertical turbine pumps.
2. Booster pumps consist of three centrifugal pumps for city supply, and a fourth in the event the city is fighting a large fire.
3. Reservoir is a tall stand-pipe that works as an aeration towers, with splash plates installed at the upper section.

Section's Involvement: Met with the new operator to review the sampling history and become familiar with the water system.

Outcome / Accomplishment: Clarified, the DBP (Disinfection By-Product) sampling requirements based on the total number of active treatment plants for a water system and not sources.

- In the city's case, there is only one treatment plant which will treat all four sources.

In addition, I reviewed the wells to determine if they met the minimum requirements outlined in the wellfield policy.

- Based on the IOC review, plans on file, original comments and design for S04 (Well #5), and they are under control by the city, the wells were considered a wellfield identified as S05.

Name:	**Date of Report:**

Photo-1: S04

Discharge to system

Wellhead

→ Metered

→ Vertical motor

→ Turbine pump

Taste and odor from source apparent in stream from pipe (small black poly),

→ Tapped off of pump motor base at housing for shaft bearing or gasket

Required:

- See Photo-5

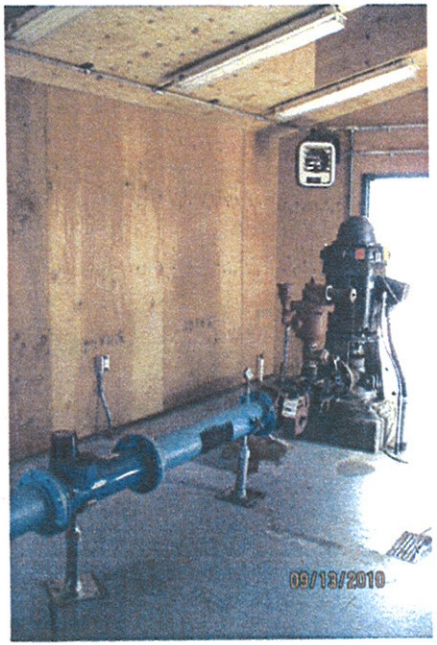


Photo-2: S04

Close-up Photo-1

Discharge to system

Wellhead

→ Air pressure relief valve

Vertical motor

→ US Motors

Photo-3: S04

Source Meter

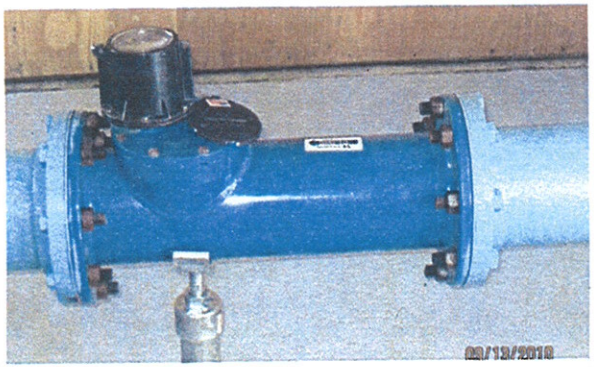


Photo-4: S04

Raw Water Sample tap

Pressure gage

Source control / Shut-off valve

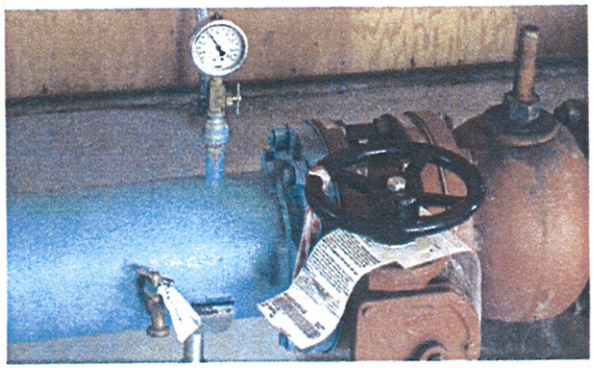


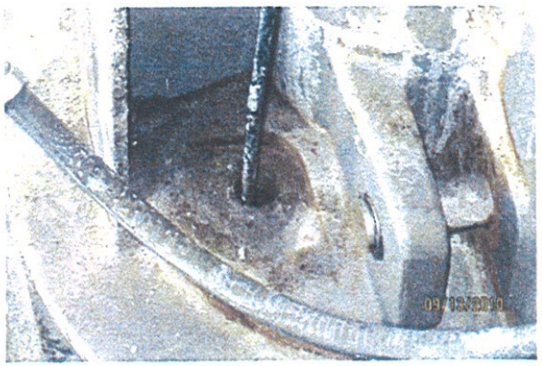
Photo-5: S04

Re-circulation line off of shaft packing \ seal

→ Through the pump motor base

→ No gasket observed

Required: Seal water tight in plug, and determine whether re-circulation line is necessary



APPENDIX F

COLIFORM MONITORING PLAN

Coliform Monitoring Plan for: City of Mabton

A. System Information

Water System Name City of Mabton	County Yakima	System I.D. Number 49650
Attach copy of current WFI	See Water System Plan	
Number of Routine Samples Required Monthly by Regulation: 2	Number of Sample Sites Needed to Represent the Distribution System: 4	

B. Routine and Repeat Sample Locations

Location/Address for <u>Routine</u> Sample Sites	Location/Address for <u>Repeat</u> Sample Sites
X1. 805 Washington St.	1-1. 805 Washington St.
	1-2. 617 Washington St.
	1-3. 1003 Monroe
	1-4. Well No. 4 - Raw Water Source
	1-5. Well No. 5 - Raw Water Source
X2. 408 B St.	2-1. 408 B St.
	2-2. 317 B St.
	2-3. 415 B St.
	2-4. Well No. 4 - Raw Water Source
	2-5. Well No. 5 - Raw Water Source
X3. 324 Pine	3-1. 324 Pine
	3-2. 307 Pine
	3-3. 202 Pine
	3-4. Well No. 4 - Raw Water Source
	3-5. Well No. 5 - Raw Water Source

Routine and Repeat Sample Locations (Cont.)

X4. 512 Fern	4-1. 512 Fern
	4-2. 509 Fern
	4-3. 528 Fern
	4-4. Well No. 4 - Raw Water Source
	4-5. Well No. 5 - Raw Water Source

C. Routine Sample Rotation Schedule

Month	Routine Site(s)	Month	Routine Site(s)
January	X2, X3	July	X2, X3
February	X1, X4	August	X1, X4
March	X2, X3	September	X2, X3
April	X1, X4	October	X1, X4
May	X2, X3	November	X2, X3
June	X1, X4	December	X1, X4

D. Month Following Unsatisfactory Samples

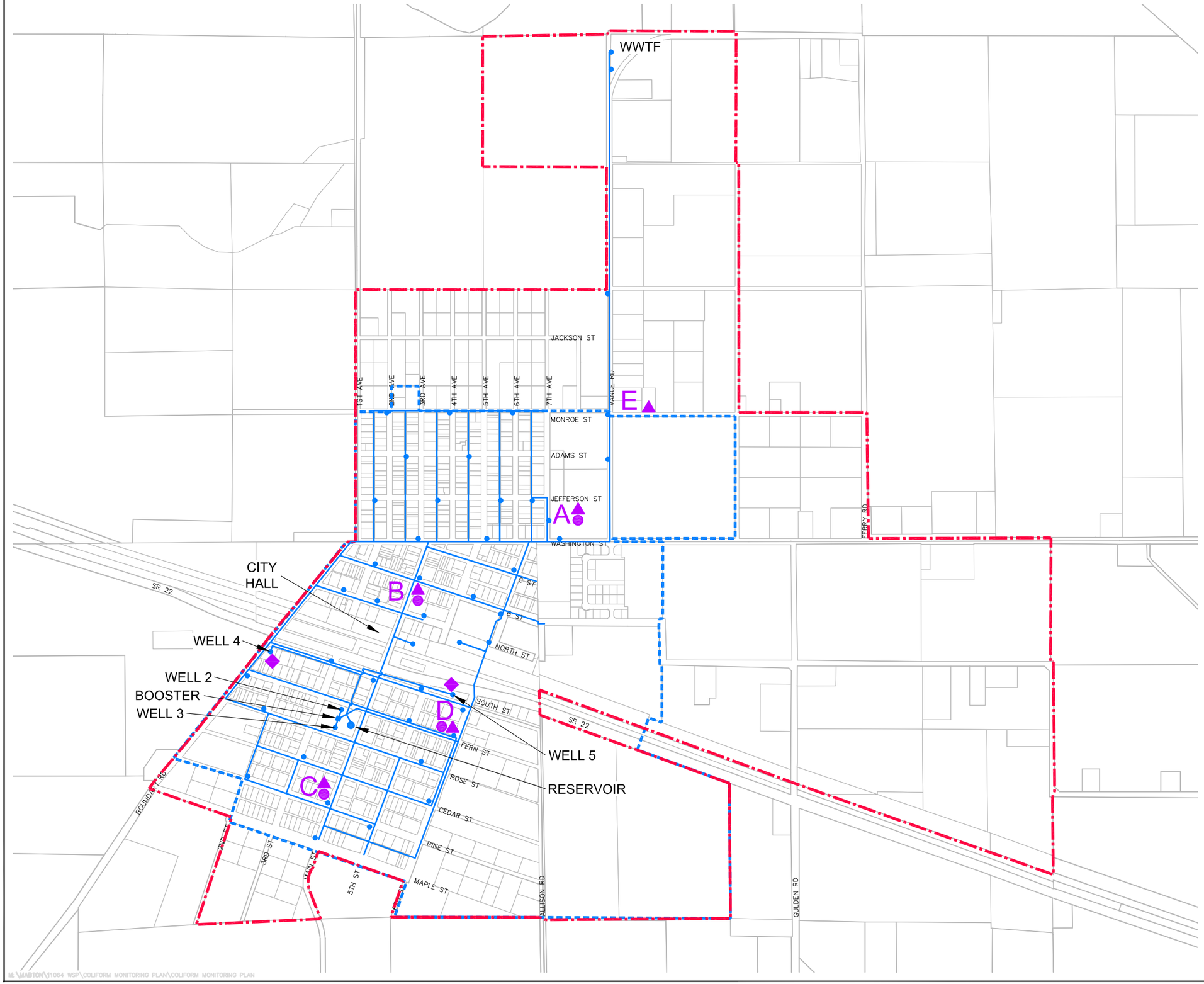
Location/Address for Routine Sample Site(s) Unsatisfactory the Previous Month	Location/Address for the five Routine Sample Sites
X1. 805 Washington St.	1. 805 Washington St. 2. 408 B St. 3. 324 Pine 4. 512 Fern 5. 1003 Monroe
X2. 408 B St.	1. 805 Washington St. 2. 408 B St. 3. 324 Pine 4. 512 Fern 5. 1003 Monroe
X3. 324 Pine	1. 805 Washington St. 2. 408 B St. 3. 324 Pine 4. 512 Fern 5. 1003 Monroe
X4. 512 Fern	1. 805 Washington St. 2. 408 B St. 3. 324 Pine 4. 512 Fern 5. 1003 Monroe

E. Preparation Information

System Name		Date Plan Completed	Dates Modified
City of Mabton		8-30-2013	
Name of Plan Preparer	**Position**		**Daytime Phone #**
Chris Morris	City of Mabton Public Works Lead		(509) 439-4077
State Reviewer		**Date Last Review**	

F. System Map

(See attached figure titled "Coliform Monitoring Plan".)



1"=1000'

CITY LIMITS

URBAN GROWTH AREA

WATER MAIN

COLIFORM MONITORING PLAN KEY

		ROUTINE SAMPLING SITE ●	REPEAT SAMPLING SITE ▲	GWR SAMPLING SITE ◆
A	805 WASHINGTON ST.	X1	X1-1	
			X2-1	
			X3-1	
B	408 B ST.	X2	X1-2	
			X2-2	
			X3-2	
C	324 PINE	X3	X1-3	
			X2-3	
			X3-3	
D	512 FERN	X4	X1-4	
			X2-4	
			X3-4	
E	1003 MONROE		X1-5	
			X2-5	
			X3-5	
F	WELL NO. 4			GWR1
G	WELL NO. 5			GWR2

CITY OF MABTON

WATER SYSTEM PLAN

COLIFORM MONITORING PLAN

Gray & Osborne, Inc.
CONSULTING ENGINEERS

APPENDIX G

WATER QUALITY EXCEEDANCES

Washington State Department of Health

Division of Environmental Health
Office of Drinking Water

Individual System View - MABTON, CITY OF - Water System Id - 49650

Compliance Actions | Operating Permits | Operators | Reports | Water Use Efficiency

General Information | Source Information | Samples | Exceedances

Type	Source	DOE Source	Collect Date	Analyte	Result Quantity	Units	Test Panel	Analyte Group	Sample Number	Lab Number
MCL1	03	37G202	7/18/2012	NITRATE-N	21.6	mg/L	NIT	IOC	14379	151
P	Distribution		7/12/2012	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	13853	151
MCL1	03	37G202	7/11/2011	NITRATE-N	24.6	mg/L	NIT	IOC	12535	151
P	Distribution		9/22/2008	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	18182	151
MCL1	03	37G202	4/9/2007	NITRATE-N	14.9	mg/L	NIT	IOC	05390	151
P	Distribution		3/28/2007	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	04720	151
P	Distribution		3/26/2007	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	04582	151
P	Distribution		3/26/2007	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	04583	151
MCL1	03	37G202	1/16/2007	NITRATE-N	10.2	mg/L	NIT	IOC	00864	105
MCL1	01	37G079	1/16/2007	NITRATE-N	10.2	mg/L	NIT	IOC	00864	105
MCL1	03	37G202	12/19/2006	NITRATE-N	16.4	mg/L	NIT	IOC	02350	151
MCL1	03	37G202	12/12/2003	GROSS ALPHA (MINUS URANIUM)	23.5	pCi/L	RAD	RAD	25159	028
P	Distribution		7/28/2003	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	00251	105
P	Distribution		6/13/2001	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	39795	014
P	Distribution		6/11/2001	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	39715	014
MCL1	03	37G202	9/12/2000	NITRATE-N	17.0	mg/L	IOC	IOC	35191	014
MCL1	03	37G202	9/12/2000	TOTAL NITRATE/NITRITE	17.0	ug/L	IOC	IOC	35191	014
MCL2	02	37G080	9/14/1998	MANGANESE	0.100	mg/L	IOC	IOC	57143	081
MCL2	02	37G080	9/13/1994	MANGANESE	0.100	mg/L	IOC	IOC	22974	081
MCL1	03	37G202	8/28/1990	NITRATE-N	12.4	mg/L	ICHEM	IOC	12684	051
MCL2	02	37G080	8/28/1990	MANGANESE	0.115	mg/L	ICHEM	IOC	12683	051
MCL2	03	37G202	12/17/1984	IRON	1.25	mg/L	ICHEM	IOC	07786	051
MCL1	03	37G202	12/17/1984	NITRATE-N	12.3	mg/L	ICHEM	IOC	07786	051
MCL1	Distribution		10/2/1984	NITRATE-N	12.5	mg/L	ICHEM	IOC	10838	052
MCL1	Distribution		10/2/1984	NITRATE-N	11.3	mg/L	ICHEM	IOC	10849	052

Records 1 - 25 of 36

Export CSV

Home Page | **Find Water Systems** | **Find Water Quality** | **Downloads/Reports**

DOH Home | Community and Environment | Drinking Water Home | Drinking Water Contacts
Access Local Health | Privacy Notice | Disclaimer/Copyright Information

Links to external resources are provided as a public service and do not imply endorsement by the Washington State Department of Health

Department of Health, Office of Drinking Water

Street Address:
243 Israel Road S.E. 2nd floor
Tumwater, WA 98501

Mail:
PO BOX 47822
Olympia, WA 98504-7822

Phone: (360) 236-3100

Send inquiries about DOH and its programs to the Health Consumer Assistance Office
Comments or questions regarding this Web site? Send email to Environmental Health Application Testing and Support or call 360-236-3113.

APPENDIX H

WELLHEAD PROTECTION PROGRAM AND UPDATE

CITY OF MABTON

WELLHEAD PROTECTION PROGRAM

(FROM THE 2005 WATER SYSTEM PLAN)

AND

WELLHEAD PROTECTION PROGRAM UPDATE

CITY OF MABTON

P.O. BOX 655
305 MAIN STREET
PHONE: (509) 894-4096 MABTON, WASHINGTON 98935 FAX (509) 894-4813

April 14, 2005

Bill Roettger
PO Box 254
Mabton, WA 98935

RE: City of Mabton
Wellhead Protection Program

Dear Mr. Roettger:

In order to protect the drinking water supply for the customers of the City of Mabton, we are developing a wellhead protection program in accordance with State requirements. As part of our wellhead protection program, we mapped the area overlying the short term recharge zone of our drinking water supply wells. This is called our wellhead protection area.

Following the mapping of the wellhead protection area, we conducted an inventory of potential sources of ground water contamination within the area. The nature of your business, and its location within our wellhead protection area, means that your activities have the potential to affect our customers' drinking water supply.

WE realize you are already careful to protect the environment as you conduct your business. We hope that informing you of your location in our wellhead protection area will result in an increase in precautions to ensure that your activities will not impact our drinking water quality.

Sincerely,

Ildia L. Jackson
City/Public Safety Administrator

CITY OF MABTON

P.O. BOX 655
305 MAIN STREET
MABTON, WASHINGTON 98935

PHONE: (509) 894-4096 FAX (509) 894-4813

May 10, 2005

Jim Hall, Director
Yakima Valley Office of Emergency
Management
128 North 2nd Street
Yakima, WA 98901

RE: City of Mabton, Wellhead Protection Program

Dear Jim,

AS part of the wellhead protection program for the city of Mabton we are hereby informing you of the findings of our wellhead protection are delineation. This is in accordance with State regulations (WA 246-290-135).

Our district has 503 service connections, and serves a population of approximately 1,900 people. Our drinking water supply may be vulnerable to contamination.

The enclosed map shows the 10 year time of travel boundaries for our wellhead protection area with a potential to reach our wells. It is therefore of utmost importance to us that all reasonable steps be taken to ensure that land use activities within this area do not contaminate our customers' drinking water supplies.

Thank you for your support in protecting our drinking water.

Sincerely,

Ildia L. Jackson
City/Public Safety Administrator

ENC

AWMN

Ground Water Contamination Susceptibility Assessment Survey Form

Version 2.1

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : City of Mabton/ Wayne J Beeman

Water system name : City of Mabton

County: Yakima

Water system number: 49650R Source number: .S01

Well depth: [redacted] 750 (ft.) (*From WFI form*)

Source name: Well #4

WA well identification tag number: ___ ___ ___-___ ___ ___

X well not tagged

Number of connections: 450-Res/43-Non-RES Population served: 1,462

Township: 08N Range: 22E

Section: 01 1/4 1/4 Section: SE/NW

Latitude/longitude (if available): 46° 12' 30'' / 119° 57' 30''

How was lat./long. determined?

___ global positioning device ___ survey ___ topographic map
X other: Spink Engineering

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 11 /06 /[redacted]87 month/day/year

last reconstruction: ___ / ___ /___ month/day/year

___ information unavailable

2) Well driller: L & L Drilling INC

P O.Box 167

Wilson Creek WA 98860

___ well driller unknown

3) Type of well:

[redacted]led: ___ rotary ___ bored ___ cable (percussion) ___ Dug

___ Other: ___ spring(s) ___ lateral collector (Ranney)

___ driven ___ jetted ___ other: _____

Additional comments: _____

4) Well report available? X YES (attach copy to form) ___ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 1,000 (gallons/min)

Source of information: Well Test Date 8/13/88

If not documented, how was pumping rate determined? _____

___ Pumping rate unknown

6) Is this source treated? [redacted] (Because water treated prior to distribution to 1st customer)

If so, what type of treatment: Gas Chlorine

___ disinfection ___ filtration ___ carbon filter ___ air stripper ___ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

7) If source is chlorinated, is a chlorine residual maintained: [redacted] YES ___ NO

Residual level: 1.4 mgl [redacted] (*At the point closest to the source.*)

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

___ < 20 ft ___ 20-50 ft ___ 50-100 ft ___ 100-200 ft [redacted] > 200 ft

___ information unavailable ('< ' *means less than;* '> ' *means greater than*)

2) Depth to ground water (static water level):

___ < 20 ft ___ 20-50 ft [redacted] 50-100 ft ___ > 100 ft

___ flowing well/spring (artesian)

How was water level determined?

[redacted] well log ___ other: _____

___ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure: N.A.

_____ psi (pounds per square inch)
or
_____ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: ___ YES X__ NO

5) Wellhead elevation (height above mean sea level): 720 (ft)

How was elevation determined? ___ topographic map ___ Drilling/Well Log ___ altimeter

[redacted] other: Spink Engineering

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

[redacted] evidence of a confining layer in well log

___ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the top of the open interval? [redacted] YES ___ NO

___ information unavailable

7) Sanitary setback:

___ < 100 ft* ___ 100-120 ft [redacted] 120-200 ft ___ > 200 ft

* if less than 100 ft describe the site conditions:

8) Wellhead construction:

[redacted] wellhead enclosed in a wellhouse

[redacted] controlled access (describe): Fenced & locked area wellhouse locked & secured

___ other uses for wellhouse (describe): Electrical Control seperated from well & pump motor

___ no wellhead control

9) Surface seal:

___ 18 ft

___ < 18 ft (no Department of Ecology approval) ('< ' *means less than*)

___ < 18 ft (Approved by Ecology, include documentation) ('< ' *means less than*)

[redacted] 18 ft ('> ' *means greater than*)

___ depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ < 10 in/yr [redacted] 25 in/yr ___ > 25 in/yr

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped [redacted] (gallons)

How was this determined?

[redacted] meter

___ estimated: ___ pumping rate (_____)

___ pump capacity (_____)

___ other: _____

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : [redacted] 360 (ft)

1 year ground water travel time : [redacted] 510 (ft)

5 year ground water travel time: [redacted] 1140 (ft)

10 year ground water travel time: 1,610 (ft)

Information available on length of screened/open interval?

[redacted] YES ___ NO

Length of screened/open interval: [redacted] 163 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? ___ YES [redacted] NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES [redacted] NO (mark and identify on map).

Comments: _____

_____

_____

_____

_____

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application	[redacted]	[redacted]	X	
stormwater injection wells				X
other injection wells				X
abandoned ground water well			[redacted]	
landfills, dumps, disposal areas				X
known hazardous materials clean-up site				X
water system(s) with known quality problems			[redacted]	
population density > 1 house/acre	[redacted]	[redacted]	[redacted]	
residences commonly have septic tanks	[redacted]	[redacted]	[redacted]	
Wastewater treatment lagoons				X
sites used for land application of waste				X

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? (*Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.*)

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	NO
Results greater than MCL	___	X
< 2 mg/liter nitrate	[redacted]	___
2–5 mg/liter nitrate	___	X
> 5 mg/liter nitrate	___	X
___ Nitrate sampling records unavailable		

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES	NO
Results greater than MCL or SAL	___	X
VOCs detected at least once	___	X
VOCs never detected	X	___
___ VOC sampling records unavailable		

C. EDB/DBCP:	YES	NO
(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)		
EDB/DBCP detected below MCL at least once	___	___
EDB/DBCP detected above MCL at least once	___	___
EDB/DBCP never detected	[redacted]	___
___ EDB/DBCP tests required but not yet completed		
___ EDB/DBCP tests not required		

D. Other SOCs (Pesticides):	YES	NO
Other SOCs detected	___	___
(pesticides and other synthetic organic chemicals)		
___ Other SOC tests performed but none detected		
(list test methods in comments		
[redacted]ther SOC tests not performed		

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: _____

_____

_____

_____

E. Bacterial contamination:

	YES	NO
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).	___	___
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.	___	___

___ Source sampling records for bacteria unavailable

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

___ YES ___ NO

Describe with references to map produced in Part IV:

_____

_____

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

___ YES ___ NO

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

___ YES ___ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

___ YES [redacted] NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs?

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time	___	X	___
6 month–1 year travel time	___	X	___
1–5 year travel time	[redacted]	___	___
5–10 year travel time	___	X	___

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time	[redacted]	___	___
1–5 year travel time		___	___
5–10 year travel time		___	___

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

Suggestions and Comments

Did you attend one of the susceptibility workshops? X YES ___ NO

Did you find it useful? X YES ___ NO

Did you seek outside assistance to complete the assessment? X YES ___ NO

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No.
Permit No. 64-29212F

(1) OWNER: Name City of Mabton Address P.O. Box 655 Mabton, WA. 98935

(2) LOCATION OF WELL: County Yakima — NW ¼ NE ¼ Sec 1 T. 8 N., R. 22 E.W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 4
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 9 7/8" (15" 0-437 ft, 12" 437-594 and [illegible] 594-740.6) inches.
Drilled 740.6 ft. Depth of completed well 740.6 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 16" Diam. from 0 ft. to 13? ft.
Threaded ☐ 12" Diam. from 418" ft. to 437.7 ft.
Welded ☒ 10" Diam. from 411 ft. to 594 ft.
8" Diam. from 585 ft. to 729 ft.

Perforations: Yes ☒ No ☐
Type of perforator used Factory
SIZE of perforations 5/32 in. by 3 in.
perforations from [redacted] ft. to [redacted] ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 19 ft.
Material used in seal Bentonite & Cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level [redacted] ft. below top of well Date 11-8-87
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Layne of Washington
Yield: gal./min. with ft. drawdown after hrs.
see attached

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
	see	attached			

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 66 Was a chemical analysis made? Yes ☒ No ☐
*See ATTACHED

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Br sand	0	20
Br sandy clay	20	48
Cemented gravel	48	50
Gravel	50	62
Br sand clay	62	67
Gravel	67	129
Basalt grey	129	179
Br broken basalt	179	191
Br clay & basalt	191	203
Green clay	203	217
Grey clay & blue	217	259
Green clay	259	271
Gray clay	271	286
Br basalt	286	297
Med. black basalt	297	304
Black basalt	304	319
Trace of red	319	320
Black basalt	320	369
Hard grey basalt	369	418
Black basalt	418	423
Grey basalt	423	438
Black broken	438	442
Grey basalt	442	444
Black basalt	444	446
Grey basalt	446	459
Black broken	459	462
Med grey basalt	462	486
Very black broken	486	503
Black broken	503	517
Grey basalt	517	593
Black broken pyrite	593	610
Black basalt	610	657
Black basalt	657	667
Black basalt	667	673
Cracks in rock, black	673	677
Hard basalt	677	689
Fractured basalt	689	710

Work started May 26 19 87 Completed Nov. 6 19 87

WELL DRILLER'S STATEMENT: (continued)

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME L & L Drilling, Inc.
(Person, firm, or corporation) (Type or print)
Address P.O. Box 167 Wilson Creek, WA. 98860

[Signed] (signature) (Well Driller)

License No. 0518 Date Nov. 11 19 87

(USE ADDITIONAL SHEETS IF NECESSARY)

Original and First Copy with ...
...ent of Ecology
... Copy — Owner's Copy
... Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. ...

Permit No. ...

(1) OWNER: Name City of Mabton Address ...

(2) LOCATION OF WELL: County ... ¼ ¼ Sec. ... T. ... N., R. ... W.M.

...ng and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) ....
New well ☐ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well ... inches.
Drilled ... ft. Depth of completed well ... ft.

(6) CONSTRUCTION DETAILS:

Casing installed: ... " Diam. from ... ft. to ... ft.
Threaded ☐ ... " Diam. from ... ft. to ... ft.
Welded ☐ ... " Diam. from ... ft. to ... ft.

Perforations: Yes ☐ No ☐
Type of perforator used ...
SIZE of perforations ... in. by ... in.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.

Screens: Yes ☐ No ☐
Manufacturer's Name ...
Type ... Model No. ...
Diam. ... Slot size ... from ... ft. to ... ft.
Diam. ... Slot size ... from ... ft. to ... ft.

Gravel packed: Yes ☐ No ☐ Size of gravel: ...
Gravel placed from ... ft. to ... ft.

Surface seal: Yes ☐ No ☐ To what depth? ... ft.
Material used in seal ...
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ... Depth of strata ...
Method of sealing strata off ...

(7) PUMP: Manufacturer's Name ...
Type: ... H.P. ...

(8) WATER LEVELS: Land-surface elevation above mean sea level ... ft.
Static level ... ft. below top of well Date ...
Artesian pressure ... lbs. per square inch Date ...
Artesian water is controlled by ... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? ...
Yield: ... gal./min. with ... ft. drawdown after ... hrs.
... " ... " ... "
... " ... " ... "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ...
Bailer test ... gal./min. with ... ft. drawdown after ... hrs.
Artesian flow ... g.p.m. Date ...
Temperature of water ... Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
PAGE 2		
Green clay	710	734
Broken basalt	734	740.6

Work started ..., 19... Completed ..., 19...

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME ...
(Person, firm, or corporation) (Type or print)

Address ...

[Signed] ...
(Well Driller)

License No. ... Date ..., 19...

(USE ADDITIONAL SHEETS IF NECESSARY)

DATE PRINTED: 02/16/94

Washington State Department of Health

Environmental Health

WATER FACILITIES INVENTORY (WFI)

City of Mabton

UPDATED

Read Instructions on back before completing

FILE COPY

MAR – 2 1994

DATE UPDATED: 02/15/94

1. SYSTEM ID NO.	2. COUNTY	GROUP	TYPE	WRIA
49650R	YAKIMA	A	COMM	37

3. SYSTEM NAME: MABTON, CITY OF

STREET ADDRESS:

P.O. BOX (IF APPLICABLE): P.O. BOX 655

CITY: MABTON STATE: WA ZIP CODE: 98935

4. OWNER'S NAME (LAST, FIRST): MABTON, CITY OF OWNER NO.: 3522

STREET ADDRESS: P.O. BOX 655

P.O. BOX (IF APPLICABLE):

CITY: MABTON STATE: WA ZIP CODE: 98935

5. SYSTEM CONTACT PERSON: WAYNE J. BEEMAN - MANAGER TITLE:

DAY TELEPHONE: 509-894-4096 EVENING TELEPHONE:

WFI COMPLETED BY: TITLE:

DAY TELEPHONE: DATE:

8. SUBMITTED FOR: [ ] NEW SYSTEM [ ] NO CHANGE [ ] REACTIVATE [ ] SYSTEM NAME CHANGE* [ ] UPDATE [ ] DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH **THIS** WFI

6. OWNERSHIP (CHECK ONE ONLY)

- [ ] PRIVATE - NON-PROFIT
- [ ] PRIVATE - FOR-PROFIT
- [X] LOCAL GOVERNMENT (COUNTY / CITY / PUD / WATER DISTRICT)
- [ ] STATE
- [ ] FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)

- [X] RESIDENTIAL
- [ ] RECREATIONAL
- [ ] BUSINESS / INDUSTRIAL / AGRICULTURAL / COMMERCIAL
- [ ] LODGING / FOOD SERVICE
- [ ] SCHOOL / DAY CARE
- [ ] OTHER (CHURCHES, ETC.)

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL CONNECTIONS: 450

10. NUMBER ACTIVE RESIDENTIAL POPULATION: 1,462

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS:

12. ENTER AVERAGE DAILY NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH. MAKE ENTRY FOR EACH MONTH

JAN.	APR.	JULY	OCT.
FEB.	MAY	AUG.	NOV.
MAR.	JUNE	SEP.	DEC.

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR? [ ] YES [X] NO

14. TOTAL NUMBER CONNECTIONS METERED: 493

15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY: 800,000 GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME (LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID # AND NAME USING FOLLOWING FORMAT: XXXXXX / NAME. EXAMPLE: 77050Y / SEATTLE)	18. SOURCE CATEGORY: WELL	WELL FIELD	SURFACE	SPRING	FARMEY / INF. GAL	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	19. USE: PERMANENT	SEASONAL	EMERGENCY	20. SOURCE METERED	21. TREATMENT: NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	22. WELL DEPTH (FEET)	23. SOURCE CAPACITY (GPM)	24. SOURCE LOCATION: 1/4 1/4 SEC	SEQ NO	TWP	RNG	SWTR EVALUATION / VOC EVALUATION
S01	WELL #4	X								X					X				740	1,000	SE/NW	01	08N	22E	
S02	WELL #2	X									X				X				1,180	775	SE/NW	01	08N	22E	
S03	WELL #3	INACTIVE 11/25/1991																							

25. MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	2	2	2	2	2	2	2	2	2	2	2	2

NO. APPROVED SERVICES (PER PLANS): 0 DATE OF LAST SANITARY SURVEY: 00 00 0000 BY DOH: [ ] LHD: [ ]

SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? [ ] YES [ ] NO GW MGMT. AREA? [ ] YES [ ] NO FOR LHD USE ONLY

EFFECTIVE DATE RETRO. CHANGES: SIGNATURE OF DOH REVIEWER: DATE:

WATER SYSTEM

WASHINGTON STATE DEPARTMENT OF HEALTH ENVIRONMENTAL HEALTH

SOURCE TREATMENT INVENTORY

DATE PRINTED: 02/16/94

THIS SOURCE TREATMENT INVENTORY IS INTENDED TO PROVIDE MORE DETAILED TREATMENT INFORMATION THAN THE WFI. ONLY SYSTEMS WHICH ROUTINELY PROVIDE TREATMENT TO ONE OR MORE SOURCES SHOULD COMPLETE THIS FORM. PLEASE COMPLETE A SEPARATE FORM FOR EACH SOURCE TREATED.

SOURCE IDENTIFICATION

DOH SOURCE NO.	SOURCE NAME
S01	WELL #4
SYSTEM ID NO.	COUNTY
49650R	YAKIMA

SYSTEM NAME: MABTON, CITY OF

STREET ADDRESS:

P.O. BOX: P.O. BOX 655

CITY: MABTON | STATE: WA | ZIP CODE: 98935

PROCESSES / OBJECTIVES

PROCESSES	A. DISINFECTION	B. PARTICULATE (TURBIDITY) REMOVAL	C. SOFTENING (HARDNESS REMOVAL)	D. IRON & MANGANESE REMOVAL	E. ORGANICS & COLOR REMOVAL	F. TASTE / ODOR CONTROL & DECHLORINATION	G. DISINFECTION BY-PRODUCTS CONTROL	H. INORGANICS REMOVAL	I. CORROSION CONTROL	J. DENTAL HEALTH
1. CHLORAMINES	X									
2. CHLORINATION, GASEOUS										
3. CHLORINATION, HYPOCHLORITE										
4. CHLORINE DIOXIDE										
5. IODINATION										
6. OZONATION										
7. ULTRAVIOLET RADIATION										
8. RAPID MIX / IN-LINE BLENDER										
9. COAGULATION										
10. FLOCCULATION										
11. SEDIMENTATION										
12. FILTRATION, CARTRIDGE										
13. FILTRATION, DIATOMACEOUS EARTH										
14. FILTRATION, GREENSAND										
15. FILTRATION, PRESSURE SAND (INCLUDES DUAL AND MULTI-MEDIA)										
16. FILTRATION, RAPID SAND (INCLUDES DUAL AND MULTI-MEDIA)										
17. FILTRATION, SLOW SAND										
18. pH ADJUSTMENT										
19. ION EXCHANGE										
20. LIME-SODA SOFTENING										
21. AERATION / AIR STRIPPING										
22. PERMANGANATE										
23. ACTIVATED CARBON, GRANULAR										
24. ACTIVATED CARBON, POWDERED										
25. REVERSE OSMOSIS										
26. DISTILLATION										
27. ELECTRODIALYSIS										
28. SEQUESTRATION										
29. CORROSION INHIBITORS - PHOSPHATES / SILICATES										
30. FLUORIDATION										
31. REDUCING AGENTS - SULFUR COMPOUNDS										
32. SLUDGE TREAMENT										
33. OTHER PROCESSES / OBJECTIVES (IDENTIFY)										
TREATMENT REQUIRED										

FORM COMPLETED BY: DATE:

TITLE: DAY TELEPHONE:

DOH REVIEWER: DATE:

National Chem Lab

103 12th Ave S.W. , Ephrata, Wa 98823
(509)754-5725

City of Mc[illegible]

NOV 2 7 [illegible]

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES

Fill out boxes numbered 1 thru 14.

Laboratory Number: 109-93015

Date Received: 09-30-93

1. Date Collected: 09-29-93

2. System Name: CITY OF MABTON

3. System Id #: 49650R

4. Group(A or B):

5. County: YAKIMA

6. Source Type:
- [ ] Surface
- [ ] Spring
- [X] Well
- [ ] Purchase

7. Sample Taken
- [X] Before Treatment
- [ ] After Treatment

8. Source Number:

9. Source Name: ELL #4

10. Collected by: WAYNE BEEMAN
Phone 509-894-4096

11. If taken after treatment, list treatment as:
- [ ] Fluoridation
- [ ] Chlorination
- [ ] Filtration
- [ ] Water Softener
- [ ] Type:
- [ ] Other:

12. If taken from distribution, indicate address:

13. Party to pay for testing: CITY OF MABTON
Signature:
Name: CITY OF MABTON
Address: P.O. BOX 655
Phone #: 509-894-4096

14. Remarks:

MABTON, WA 98935

Laboratory Report

TESTS		MCL[1]	Less Than <	Results	Units	Compliance Yes	Compliance No	Chemist Initials
Antimony	Sb	0.006			mg/L			
Arsenic P	As	0.05			mg/L			
Barium P	Ba	2.0			mg/L			
Beryllium	Be	0.004			mg/L			
Cadmium P	Cd	0.005			mg/L			
Chromium P	Cr	0.1			mg/L			
Copper	Cu	1.0[2]			mg/L			
Iron	Fe	0.3			mg/L			
Lead P	Pb	0.015			mg/L			
Manganese	Mn	0.05			mg/L			
Mercury P	Hg	0.002			mg/L			
Nickel	Ni	0.1			mg/L			
Selenium P	Se	0.05			mg/L			
Silver P	Ag	0.1			mg/L			
Sodium P	Na				mg/L			
Thallium	Tl	0.002			mg/L			
Zinc	Zn	5.0			mg/L			
Hardness					mg/L as $CaCO_3$			
Conductivity		700			µmhos/cm @25°C			
Turbidity P		1.0			NTU			
Color		15.0			Color Units			
Chloride	Cl	250			mg/L			
Cyanide	CN	0.2			mg/L			
Fluoride P	F	2.0			mg/L			
Nitrate P	as N	10.0		0.14	mg/L	X		
Nitrite	as N	1.0			mg/L			
Sulfate	SO_4	250			mg/L			
TDS		500			mg/L			

Laboratory Comments:

Charge:	Laboratory Supervisor:	Date of Report:
$20.00	Gary Miller	11-17-93

[1]MCL = Maximum Contamination Level, [2]This is the State MCL, Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper, P = Primary Standard, TDS = Total Dissolved Solids

USE HEAVY PENCIL
DO NOT WRITE IN SHADED AREAS

Department of Health
DIVISION OF LABORATORIES
1610 N.E. 150th St., Seattle WA 98155-7224
(206) 361-2898

SEE BACK FOR INSTRUCTIONS

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES

LAB NUMBER	DATE RECEIVED	DATE COLLECTED	COLLECTED BY:
5 11 21 79	8 29 90	0 / /	Telephone:

SYSTEM I.D. NO.	SYSTEM NAME	SYSTEM CLASS (circle one)	COUNTY
[illegible]	[illegible]	1 2 3 4	[illegible]

SOURCE TYPE	SOURCE NO (Well No.)	IF SOURCE IS LAKE OR STREAM ENTER NAME
___1. Surface ___3. Well ___2. Spring ___4. Purchase	04	

THIS SAMPLE WAS TAKEN	IF SAMPLE WAS DRAWN FROM DISTRIBUTION SYSTEM IT WAS COLLECTED FROM SYSTEM AT: (Address)
[x] Before Treatment [ ] After Treatment	

IF TAKEN AFTER TREATMENT WAS IT ____FILTERED ____FLUORIDATED
____CHLORINATED ____WATER SOFTENER: TYPE USED ____

REMARKS: (Water quality problems, address for additional copies, etc.)

FEES ARE CHARGED FOR CHEMICAL TESTING
A fee schedule is available from this department.

PARTY TO PAY FOR FEE FOR SERVICE TESTING

Signature (Required) (Print Full Name & Address)

Name

Street

[illegible] WA.

City Zip Code

Telephone: ( ) Area Code

LABORATORY REPORT

(DO NOT WRITE BELOW THIS LINE)

TESTS	MCL	LESS THAN	RESULTS	UNITS	Compliance YES	Compliance NO	CHEMIST INITIALS
[illegible]rsei	0.05	<	0.010	mg/l	✓		[illegible]
[illegible]arium	1.0	<	0.25	mg/l	✓		PO
[illegible]admium	0.01	<	0.002	mg/l	✓		RWO
[illegible]hromium	0.05	<	0.010	mg/l	✓		RWO
[illegible]ron	0.3	<	0.10	mg/l	✓		KK
[illegible]ead	0.05	<	0.002	mg/l	✓		[illegible]
[illegible]anganese	0.05		0.036	mg/l	✓		PO
[illegible]ercury	0.002	<	.0005	mg/l	✓		KK
[illegible]elenium	0.01	<	0.0005	mg/l	✓		RWO
[illegible]ilver	0.05	<	0.010	mg/l	✓		RWO
[illegible]odium			35	mg/l			KK
[illegible]ardness			70	mg/l AS CaCo3			HA
[illegible]onductivity	700		500	Micromhos/cm 25° C	✓		HA
[illegible]urbidity	1.0		0.1	NTU	✓		HA
[illegible]olor	15.0	<	5.	Color Units	✓		HA
[illegible]luoride	2.0		0.7	mg/l	✓		HA
[illegible]itrate	10.0	<	0.2	mg/l	✓		[illegible]
[illegible]hlo.	250		10	mg/l	✓		[illegible]
[illegible]ulfate	250			mg/l			
TDS	500			mg/l			
[illegible]opper	1.0	<	0.25	mg/l	✓		PO/PT
[illegible]inc	5.0	<	0.25	mg/l	✓		PO

DATE OF FINAL REPORT:

LABORATORY SUPERVISOR
(Name or Initials)

CHARGE: $195.00

REMARKS:

[illegible]

JP

RESULTS OF ANALYSIS

Date:

Identification	Lab Number	Test or Residue	Results	Units	MRL
			January 9, 1991		
City of Mabton Well # 4 S01	90E0300	EDB	ND	PPB	.02
		DBCP	ND		
City of Mabton Well # 2 S02	90E0301	EDB	ND	"	"
		DBCP	ND		

Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : CITY OF MABTON

Water system name : CITY OF MABTON

County: YAKIMA

Water system number: 49650R Source number: S03

Well depth: 1,004 (ft.) ~~(From WFI form)~~ WELL LOG

Source name: WELL #3

WA well identification tag number: AFL-767

_____ well not tagged

Number of connections: _____ Population served: _____

Township: 8 N Range: 22 E

Section: 1 1/4 1/4 Section: SE/NW

Latitude/longitude (if available): 46° 12' 30" / 119° 57' 25"

How was lat./long. determined?

____ global positioning device ____ survey ____ topographic map
____ other: USGS MAP

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 5 / 28/57 month/day/year

last reconstruction: ___ / ___ /___ month/day/year

_____ information unavailable

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

___ (less than) 20 ft ___ 20–50 ft X 50–100 ft ___ 100–200 ft ___ (greater than) 200 ft

___ information unavailable

2) Depth to ground water (static water level):

___ (less than) 20 ft X 20–50 ft ___ 50–100 ft ___ (greater than) 100 ft

___ flowing well/spring (artesian)

How was water level determined?

___ well log X other: MEASURED

___ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure:

N/A psi (pounds per square inch)
or
N/A feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: ___ YES X NO

5) Wellhead elevation (height above mean sea level): 718 (ft)

How was elevation determined? ___ topographic map X Drilling/Well Log ___ altimeter

___ other: _____

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

X evidence of a confining layer in well log
X no evidence of a confining layer in well log

NO CONFINING LAYER ABOVE PERFORATIONS @ 96-115'
CONFINING LAYER ABOVE 2ND SET OF PERFORATIONS AND OPEN HOLE.

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the bottom of the lowest confining layer? ___ YES ___ NO

X information unavailable

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 10,000,000 (gallons)

How was this determined?

X meter

___ estimated: ___ pumping rate (_____)

___ pump capacity (_____)

___ other: _____

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 110' (ft)

1 year ground water travel time : 160' (ft)

5 year ground water travel time: 360' (ft)

10 year ground water travel time: 510' (ft)

Information available on length of screened/open interval?

X YES ___ NO

Length of screened/open interval: >75' (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? ___ YES X NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES X NO (mark and identify on map).

Comments: _____

_____

_____

_____

_____

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES
Results greater than MCL	X
(less than) 2 mg/liter nitrate	___
2–5 mg/liter nitrate	___
(greater than) 5 mg/liter nitrate	X
Nitrate sampling records unavailable	___

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES
Results greater than MCL or SAL	___
VOCs detected at least once	X
VOC test performed but never detected	___
VOC sampling records unavailable	___

C. EDB/DBCP:	YES
(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)	
EDB/DBCP detected below MCL at least once	___
EDB/DBCP detected above MCL at least once	___
EDB/DBCP never detected	___
EDB/DBCP tests required but not yet completed	X
EDB/DBCP tests not required	___

D. Other SOCs (pesticides and other synthetic organic chemicals):	YES
Other SOCs detected	___
Other SOC tests performed but none detected *	___
Other SOC tests not performed	___

*If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: _____

_____

_____

_____

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

___ YES X NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs?

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
6 month travel time	___	X	___
6 month–1 year travel time	___	X	___
1–5 year travel time	X	___	___
5–10 year travel time	___	X	___

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
1 year travel time	___	X	___
1–5 year travel time	___	X	___
5–10 year travel time	X	[redacted]	___

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. 11644

Permit No. G 3-00027

(1) OWNER: Name TOWN OF MABTON Address Town Hall, Mabton, Wa. 98935

(2) LOCATION OF WELL: County Yakima SW ¼ NE ¼ Sec 1 T 8 N., R 22E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 3
New well ☐ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 10 inches.
Drilled 1,004 ft. Depth of completed well 1,004 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 16" Diam. from 0 ft. to 130 ft.
Threaded ☐ 12" Diam. from 120 ft. to 307 ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐
Type of perforator used ? ?
SIZE of perforations ? in. by ? in.
295 perforations from 295 ft. to 305 ft.
96 perforations from 96 ft. to 115 ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☐ No ☐ To what depth? ft.
Material used in seal
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level 718 ft.
Static level 34 ft. below top of well Date 5/28/57
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom?
Yield: 400 gal./min. with 66 ft. drawdown after 24 hrs.
" 300 " " 42 " "
" 450 " " 74 " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 5/2
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 61 Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Top Soil	0	10
Sand and Gravel	10	15
Cemented Gravel	15	28
Gravel	28	73
Blue Clay	73	76
Sand and Gravel	76	127
Black Porous Bassalt	127	132
Black Bassalt	132	167
Black Bassalt with Clay	167	180
Green and Blue Clay	180	228
Blue Sand Rock	228	240
Blue Shale	240	289
Black Bassalt with Shale	289	297
Black Porous Bassalt	297	300
Black Bassalt with Shale	300	308
Black Bassalt	308	312
Red Bassalt	312	328
Brown Basalt	328	347
Black Basalt	347	363
Dull Gray Basalt	363	380
Gray Basalt	380	400
Black Basalt	400	407
Gray Basalt with Sand	407	418
Black Basalt	418	450
Gray Basalt with Sand	450	453
Gray Basalt	453	479
Black Basalt	479	487
Black Porous Basalt	487	513
Black Basalt	513	666
Red Basalt	666	690
Black Basalt	690	757
Gray Basalt with Sand	757	860
Black Basalt with Sand	860	885
Black Basalt	885	890
Black and Gray Basalt	890	1004
Sand	1004	

Work started September 56 Completed May 57

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Dilley Drilling Co.
(Person, firm, or corporation) (Type or print)

Address 605 Meadowbrook Road Yakima, Wash. 98

[Signed] Victor E. Dilley
(Well Driller)

License No. 223 02 3587 Date Aug. 2, 1972

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

CITY OF MABTON

WELLHEAD PROTECTION PLAN UPDATE

12/07/2012

INVENTORY OF POTENTIAL SOURCES OF CONTAMINATION

The following addresses are locations of residences and businesses where there are thought to be potential sources of contamination within the Wellhead Protection Area:

Gary Anderson	22920 SR22, PO Box 188, Mabton, WA 98935
Burlington Northern Santa Fe	4920 N Railroad Ave., Pasco, WA 99301
R.E. Powell	451 N Main St., PO Box 98, Grandview, WA 98930
Mabton School District	306 Main St., PO Box 37, Mabton, WA
In and Out Repair	404 South St., PO Box 270, Mabton, WA
C & D	432 South St., PO Box 217, Mabton, WA
Cascade Custom Plants	8301 Sunnyside/Mabton Rd., PO Box 100, Mabton, WA

Wellhead Protection Notification Letters:

The Wellhead Protection letters were sent out on October 31st, 2012. The list of businesses and addresses are as follows, with physical addresses listed first and mailing addresses last.

Gary Anderson--22920 SR22 PO Box 188 Mabton, WA 98935
Burlington Northern Santa Fe--4920 N Railroad Ave. Pasco, WA 99301
R.E. Powell--451 N Main St PO Box 98 Grandview, WA 98930
Mabton School Dist.--306 Main St. PO Box 37 Mabton, WA
In and Out Repair--404 South St. PO Box 270 Mabton, WA
C & D--432 South St. PO Box 217 Mabton, WA
Cascade Custom Plants--8301 Sunnyside/Mabton Rd. PO Box 100 Mabton, WA

Sincerely,

Chris Morris
City of Mabton

Example Standard Wellhead Protection Letter sent out 10/23/2012:

October 23, 2012

M. _____
address
Mabton, WA 98935

RE: City of Mabton
Wellhead Protection Program

Dear M. _____:
In order to protect the drinking water supply for the customers of the City of Mabton, we have developed a wellhead protection program in accordance with State requirements. As part of the program, we mapped the area overlying the short term recharge zone of our drinking water supply wells. This is called our wellhead protection area.
Following the mapping of the wellhead protection area, we conducted an inventory of potential sources of groundwater contamination within that area. The nature of your business and its location within our wellhead protection area means that your activities have the potential to affect the quality of our customers' drinking water supply.
The City of Mabton realizes that you are already careful to protect the environment as you conduct your business. We hope that notifying you of your location in our wellhead protection area will result in an increase in precautions to ensure that your activities will not impact our drinking water quality. Thank you for your cooperation.

Sincerely,

Chris Morris
Public Works Lead

December 14, 2012

U.S. Environmental Protection Agency
Attn: Ground Water Unit
1200 Sixth Avenue
Seattle, WA 98101

RE: City of Mabton's Wellhead Protection Program

To Whom it may Concern,

As part of the wellhead protection program for the city of Mabton, we are hereby notifying you of the findings of our wellhead protection areas of delineation. This is in accordance with State regulations.

Our water system currently has about 630 connections that serves almost 2300 people. The Washington State Department of Health has rated our system as "susceptible," which means our drinking water supply may be vulnerable to contamination.

The enclosed map shows the 6-month and the 1,5,and 10 year time of travel boundaries for our wellhead protection area. The list of facilities or activities of concern is also enclosed. Any groundwater contamination that occurs in these boundaries has a high potential of reaching our wells. It is of utmost importance that all reasonable steps be taken to ensure that land use activities within these areas do not contaminate our customers' drinking water supply.

THANK YOU FOR YOUR SUPPORT IN PROTECTING OUR DRINKING WATER.

Sincerely,

Christopher Morris
Public Works Lead

Enclosed

December 14, 2012

Spill Response Program
Washington State Department of Ecology
Central Regional Office
15 West Yakima Avenue, Suite 200

RE: City of Mabton's Wellhead Protection Program

Dear Will,

As part of the City of Mabton's wellhead protection program, we are hereby notifying you of the findings of our wellhead protection areas of delineation. This is in accordance with WAC 246-290-135. The enclosed map shows the 6-month and the 1, 5, and 10 year time of travel boundaries for our wellhead protection area. Also enclosed is a list of facilities and/or activities of concern. If you have any questions please feel free to call me any weekday between 8am and 5pm.

Thank You,

Christopher Morris
Public Works Lead
(509)439-4077

Enclosed

APPENDIX I

WATER QUALITY MONITORING REPORT

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
OFFICE OF DRINKING WATER
PO BOX 47822 • Olympia, Washington 98504-7822
TDD Relay Service: 1-800-833-6388

March 2013

Subject: **WATER QUALITY MONITORING REPORT FOR 2013**

Dear Water System Manager/Purveyor:

Enclosed is the 2013 Water Quality Monitoring Report (WQMR) for your water system and an information sheet that explains some details about monitoring requirements. We developed the WQMR to help you keep track of the source-specific and distribution water quality monitoring requirements for your water system.

This year marks the end of a three year monitoring period. Samples scheduled on your 2013 WQMR must be collected during this year. Please pay close attention to your monitoring requirements this year.

As mentioned last year, we changed the way we are granting waivers for the 2011-2013 monitoring period. This is the first time we've updated our waiver model since we first introduced it in 1994. **We have already applied monitoring waivers to all eligible sources.** Part 4 will show your monitoring frequency with any applicable waivers. **You will not be invoiced for any of the waivers already granted on the WQMR.**

Please review your WQMR carefully. If you notice anything that doesn't look correct to you, please call your regional office to have your records updated or corrected. Most problems can be resolved with a phone call, and DOH can send you a revised WQMR.

You can find a complete list of laboratories accredited for drinking water analyses at the Washington State Department of Ecology's web site http://www.ecy.wa.gov/programs/eap/labs/search.html. Because radionuclide analyses are conducted by a limited number of labs, that list is included on the back of this letter.

For questions about your 2013 WQMR, please contact the appropriate DOH regional office staff listed below.

Eastern Regional Office	Bryony Stasney	(509) 329-2132
Northwest Regional Office	Steve Hulsman	(253) 395-6777
Southwest Regional Office	Sophia Petro	(360) 236-3046

Sincerely,

Mike Means
Manager, Water Quality Section
Office of Drinking Water

Enclosures

Information About Your 2013 Water Quality Monitoring Report (WQMR)

March2013

The Department of Health (DOH) developed the Water Quality Monitoring Report (WQMR) to help you track your system's annual water quality monitoring requirements. Information in your WQMR is specific to your system and its individual sources. The WQMR summarizes most of the microbiological and chemical sampling requirements that apply to each source (at the source, after treatment) and to the distribution system (at the tap). DOH uses the WQMR schedules for compliance and enforcement purposes, so please read it carefully.

Your system may have other monitoring requirements not listed on the WQMR. Other monitoring may be required for special investigations, most treatment systems, or special operation and maintenance situations. Your 2013 WQMR focuses on the Safe Drinking Water Act monitoring requirements that are linked to your source's water quality, history, compliance, and waiver status.

The 2013WQMR has five parts:

1. List of active sources
2. Sample collection information and calendars for 2013
3. Information on waivers
4. Summary of sampling requirements and waivers for 2011-2013 or current monitoring period
5. Special notices and regional office staff contacts

Part 1: Sources with Water Quality Monitoring Requirements

Part 1 lists your water system's active seasonal and permanent sources. This table does not list emergency, inter-tie, purchased water sources, or individual wells that make up a well field. These types of sources rarely have source-specific water quality monitoring requirements.

The table lists sources by key information from your recent Water Facilities Inventory (WFI). The table also shows the susceptibility to contamination for each source based on the susceptibility assessment on file with our department, water quality data, and information from your WFI. *All active sources require a susceptibility assessment rating as part of the wellhead and watershed protection programs. DOH will not grant chemical monitoring waivers for sources that do not have a susceptibility assessment rating.*

Part 2: Monitoring Schedule for 2013

Part 2 shows your system's sampling schedule for 2013. DOH assigns requirements to a particular month to help you stay on track and in compliance. Sampling months are assigned based in part on your past sampling dates, and also to even out the workload for laboratories. The monthly scheduling format can help you budget for monitoring expenses. If you miss collecting a sample in a particular month, collect it as soon as possible.

NOTE: 2013 is the last year in this 3-year monitoring period. Make sure you collect all the samples that are scheduled this year.

In general, there are three types of samplesbased on the location where the sample is collected:

1 - Distribution system samples - Most coliform, lead and copper, asbestos, and DBP samples are collected from representative locations in the distribution system.

2 - Finished water source samples– Most chemical samples (IOCs, VOCs, SOCs, and radionuclides) are collected from the finished water source sample tap (collected at the entry point to the distribution system).

3 - Raw water source samples -come from the tap closest to the source prior to all treatment. The raw water tap is used to collect the bacteria sample for Groundwater Rule triggered source monitoring following a positive coliform distribution sample, and may also be considered for chemical samples when a source has no treatment.

Coliform Monitoring: The coliform monitoring portion of this section lists the number of routine coliform samples required each month. This is the same as you would see on your WFI. We include it on the WQMR as a convenience. Coliform samples are usually collected from a cold water household tap within the distribution system.

If the population of your system changes during the year, your coliform monitoring requirement could change. When that happens, you will receive an updated WFI with a new coliform sampling schedule. Note: the coliform monitoring schedule on your most recent WFI provides the most accurate information.

Lead and Copper Monitoring: These samples must be collected from regularly-used, indoor kitchen or bathroom cold water faucets after the water has sat unused in the pipes for at least 6 hours but no more than 12 hours. Any faucetsthat will be used for lead and copper samples should be flushed with cold water the *evening before* taking the sample.

Disinfection By-Product (DBP) Monitoring: DBPs are scheduled on the monthly calendar for systems (except most large surface water systems) which have continuous chlorination or ozonation. These requirements will also show in part 4 for most systems.

Chemical Monitoring: Thissection lists source sampling requirements for organic and inorganic chemicals by month, source, and DOH test panel. This section doesnot list test method because more than one method may be used for any given test panel. Your lab will know the test methods for which they are accredited for drinking water. **Collect all chemical source samples as close to the source of water as possible, but *after* all treatment and before entering the distribution system.**

Part 3: Water Quality Monitoring Waivers

Part 3 provides general information about chemical monitoring waivers. Monitoring waivers can reduce or eliminate some monitoring requirements for sources with a waiver.

There are three categories of waivers:

1) ***Organic waivers*** reduce the monitoring requirements for volatile organic chemicals (VOCs) and synthetic organic chemicals (SOCs). **Organic waivers require a susceptibility assessment rating.**

2) ***Inorganic waivers*** reduce the monitoring requirements for inorganic chemicals (IOCs). **Many sources may still need to sample for individual IOC compounds (for example, arsenic) as a condition of their IOC waiver.** Any inorganic sampling requirements you have for 2013 will be listed in Part 2 of the WQMR. Eligibility for an IOC waiver depends on source-specific IOC water quality history. **The annual sampling requirement for nitrate is never waived.**

3) ***Statewide waivers*** reduce or eliminate the monitoring requirements for some test panels (as listed in Part 4). We now include insecticides as a state waiver.DOH grants statewide waivers when applicable. These waivers are granted based on water quality information gathered from across the state.

Part 4: Water Quality Monitoring Summary

Part 4 is useful for planning and budgeting for all your monitoring requirements. Part 4 provides an overview of the scope and frequency of water quality monitoring requirements for each of your sources for the 2011-2013 monitoring period. The table identifies where and how often a sample must be collected and if any waivers have been granted. Information in Part 4 relates directly to the schedule in Part 2. Sample collection frequencies are listed according to test panel (for example, IOC, VOC, Herbicide). This section identifies the specific "test panel" and sample location required. If you have received a waiver for a specific test panel, it will show here.

Part 5: DOH Staff Contacts and Special Notes

Part 5 lists the name and phone number of your DOH regional office source monitoring and DBP staff. If you have questions about your 2013WQMR or notice any inaccuracies, call your regional office to have your records updated. In most cases, errors are resolved with a phone call and a revised WQMR will be sent to you. **Part 5 also contains *Special Notes* specific to your water system or individual sources. Please look for these Special Notes.**

IMPORTANT NOTE:

We changed the way we are granting organic waivers for the 2011-2013 monitoring period. This is the first time we've updated our waiver model since we first introduced it in 1994. Many conditions have changed in the state, and our waiver model needed an update. We developed the new model using our water quality data, data from Department of Agriculture, and source susceptibility information to waive source monitoring requirements to the maximum extent possible while still protecting public health.

DOH is no longer charging a waiver fee for most monitoring waivers, including organic and inorganic waivers. We will no longer send water systems a waiver options form. **We have granted all the waivers for which your sources currently qualify.**

Water Quality Monitoring Report for the Year 2013

System: MABTON, CITY OF PWSID: 49650 R Report Date: 03/07/2013
Contact: CHRISTOPHER E. MORRIS Group: A - Comm County: YAKIMA Region: EASTERN

Part 1: List of Active Sources with Water Quality Monitoring Requirements

DOH Source#	Name	Type	Use	Susceptibility Rating
S03	Well #3 - AFL767	Well	Seasonal	High
S05	Wellfield / S01, S04	Well Field	Permanent	Low

Part 2: Sampling Schedule for the Year 2013

Coliform Sampling (Routine)	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	2	2	2	2	2	2	2	2	2	2	2	2

* Indicates the requirement is an exception from WAC 246-290.

- If the coliform (bacteriological) sampling schedule listed at the bottom of the current Water Facilities Inventory (WFI) form for your system is different from the schedule listed above, follow the schedule on the current WFI.
- Samples must be collected from representative points throughout the distribution system.
- Repeat samples are required following an unsatisfactory sample. In addition, collect a sample from each operating groundwater sourc
- A minimum of 5 routine samples are required the month following one or more unsatisfactory samples in accordance with your system's Coliform Monitoring Plan.

Lead and Copper Distribution Sampling

- Lead and copper samples must be collected from indoor faucets within the distribution system after the water has sat unused in the pipes for at least 6 hours but no more than 12 hours.
- Sample faucets should be flushed with cold water the evening prior to collecting the sample.
- Part 2 indicates the month in which samples should be collected. Part 4 indicates the total number of sample required.
- If you are required to sample annually or once every 3 years, samples must be collected between June and September.

Chlorine Residual Sampling

- Systems that use continuous chlorination must take chlorine residual measurements daily (or at a reduced frequency approved by the department), and at the same time and location as routine and repeat coliform samples.

Disinfection Byproducts Sampling

Stage 1

- Systems that use continuous chlorination treatment must collect samples for total trihalomethanes (TTHM) and for haloacetic acids (HAA5) for each chlorination treatment facility identified in your individual disinfection byproducts (DBP) monitoring plan. Collect the samples from the distribution system at the frequency and locations identified in your DBP monitoring plan.

Chemical Sampling Requirements

- Source water chemical samples must be taken from a location as near to the source as possible, but after all treatment, and before entering the distribution system.
- Nitrate, nitrite and arsenic are included as part of a complete IOC.

Washington State Department of Health

49650 R

Water Quality Monitoring Report for the Year 2013

Month	Source	Monitoring Requirement	Test Panel
January		*No source chemical sampling required this month*	
February		*No source chemical sampling required this month*	
March		*No source chemical sampling required this month*	
April		*No source chemical sampling required this month*	
May		*No source chemical sampling required this month*	
June	~~S05~~	~~HERBICIDES~~	~~HERBT~~
June	~~S05~~	~~GENERAL PESTICIDES~~	~~PEST~~
July	~~S08~~	~~HERBICIDES~~	~~HERBI~~
July	S03	IOC	IOC
July	~~S03~~ S03	~~GENERAL PESTICIDES~~ GROSS ALPHA, URANIUM RADIUM 228 & RADIUM 226	~~PEST~~ RADS
July	S03	VOLATILE ORGANIC CONTAMINANTS	VOC1
August	S05	NITRATE	NITRATE
September		HAA5	
September		TRIHALOMETHANES	THM
October		*No source chemical sampling required this month*	
November		*No source chemical sampling required this month*	
December		*No source chemical sampling required this month*	

Part 3: Waivers

- Automatically granted to all sources based on DOH assessment of source specific information, and regional and state conditions.
- Current susceptibility assessment is required for all sources to obtain a waiver. No waiver application, or fee required.
- Waivers granted for the 2011 - 2013 compliance period are listed in Part 4.

Part 4: Water Quality Monitoring Frequency

- Although waivers may be granted for your system, there may be some monitoring required as a condition of the waiver.

Monitoring Group	Test Panel	Sample Location	Schedule/Status
Asbestos	ASB	Distribution	State Waiver Thru Dec 2019
Bacteriological	Coli	Distribution	See routine sample schedule in part 2
Dioxin	Dioxin	All sources	State Waiver Thru Dec 2013
Endothall	Endo	All sources	State Waiver Thru Dec 2013
EDB and other soil fumigants	Fumigant	S03	State Waiver Thru Dec 2013
EDB and other soil fumigants	Fumigant	S05	State Waiver Thru Dec 2013
Glyphosphate	Glyphs	All sources	State Waiver Thru Dec 2013

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

49650 R

Water Quality Monitoring Report for the Year 2013

Monitoring Group	Test Panel	Sample Location	Schedule/Status
Gross Alpha	GROSS ALPHA	S03	1 sample between Jan 2011 - Dec 2013
Halo-Acetic Acids	HAA5		1 sample between Jan 2011 - Dec 2013
Herbicides	Herbs	S03	Waiver granted ~~- 1 sample between Jan 2011 - Dec 2013~~
Herbicides	Herbs	S05	~~Sample between Jan 2011 - Dec 2013~~ waived thru 2013
Insecticides	Insect	S03	Waiver granted - No sampling required thru Dec 2013
Insecticides	Insect	S05	Waiver granted - No sampling required thru Dec 2013
Inorganic Contaminants	IOC	S03	1 sample between Jan 2011 - Dec 2013
Inorganic Contaminants	IOC	S05	1 sample between Jan 2011 - Dec 2013
Lead/Copper *	LCR	Distribution	LCR 1 Set of 10 samples between Jun 2013 - Sep 2013
Nitrate *	NIT	S03	See special note on page 4.
Nitrate *	NIT	S05	Collect 1 sample every 1 year
General Pesticides	Pest1	S03	Waiver granted ~~- 1 sample between Jan 2011 - Dec 2013~~
General Pesticides	Pest1	S05	~~sample between Jan 2011 - Dec 2013~~ waived thru 2013
Diquat	Diquat	All sources	State Waiver Thru Dec 2013
Radium 228	RAD 228	S03	1 sample between Jan 2011 - Dec 2013
Total Trihalomethane	THM		1 sample between Jan 2011 - Dec 2013
Volatile Organic Contaminants	VOC	S03	1 sample between Jan 2011 - Dec 2013
Volatile Organic Contaminants	VOC	S05	1 sample between Jan 2011 - Dec 2013

** These contaminant monitoring groups do not have waiver options under the SDWA.*

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

Water Quality Monitoring Report for the Year 2013

Part 5: Regional Water Quality Monitoring Contact

Eastern Regional Office
Phone: (509) 329-2132

For further information call the Eastern Regional Office Bryony Stasney

For questions regarding Disinfection ByProducts (DBP) monitoring, contact: Russell Mau (509) 329-2116

Special Note

Nitrate: S03, collect a raw sample prior to use if needed. Call DOH prior to use.	IF S03 is needed, follow the blending monitoring schedule, and contact DOH prior to use.

For Group A Community Systems Only: Your Consumer Confidence Report, summarizing the results of your 2012 water quality monitoring requirements is due before July 1, 2013. For further information visit www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/RegulationandCompliance/CCRReports.aspx or contact the CCR Coordinator at your Regional Office.

CHRISTOPHER E. MORRIS
MABTON, CITY OF
PO BOX 656
MABTON WA 98935

APPENDIX J

WATER RIGHTS

CG4-29212C

STATE OF WASHINGTON

APPLICATION FOR CHANGE/TRANSFER OF WATER RIGHT

For filing with Ecology or with County Conservancy Boards

A MINIMUM FEE OF $10.00 PAYABLE TO ECOLOGY MUST ACCOMPANY THIS APPLICATION

(Check all that apply.)

- ☐ Change purpose(s) of use
- ☐ Add purpose(s) of use
- ☐ Change point(s) of diversion/withdrawal
- ☒ Add point(s) of diversion/withdrawal
- ☐ Change/transfer place of use
- ☐ Other (i.e. consolidation, intertie, trust water)

Explain:_____

FOR OFFICE USE ONLY

CHANGE No._____ WRIA_____

DATE ACCEPTED____/____/____ BY_____

FEE $_____ REC'D ____/____/____

CHECK No. _____

SEPA: // Exempt // Not exempt

*****IF MORE SPACE IS NEEDED, ATTACH ADDITIONAL SHEETS (PLEASE PRINT OR TYPE CLEARLY)*****

1. Applicant Information:

APPLICANT/BUSINESS NAME	PHONE NO.	FAX NO.
City of Mabton	(509)894-4096	(509)894-4813
ADDRESS P.O. Box 655		
CITY Mabton	STATE WA	ZIP CODE 98935

CONTACT NAME (IF DIFFERENT FROM ABOVE)	PHONE NO.	FAX NO.
Ildia Jackson	( ) Same	( ) Same
ADDRESS Same		
CITY Same	STATE	ZIP CODE

FOR OFFICE USE ONLY

APP. NO._____ PERMIT NO. _____ CERT. NO._____ CERT. OF CHANGE NO._____

2. Water Right Information:

WATER RIGHT OR CLAIM NUMBER	RECORDED NAME(S)
G4-29212C	City of Mabton
DO YOU OWN THE RIGHT TO BE CHANGED? ☒ YES ☐ NO IF NO, PROVIDE OWNER(S) NAME:	
HAS THE WATER BEEN PUT TO BENEFICIAL USE IN THE LAST FIVE (5) YEARS? ☒ YES ☐ NO	

Please attach copies of any documentation that demonstrates consistent, historical use of water since the right was established. Also, if you have a water system plan or conservation plan, please include a copy with your application.

3. Point(s) of Diversion/Withdrawal:

A. Existing

SOURCE	NO.	¼	¼	SEC.	TWP.	RGE.	PARCEL #	WELL TAG #
Well #4		**NW**	**NE**	**1**	**8**	**22**		**ABR606**

B. Proposed

SOURCE	NO.	¼	¼	SEC.	TWP.	RGE.	PARCEL #	WELL TAG #
Well #5		**SE**	**NE**	**1**	**8**	**22**		
DO YOU OWN THE EXISTING AND PROPOSED POINT(S) OF DIVERSION/WITHDRAWAL? EXISTING: ☒ YES ☐ NO PROPOSED: ☐ YES ☐ NO – IF NO, PROVIDE OWNER(S) NAME:								

Please include copies of all water well reports involved with this proposal. Also, if you know the distances from the nearest section corner to the above point(s) of diversion/withdrawal, please include that information in Item No. 6 (remarks) or as an attachment.

4. Purpose of Use:

A. Existing

PURPOSE OF USE	GPM or CFS	ACRE-FT/YR	PERIOD OF USE
Municipal Supply	**1,000**	**452.4**	**Continuous**

B. Proposed

PURPOSE OF USE	GPM or CFS	ACRE-FT/YR	PERIOD OF USE
Municipal Supply	**1,000**	**452.4**	**Continuous**

5. Place of Use:

A. Existing

LEGAL DESCRIPTION OF LANDS WHERE WATER IS PRESENTLY USED:							
Existing City Limits							
¼	¼	SEC.	TWP.	RGE.	COUNTY	PARCEL #	# OF ACRES

DO YOU OWN ALL THE LANDS IN THE EXISTING PLACE OF USE? ☐ YES ☒ NO – IF NO, PROVIDE OWNER(S) NAME:
City Residents, various businesses, School District and churches

B. Proposed

LEGAL DESCRIPTION OF LANDS WHERE NEW USE IS PROPOSED:							
Same							
¼	¼	SEC.	TWP.	RGE.	COUNTY	PARCEL #	# OF ACRES

DO YOU OWN ALL THE LANDS IN THE PROPOSED PLACE OF USE? ☐ YES ☒ NO – IF NO, PROVIDE OWNER(S) NAME:
City Residents, various businesses, School District and churches

Attach a detailed map of your proposed change/transfer. The map should show existing and proposed point(s) of diversion/withdrawal, place of use and any other features involved with this application. If platted property, please include a certified copy of the plat map.

Are there any ADDITIONAL WATER rights OR CLAIMS RELATED to the same property as the ONE PROPOSED FOR CHANGE/TRANSFER?
☐ YES ☒ NO – IF YES, PROVIDE THE WATER RIGHT/CLAIM NUMBER(S):

6. Remarks and Other Relevant Information:

Mabton needs a second point of withdrawal to supplement Well #4 in order to maintain adequate water service to the City residents. Well #4 production has dropped to one-half of it's original pumping capacity. Well #4 now produces 500 gpm instead of the original 1,000 gpm.

IF FOR SEASONAL OR TEMPORARY, START DATE ____/____/____ END DATE ____/____/____

7. Signatures:

I certify that the information above is true and accurate to the best of my knowledge. I understand that in order to process my application, I am hereby granting staff from the Department of Ecology or the County Conservancy Board access to the above site(s) for inspection and monitoring purposes. If assisted in the preparation of the above application, I understand that all responsibility for the accuracy of the information rests with me.

Odia Jackson — (Applicant) — 3/10/04 (Date)

Odia Jackson — (Water Right Holder) — 3/10/04 (Date)

Odia Jackson — (Land Owner(s) of Existing Place of Use) — 3/10/04 (Date)

IMPORTANT! APPLICATION FILING INFORMATION IS PROVIDED ON THE NEXT PAGE.

WE ARE RETURNING YOUR APPLICATION FOR THE FOLLOWING REASON(S):

☐ APPLICATION FEE NOT ENCLOSED ☐ MAP NOT INCLUDED or INCOMPLETE

☐ ADDITIONAL SIGNATURES REQUIRED ☐ SECTION _____ IS INCOMPLETE

☐ OTHER/EXPLANATION: _____

STAFF: _____ ***DATE:*** ____/____/____

WATER CONSERVANCY BOARD

Application for Change/Transfer
Report of Examination

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ Surface Water ☒ Ground Water

DATE APPLICATION RECEIVED	PERMIT NUMBER	CERTIFICATE NUMBER	CHANGE APPLICATION NUMBER
		G4-29212C	YAKI-04-03

NAME
City of Mabton

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
P.O. Box 655	Mabton	WA	35

Changes Proposed:

☒ Point of Diversion/Withdrawal ☒ Place of Use ☐ Purpose ☐ Temporary ☐ Other

DECISION HISTORICAL SUMMARY

Existing Use						Proposed Use					
QUANTITY, TYPE OF USE, PERIOD OF USE						QUANTITY, TYPE OF USE, PERIOD OF USE					
1,000 gpm, 452.4 ac-ft/yr, municipal , continuous						1,000 gpm, 452.4 ac-ft/yr, municipal , continuous					
Point of Diversion or Withdrawal						Point of Diversion or Withdrawal					
SOURCE			TRIBUTARY OF (IF SURFACE WATER)			SOURCE			TRIBUTARY OF (IF SURFACE WATER)		
(Type existing water source)			(Type in existing tributary)			(Type in proposed water source)			(Type in existing tributary)		
NO.	–	–	SECTION	TOWNSHIP N.	RANGE,	NO.	–	–	SECTION	TOWNSHIP N.	RANGE,
4	NW	NE	1	8	22E	4	NW	NE	1	8	22E
						5	SE	NE	1	8	22E
Place of Use						Place of Use					
LEGAL DESCRIPTION OF LANDS WHEREWATER IS PRESENTLY USED:)						LEGAL DESCRIPTION OF LANDS WHERE NEW USE IS PROPOSED					
Mabton city limits and residences outside the city limites being located south of Wandling Street, west of Allison Road, north of the Mabton West Lateral and east of Boundary Road within Section 31, T9N, R23 EWM, Section 6, T8N, R23 EWM and Section 1 T8N, R22 EWM						Water service area defined by most recent water system plan.					
NO.	–	–	SECTION	TOWNSHIP N.	RANGE,	NO.	–	–	SECTION	TOWNSHIP N.	RANGE, (

SEPA
The board has reviewed the provisions of the State Environmental Policy Act of 1971, Chapter 43.21C RCW and the SEPA rules, chapter 197-11 WAC and has determined the application is: ☒ Exempt ☐ Not exempt

Water right priority date: February 24, 1987

BOARD'S TENTATIVE DETERMINATION

MAXIMUM CUB FT/ SECOND	MAXIMUM GAL/MINUTE	MAXIMUM ACRE-FT/YR	TYPE OF USE, PERIOD OF USE				
	1,000	452.4	Municipal, continuous				
SOURCE			TRIBUTARY OF (IF SURFACE WATER)				
AT A POINT LOCATED: PARCEL NO.	–	–	SECTION	TOWNSHIP N.	RANGE	WRIA	COUNTY
	NW	NE	22E			37	Yakima
	SW	NE	22E			37	Yakima
LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED							
. Water service area defined by most recent water system plan.							
PARCEL NO.	–	–	SECTION	TOWNSHIP N.	RANGE,		

DESCRIPTION OF PROPOSED WORKS
Drill and equip Well #5.

DEVELOPMENT SCHEDULE		
BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	COMPLETE CHANGE AND PUT WATER TO FULL USE BY THIS DATE:
2005	2006	2006

REPORT

This application for an additional point of withdrawal for the City of Mabton's existing Certificate of Water Right G4-29212C was filed with the Yakima County Water Conservancy Board by the City of Mabton. Mr. Alan Rainey, P.E., L.H.G., from Spink Engineering represented the City. Spink's hydrogeological subconsultant, Kennedy-Jenks Consultants, provided an evaluation of impairment. The following report summarizes information was obtained from the applicant, individuals with relevant knowledge, review of Department of Ecology records, and analyses of pertinent data.

BACKGROUND

The City of Mabton currently has three wells, Wells #2, #3 and #4, that supply water for municipal uses. Well #2 is used only in emergency situations due to the public complaints about the hydrogen sulfide in this well.

Well #3 is high in nitrates. In 2001, the Department of Health approved mixing of Well #3 water with Well #4 water in order to keep nitrate levels below 10 mg/l (Attachment D). In 2002, the pump bowls in Well #3 had to be lowered.

Well #4 was constructed in 1987. The completed well produced 1,000 gpm. Over the next 10 years the production in the well decreased to the current production rate of 450 to 500 gpm. In order to keep the bowls submerged, they had to be lowered 60 feet in 2001.

In June and August of 2003 the water reservoir was drained when one of the well pumps failed. The City was forced to turn off all the water to the customers for several hours at a time in order to allow the reservoir to fill up for fire protection. The overall trend is that ground water levels in the area are dropping. An additional well will provide extra capacity to help keep up with peak demands. The pump for the new well will be sized to pump 500 to 550 gpm.

As indicated in the August 27, 2004 report from Kennedy-Jenks Consultants, Mabton plans to drill a new well to the same approximate depth of Well #4 in order to withdraw water from the same aquifer. Adding the new well, which would be called Well #5, is the primary purpose of this application. Well #4 is cased and sealed to approximately 420 ft, and is open between 420 ft and 740 ft. Based on geologic data for the area, this well is open to aquifers hosted by the Umatilla Member of the Saddle Mountains Basalt of the Columbia River Basalt Group.

The City also requests that the place of use be defined as "Water service area defined by most recent water system plan". This language is more consistent with the place of use allowed under the 2003 revisions to municipal water law.

INVESTIGATION

Steve Pickett of the board made a site visit on May 28, 2004. Mr. Pickett visited the proposed site for Well No. 5 and the sites of the City's existing Wells No. 2, and 4.

The applicant is requesting an additional point of withdrawal to drill and equip an additional well located in the SE1/4, NE1/4, Sec 1, T8N, R22EWM. No change in purpose of use, currently identified as municipal, is requested. No increase in "maximum gallons per minute" is requested. No change in the "maximum acre-feet per year" is requested. The effect of an additional point of withdrawal will be the withdrawal of ground water from the same water bearing strata, from another location within the current place of use.

The applicant holds two water right certificates. The first, G3-00027C, is for Wells #2 and #3. These wells were drilled and equipped prior to the enactment of the ground water code in 1945, and were brought into the state's system in 1971 at the encouragement of Ecology. The certificate has a priority date of March 3, 1971, and lists Qi = 1,400 gpm and Qa = 280 ac-ft/yr. The second certificate is the certificate for Well #4, G4-29212C. This certificate has a priority date of February 24, 1987 and lists Qi = 1,000 gpm and Qa = 452.4 ac-ft/yr. The instantaneous quantity is primary, that is, additive to the 1971 certificate. The annual quantity is described as a supplemental right, that is, the City may withdraw no more that 452.4 ac-ft/yr from the three wells identified in the two certificates.

The applicant has indicated to the board that at this time it does not intend to combine the two certificates so that the total instantaneous quantity could be withdrawn from any combination of the City's wells.

DEMONSTRATED USE

The subject water right was certificated in August 1992. For the purposes of the application for an additional point of withdrawal, the valid transferable right under Certificate of Water Right No. G4-29212C is represented by a full allotment of 1,000 gpm and 452.4 ac-ft/yr for continuous municipal supply. Water use data provided to the board indicate that the existing well has pumped up to 596 ac-ft/yr, an amount in excess of the City's annual withdrawal quantity. Although this fact does indicate that the right has been fully put to beneficial use, the City's water use exceedance is an enforcement matter that is beyond the board's purview. The applicant has indicated to the board that it is working with Ecology and Health to address this issue.

PLACE OF USE

The place of use will essentially remain unchanged, but will be reworded to the following, "Water service area defined by most recent water system plan." This language is more consistent with the 2003 municipal water law revisions to the state water code.

IMPAIRMENT ANALYSIS

The requested additional well would be located approximately 2,000 feet east of existing Well #4. A map showing the location of the proposed well relative to other City wells, as well as to other wells drilled to the same general depth as Well #4, is shown in the August 27, 2004 Kennedy-Jenks impairment analysis report. The location for the new well was selected for three reasons. First, the new well location is on land that Mabton currently owns. Second, the location was selected to help minimize interference with existing well #4. Third, sight was selected because it is feasible to connect to the system as compared to another location across town that would require a greater amount of water line and crossings of the railroad and highway.

An impairment analysis report was submitted to the applicant's consultant, Spink Engineering, by Spink's hydrogeological subconsultant, Kennedy-Jenks Consultants. The analysis, subsequently submitted the board, concluded:

"Based on our analysis of . available hydrogeologic data and information, it is our opinion that the construction and pumping of the proposed Well No. 5 (open only to Umatilla Member – lower Saddle Mountains Basalt and pumped at a rate not to exceed 1,000 gpm, or at a lesser rate in conjunction with Well No. 4 that collectively does not exceed ~~12,000~~ gpm) would not likely cause injury to existing, adjacent non-city of Mabton water wells that are open to aquifers within the lower portion of the Saddle Mountains Basalt (Umatilla Member) or in the overlying aquifers. While there is no direct, scientifically defendable data on the hydraulic properties of the aquifers within the lower portion of the Saddle Mountains Basalt in the Mabton area, observations made during the 1987 pumping test of Well No. 4 suggest that the radius of influence during pumping is limited, with the radius of influence being less than 0.14 miles."

1,000

The board concurs with the analysis of ground water impairment completed by the applicant's consultant.

The board notes that the Kennedy-Jenks evaluation does not include an evaluation of impairment to surface water. However, it is the board's experience that analyses of the effects of withdrawals from deep aquifers on surface waters of the Yakima River basin are often speculative at best, and questions whether it is necessary or useful to ask the applicant to expend additional resources for such an analysis. Because there is no change in the overall Qi and Qa,, because the additional well is located reasonably close, i.e., within 2,000 ft, to the existing well, and because the existing and proposed withdrawals are from a confined aquifer that is not in hydraulic continuity with any nearby stream, the board concludes that it is unlikely that the requested change would impair surface waters in any measurable way.

The board encourages the City to continue working with Ecology and Health on either reducing its annual withdrawals or acquiring additional water rights to mitigate the exceedance of its annual withdrawal rights. These exceedances are much more likely to have an effect on nearby wells, as well as the Yakima River basin, than the requested change.

PUBLIC INTEREST

The subject application for change/transfer is consistent with public policy objectives of the Department of Ecology to provide for efficient use of water resources and to encourage supply through transfer of existing water rights. There has been no evidence or testimony of any detrimental effects to public interest brought to the attention of the board in connection with the requested transfer.

STATE ENVIRONMENTAL ACT (SEPA)

The project described by the requested change involves a transfer 1,000 gpm of ground water, an amount less than the 2,250 gpm threshold for preparing and circulating a SEPA checklist. The requested transfer is therefore categorically exempt pursuant to WAC 197-11-800(4) of the State Environmental Policy Act.

SPECIAL CONDITIONS

The priority date, instantaneous and annual quantities, and purpose of use for Certificate of Water Right G4-29212C will not be modified.

FINDINGS

1. There is a water right eligible for an additional point of withdrawal.

2. The proposed additional point of withdrawal will not enlarge the water right.

3. The proposed additional p . of withdrawal will be for the same body of public ground water as the original certificate.

4. The proposed additional point of withdrawal would not impair existing water rights.

5. Approval of the additional point of withdrawal would not be detrimental to public interest.

RECOMMENDATIONS

The board recommends that an order approving the requested additional point of withdrawal be issued as described below.

Certificate of Water Right G4-29212C

Name City of Mabton

Priority Date February 24, 1987

Quantities and Uses 1,000 gpm, 452.4 ac-ft/yr for continuous municipal supply.

Source **Well #4** located in NW_, NE_, Sec 1, T8N, R22E, W.M. WIRA 37, Yakima County
Well #5 located in SW_, NE_, Sec 1, T8N, R22E, W.M. WIRA 37, Yakima County

PROVISIONS

The following provisions are recommended to apply to the change authorization.

1. The total instantaneous quantity that can be withdrawn from the two wells used under this right is limited to 1,000 gpm. The authorized annual quantity of 452.4 ac-ft/yr is the maximum that can be withdrawn and used under this right and ground water certificate G3-00027C.

2. Unperforated well casing shall extend and be sealed into the dense interior of the Pomona Member of the Saddle Mountain Basalt Formation and the borehole shall extend into the Mabton Interbed, allowing withdrawals from the Pomona-Umatilla interflow, the Umatilla-Umatilla interflows and the Umatilla-Mabton interflow. Such casing and sealing shall be performed in accordance with the provisions and standards of WAC Chapter 173-160-075 through Chapter 173-160-305 (Minimum Standards for Construction and Maintenance of Water Wells).

3. An approved measuring device shall be installed and maintained for the source identified herein in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC. Water use data shall be recorded weekly and shall be submitted annually to Ecology by January 31st of each calendar year typically.

4. The rule above describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition Ecology for modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed or available from Ecology as a document entitled "Water Measurement Device Installation and Operation Requirements".

5. At a minimum, the following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit

or Certificate No., so[illegible] name, annual quantity used including units, maximum rate of diversion including units, period of use, monthly meter readings including units, and peak flow including units for each month. In the future, Ecology may require additional parameters to be reported or more frequent reporting.

6. Ecology prefers web based data entry, but does accept hard copies. Ecology will provide forms and electronic data entry information.

7. Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions, but only to the extent otherwise allowed by law.

8. For the purpose of making water level measurements, installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. Installation and maintenance of an air line and gage is also required. The air line shall be constructed of 1/4 inch minimum diameter galvanized steel pipe, or comparable material if preapproved by the department. Distance from land surface to the bottom end of the air line shall be clearly posted at the well site, accurate at all times to 0.5 feet or less. The air line, access port, and all well equipment shall be installed and maintained to provide free access for accurate measurement of water levels at all times by both methods of measurement.

9. A proof inspection will be conducted prior to final certificate issuance. The certificate will reflect the extent of the project perfected within the limitations of the permit. Aspects will include as appropriate the source(s), system instantaneous capacity, beneficial uses(s), annual quantity, acreage, place of use, and satisfaction of provisions.

Signed at Yakima, Washington

This 3rd day of November, 2004

Jeff Stevens, Acting Chair
Yakima County Water Conservancy Board

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 West Yakima Avenue, Suite 200 • Yakima, Washington 98902-3452 • (509) 575-2490

December 16, 2004
CERTIFIED MAIL

City of Mabton
PO Box 655
Mabton WA 98935

RE: Water Right Change Application No. CG4-29212C (YAKI-04-03)

In accordance with RCW 90.80.080 the Department of Ecology has reviewed the Record of Decision (ROD), Report of Examination and all comments, protests, objections and other relevant information submitted by the Yakima County Water Conservancy Board (Board) for the above referenced applications for change.

The Department of Ecology has **MODIFIED** the decision of the Board as follows:

1. Certificate No. G4-29212C contains the following provision "This well shall be cased and permanently sealed into the Wanapum Formation. Such sealing and casing shall be performed in accordance with the provisions and standards of WAC Chapter 173-160-100 through Chapter 173-160-140 (Minimum Standards for Construction and Maintenance of Water Wells)".

   The City completed Well No. 4 under G4-29212C in the Saddle Mountain Basalt Formation. Based on a review of the Board record and Ecology files, Ecology has determined that the intent of the original case-and-seal provision has been satisfied and Well No. 4 is adequate as constructed. The Wanapum case-and-seal provision is DELETED.

2. The following language is ADDED to Provision No. 2 of the Board record:

   "Chip samples shall be collected and chemically analyzed for confirmation of stratigraphy. Samples shall be collected starting at the first occurrence of competent basalt/bedrock underlying the surficial sedimentary overburden and continue at ten foot intervals and at significant changes in lithology to the bottom of the well. Samples shall be labeled indicating the depth zone represented. Sample size should be approximately 8 oz (1 cup; ½ lb) each or, preferably, the equivalent of minimum 1/2 full quart size zip-lock type sample bag. Split samples shall be provided to Ecology. Number of samples and specific samples to be submitted for analysis will be determined by a qualified geologist or hydrogeologist. Chip samples should be clean and dry prior to submittal for lab analysis.

   Analysis required shall be X-Ray Fluorescence Analysis (XRF) for bulk rock and mineral analyses and include the following 27 major and trace elements (Si, Al, Ti, Fe, Mn, Ca, Mg, K, Na, P, Sc, V, Ni, Cr, Ba, Sr, Zr, Y, Rb, Nb, Ga, Cu, Zn, Pb, La, Ce, Th)."

This Order may be appealed pursuant to RCW Chapter 43.21B. Any person wishing to appeal this Order must file an appeal with the Pollution Control Hearings Board **within thirty (30) days of receipt of this Order**. Send the appeal to: Pollution Control Hearings Board, PO Box 40903, Olympia, Washington 98504-0903. At the same time, a copy of the appeal **must** be sent to: Department of Ecology, Water Resources Appeals Coordinator, PO Box 47600, Olympia, Washington 98504-7600.

If you have any questions or concerns on the above information, please call Dan Haller at the Department of Ecology at (509) 454-4255.

Sincerely,

Robert F. Barwin
Water Resources Program

DRH:gg
041216

cc: Sylvia Cervantes, Yakima County Water Conservancy Board
Janet Carlson, Ecology Eastern Regional Office
Carroll Palmer, Director, Natural Resources Division, Yakama Nation

Enclosure: Water Measurement Device Installation and Operation Requirements
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1. Article Addressed to:

CITY OF MABTON
PO BOX 655
MABTON WA 98935

WR/gg CBD-G-[illegible]212C

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X [signature] ☐ Agent ☐ Addressee

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4. Restricted Delivery? (Extra Fee) ☐ Yes

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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 West Yakima Avenue, Suite 200 • Yakima, Washington 98902-3452 • (509) 575-2490

May 14, 2007

City of Mabton
PO Box 655
Mabton WA 98935

RE: Water Right Change Application No. CG4-29212C (YAKI-04-03)

This modification order **SUPERSEDES** the previous order dated, December 16, 2004. The Department of Ecology (Ecology) received information from the City of Mabton and/or its representatives and Department of Health regarding source approval to bring a new well (well No. 5) on-line with the current water system. This new well was approved in the above referenced water right change decision, however, the ROE contained an error of the well location, therefore, this modification order will correct all references to the new well location. The original order issued in accordance with RCW 90.80.080, which modified the Yakima County Water Conservancy Board's Report of Examination (ROE) and Record of Decision (ROD).

The Department of Ecology has **MODIFIED** the decision of the Board as follows:

1. The location of Well No. 5 was incorrectly noted as being within the SW¼NE¼ of Section 1, T. 8 N., R. 22 E.W.M. in the Recommendations section and the BOARD'S TENTATIVE DETERMINATION section of the ROE. All references to the well location being within the SW¼NE¼ of Section 1, T. 8 N., R. 22 E.W.M are DELETED and REPLACED with "SE¼NE¼ of Section 1, T. 8 N., R. 22 E.W.M" consistent with the water right change application, the public notice and source approval documents.

2. Certificate No. G4-29212C contains the following provision, "This well shall be cased and permanently sealed into the Wanapum Formation. Such sealing and casing shall be performed in accordance with the provisions and standards of WAC Chapter 173-160-100 through Chapter 173-160-140 (Minimum Standards for Construction and Maintenance of Water Wells)".

   The City completed Well No. 4 under G4-29212C in the Saddle Mountain Basalt Formation. Based on a review of the Board record and Ecology files, Ecology has determined that the intent of the original case-and-seal provision has been satisfied and Well No. 4 is adequate as constructed. The Wanapum case-and-seal provision is DELETED.

3. The following language is ADDED to Provision No. 2 of the Board record:

"Chip samples shall be collected and chemically analyzed for confirmation of stratigraphy. Samples shall be collected starting at the first occurrence of competent basalt/bedrock underlying the surficial sedimentary overburden and continue at ten foot intervals and at significant changes in lithology to the bottom of the well. Samples shall be labeled indicating the depth zone represented. Sample size should be approximately 8 oz (1 cup; ½ lb) each or, preferably, the equivalent of minimum 1/2 full quart size zip-lock type sample bag. Split samples shall be provided to Ecology. Number of samples and specific samples to be submitted for analysis will be determined by a qualified geologist or hydrogeologist. Chip samples should be clean and dry prior to submittal for lab analysis.

Analysis required shall be X-Ray Fluorescence Analysis (XRF) for bulk rock and mineral analyses and include the following 27 major and trace elements (Si, Al, Ti, Fe, Mn, Ca, Mg, K, Na, P, Sc, V, Ni, Cr, Ba, Sr, Zr, Y, Rb, Nb, Ga, Cu, Zn, Pb, La, Ce, Th)."

You have the right to appeal this order to the Pollution Control Hearings Board. Pursuant to Chapter 43.21B RCW, your appeal must be filed with the Pollution Control Hearings Board, and served on the Department of Ecology, within thirty (30) days of the date of your receipt of this document.

To appeal this order, your notice of appeal must contain a copy of the Ecology order you are appealing.

Your appeal must be mailed to:
The Pollution Control Hearings Board
PO Box 40903
Lacey WA 98504-0903

OR

Hand Deliver your appeal to:
The Pollution Control Hearings Board
4224 – 6th Ave SE Rowe Six, Bldg 2
Lacey WA 98503

Your appeal must also be served on:
The Department of Ecology
Appeals Coordinator
PO Box 47608
Olympia WA 98504-7608

In addition, send a copy to:
G. Thomas Tebb, L.E.G.
Department of Ecology
15 W Yakima Ave Ste 200
Yakima WA 98902-3452

If you have any questions or concerns on the above information, please call Scott Turner at the Department of Ecology at (509) 457-7106.

Sincerely,

G. Thomas Tebb, L.E.G.
Section Manager
Water Resources Program

GTT:MMD:gg/070530

cc: Sylvia Cervantes, Yakima County Water Conservancy Board
Janet Rajala, Ecology Eastern Region Office
Philip Rigdon, Deputy Director, Natural Resources Division, Yakama Nation

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1. Article Addressed to:

CITY OF MABTON
PO BOX 655
MABTON WA 98935

WR/gg SuperYAKI-04-03 CG4-29212C

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X Cunasoo ☐ Agent ☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery 5-15-07

D. Is delivery address different from item 1? ☐ Yes
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3. Service Type
☒ Certified Mail ☐ Express Mail
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☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7004 1160 0002 6158 3338

PS Form 3811, February 2004 — Domestic Return Receipt — 102595-02-M-1540

SPINK ENGINEERING CIVIL & MUNICIPAL ENGINEERS
601 Knight Street • Richland, Washington 99352 • (509)9461-581 • Fax (509)946-6483

December 19, 2008

Melissa Downes
Water Resources Program
Department of Ecology
15 W. Yakima Ave, Suite 200
Yakima, WA 98902-3452

RE: Proof of Appropriation of Water
City of Mabton Water Right ~~CG4-2912 C~~ CG4-29212 C
Job #02-135

Dear Ms. Downes:

On behalf of the City of Mabton, I am submitting one copy of the "Proof of Appropriation of Water" form as requested. Please note the annual volume of water withdrawn exceeds the amount authorized by the water rights. Your office was informed of this situation during the review of the City's Comprehensive Water Plan. The plan was approved on September 19, 2005.

Mabton is following through with the goals outlined in the water plan. Currently, Mabton is looking for funds to purchase a water right that will provide the City with an additional 80 ac-ft annually. The City has also been in contact with a local farmer regarding possible excess annual volume for purchase. In January, Spink Engineering will begin a study on potential alternatives for irrigation water in Mabton, especially large areas within the City (parks and schools).

Please call if you have any questions or need more information.

Sincerely:

Alan Rainey

Alan Rainey, P.E.
Spink Engineering

cc: Velva Herrera, City of Mabton

02135ltr.15WRapproiation.wpd

WASHINGTON STATE DEPARTMENT OF ECOLOGY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PROOF OF APPROPRIATION OF WATER

OKV
CG 3-3-09
RECEIVED
DEC 22 2008
Reviewed by:
DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

PERMIT NUMBER	CHANGE APPROVAL NUMBER
CG4-2912 C	CG4-~~2912C~~(YAKI-04-03) CG 4-29212 C

NAME OF PERMITTEE	CONTACT NAME (IF DIFFERENT)
CITY OF MABTON	Velva Herrera

MAILING ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
P.O. Box 655	Mabton	WA	~~99352~~ 98935

PHONE NUMBER	FAX NUMBER
(509)894-4096	(509)894-4813

SOURCE(S) OF WATER	LOCATION OF SOURCE(S) NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE, (E/W)M
Well #4		NW	NE	1	8	22
Well #5		SE	NE	1	8	22

LIST ALL PURPOSES WATER IS USED FOR:
Continuous Municipal Supply

DATE WATER WAS COMPLETELY APPLIED TO BENEFICIAL USE	TIME OF YEAR WATER IS USED:	IF SEASONALLY, LIST THE START AND END DATE
Well #4: 9/20/1988 Well #5: 10/ /2007	☒ Continuous/Year round ☐ Seasonal	Start: End:

DESCRIBE HOW CONSTRUCTION AND DEVELOPMENT RELATED PROVISIONS (AS REQUIRED BY PERMIT) HAVE BEEN OR ARE TO BE MET (USE ADDITIONAL SHEET OF PAPER IF NECESSARY)
Well #4 was constructed and put into use on 9/20/1988
Well #5 was constructed and put into use on 10/ /2007

DESCRIPTION OF SPECIFIC AREA ON WHICH WATER IS BENEFICIALLY USED(USE ADDITIONAL SHEET OF PAPER IF NECESSARY)
Mabton City Limits

NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE, (E/W)M
—	—	—	—	—	—

PHYSICAL WITHDRAWAL OR DIVERSION INFORMATION

For Pump Designed Water System Information: Well #4

TYPE OF PUMP: ☐ Submersible ☒ Turbine ☐ Centrifical ☐ Other _____

MAKE	MODEL #	SERIAL #	HORSEPOWER
Layne	SAS - 95A6	—	125
MOTOR	**BHP**	**SPEED**	**RPM**
US Electric Motors	—	—	1,760

☒ Water lubricated ☐ Oil Lubricated

BOOSTER PUMP / BREAK HORSEPOWER	PRESSURE	OPEN DISCHARGE
☐ Yes ☒ No	—	☒ Yes ☐ No

PUMP DISCHARGE HEAD PRESSURE	DISCHARGE PIPE DIAMETER
30 psi	8-inch

Ecology Unique Well Identification Number ABR606 [Include a copy of the well log(s)]

PUMP SETTING (DEPTH)	STATIC WATER LEVEL	DYNAMIC (PUMPING) LEVEL
366	feet below land surface	feet below land surface

ACCESS PORT INSTALLED?	AIRLINE INSTALLED?	AIRLINE LENGTH
☒ Yes	☒ Yes	380 Ft.

For Pump Designed Water System Information: Well #5

TYPE OF PUMP: ☐ Submersible ☒ Turbine ☐ Centrifical ☐ Other _____

MAKE	MODEL #	SERIAL #	HORSEPOWER
FlowServe	10EML	—	60
MOTOR	**BHP**	**SPEED**	**RPM**
Emerson	—	—	1,780
☒ Water lubricated ☐ Oil Lubricated			
BOOSTER PUMP ☐ Yes ☒ No	**BREAK HORSEPOWER**	**PRESSURE**	**OPEN DISCHARGE** ☒ Yes ☐ No
PUMP DISCHARGE HEAD PRESSURE	**DISCHARGE PIPE DIAMETER**		
152 psi	8-inch		

Ecology Unique Well Identification Number ~~ABR606~~ [Include a copy of the well log(s)]

PUMP SETTING (DEPTH)	STATIC WATER LEVEL	DYNAMIC (PUMPING) LEVEL
259.5	76 feet below land surface	334 feet below land surface
ACCESS PORT INSTALLED?	**AIRLINE INSTALLED?**	**AIRLINE LENGTH**
☐ Yes	☐ Yes	Ft.

For Non-Pump Designed Water Systems

METHOD OF WATER DIVERSION		
N/A	**SCREEN MESH SIZE** N/A	**METHOD OF CONTROL** N/A

Ecology is an equal-opportunity employer. If you have special accommodation needs or require this publication in an alternate format, please contact Water Resources Program at (360) 407-6600 or TTY 711 or 1-800-833-6388.

USE OF WATER FOR:

1. Irrigation (Please include map of all irrigated lands):

TYPE OF SYSTEM	NUMBER OF SPRINKERS OR EMMITERS	SPRINKLER/EMMITER MAKE	MODEL & RATED DISCHARGE
N/A	—	—	—
SIZE NOZZLE/EMMITER OPENINGS	**AVERAGE PRESSURE AT SPRINKLER/EMMITER HEADS**	**NUMBER OF ACRES DEVELOPED**	**TYPE OF CROP(S)**
—	—	—	—

2. Municipal or Domestic Supply

NUMBER OF DOMESTIC UNITS CURRENTLY SERVED:	NUMBER OF DOMESTIC UNITS TO BE SERVED	POPULATION CURRENTLY SERVED
671	632	

ALSO, provide the following information, if applicable:

☒ Department of Health public water system identification number. 49650R

☒ Map of the delivery system (provide copy if water system is done)

☐ Map of present service area and lots presently using water (Non-Municipal Users).

☐ If platted property, provide copy of the file plat map or file reference number Non-Municipal Users).

☐ Other incidental beneficial uses associated with the domestic supply (Non-Municipal Users).

3. Industrial or Commercial

TYPE OF INDUSTRY OR COMMERCIAL PROCESS
Restaurants, grocery stores, gas station, nursery

If a waste discharge permit is required for the facility, include a reference to the permit number N/A

4. Other Use of Water (describe): NONE

WATER USE AND *MEASUREMENT

Well #4

IS A FLOW METER OR MEASURING DEVICE NSTALLED? ☒ Yes ☐ No	LOCATION OF METER(S) OR MEASURING DEVICE(S) In Well House #4, on discharge of well		
MAKE —	SERIAL NUMBER —	INSTALLATION DATE 06/1988	INSTALLED BY: Contractor: Walker Young
METER READING —	DATE —		

*Include copy of meter specifications

Well #5

IS A FLOW METER OR MEASURING DEVICE NSTALLED? ☒ Yes ☐ No	LOCATION OF METER(S) OR MEASURING DEVICE(S) In Well House #5, on discharge of well		
MAKE McCrometer	SERIAL NUMBER 07-03288-06	INSTALLATION DATE 6/2007	INSTALLED BY: Contractor: Fowler Construction
METER READING 52,939,700	DATE 12/18/2008		

*Include copy of meter specifications

Actual amount withdrawn or diverted from permanent system on an instantaneous and annual basis. Please include meter data or describe method used to estimate annual volume.

CUBIC FEET PER SECOND	ACRE FEET PER YEAR	GALLONS PER MINUTE	TOTAL GALLONS PER YEAR
	541	1,000	176,385,000

If the existing water use as indicated by meter data, etc., is less than you anticipate to be the full extent of the water right which you are reporting through submission of this form, please explain on a separate sheet.

I, Mayor Velva Herrera, do certify that I have completed appropriation of water under Water Right Permit or approved water right change number, CG4-2912 C. This notice and attached documents are true and accurate statements and describe and support my assertion that I have satisfied the terms of the permit/change in compliance with the law.

Permittee(s) Signature — Date: 12-18-08

State of Washington
County of Yakima

Signed and sworn to (or affirmed) before me on Dec. 18, 2008 *by* Charles A. Fleshe

(Signature) Charles A. Fleshe

(Title) Assistant Superintendent

My appointment expires 1/23/09

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. 13
Permit No. G4-29212P

(1) OWNER: Name City of Mabton Address P.O. Box 655 Mabton, WA. 98935

(2) LOCATION OF WELL: County Yakima NW ¼ NE ¼ Sec. 1 T. 8 N., R. 22 E.W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal XX Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 4
New well XX Method: Dug ☐ Bored ☐
Deepened ☐ Cable X Driven ☐
Reconditioned ☐ Rotary X Jetted ☐

(5) DIMENSIONS: Diameter of well 15" 0-437 ft, 12" 437-594 and 9 7/8" from 594-740.6 inches.
Drilled 740.6 ft. Depth of completed well 740.6 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 16" Diam. from 0 ft. to 134 ft.
Threaded ☐ 12" Diam. from +18" ft. to 437.7 ft.
Welded XX 10" Diam. from 411 ft. to 594 ft.
8" 563 729

Perforations: Yes X No ☐
Type of perforator used Factory
SIZE of perforations 5/32 in. by 3 in.
perforations from 563 ft. to 726 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No XX
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No X Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes X No ☐ To what depth? 19 ft.
Material used in seal Bentonite & Cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 67 ft. below top of well Date 11-8-87
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes X No ☐ If yes, by whom? State of Washington
Yield: gal./min. with ft. drawdown after hrs.
see attached

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
	see	attached			

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 66 Was a chemical analysis made? Yes X No ☐
*See ATTACHED

(10) WELL LOG:
Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Br sand	0	20
Br sandy clay	20	48
Cemented gravel	48	50
Gravel	50	62
Br sand clay	62	67
Gravel	67	129
Basalt grey	129	179
Br broken basalt	179	191
Br clay & basalt	191	203
Green clay	203	217
Gray clay & blue	217	259
Green clay	259	271
Gray clay	271	286
Br basalt	286	297
Med. black basalt	297	304
Black basalt	304	319
Trace of red	319	320
Black basalt	320	369
Hard grey basalt	369	418
Black basalt	418	423
Grey basalt	423	438
Black broken	438	442
Grey basalt	442	444
Black basalt	444	446
Grey basalt	446	459
Black broken	459	462
Med grey basalt	462	486
Very black broken	486	503
Black broken	503	517
Grey basalt	517	593
Black broken pyrite	593	610
Black basalt	610	667
Black basalt	667	673
Cracks in rock, black	673	677
Hard basalt	677	689
Fractured basalt	689	710

Work started May 26 1987 Completed Nov. 6 1987
(continued)

RECEIVED NOV 25 1987 DEPARTMENT OF ECOLOGY CENTRAL REGIONAL OFFICE

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME L & L Drilling, Inc.
(Person, firm, or corporation) (Type or print)
Address P.O. Box 167 Wilson Creek, WA. 98860

[Signed] Larry Webley (Well Driller)

License No. 0518 Date Nov. 11, 1987

(USE ADDITIONAL SHEETS IF NECESSARY)

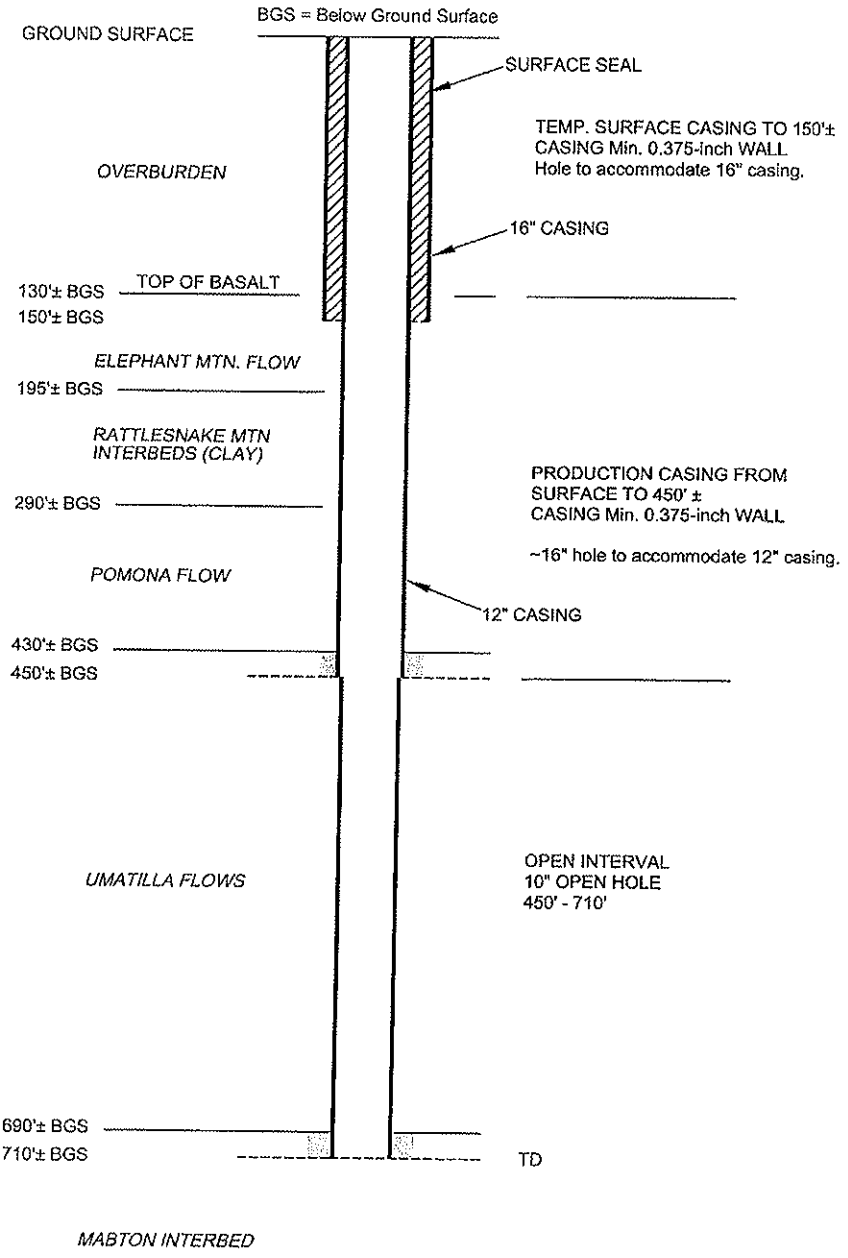
ECY 050-1-20

3

Well #4

CITY OF MABTON
WELL #5

GENERAL SCHEMATIC OF WELL DESIGN



February 1, 2006
02-135Well.dwg

Pl... se print, sign and return to the Department o... ology

Water Well Report

Original – Ecology, 1st copy – owner, 2nd copy – driller

ECOLOGY

Construction/Decommission

☐ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* W210571

Current Notice of Intent No. W210571

Unique Ecology Well ID Tag No. ALF 995

Water Right Permit No. G4-29212C

Property Owner Name City of Mabton

Well Street Address Hiway 12 + 35T

City Mabton County Yak.ma

Location SE 1/4-1/4 NE 1/4 Sec 1 Twn 8 R 22 EWM (circle one) or WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No. ____

PROPOSED USE: ☐ Domestic ☐ Industrial ☒ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other ____

TYPE OF WORK: Owner's number of well (if more than one) ____
☒ New well ☐ Reconditioned ☐ Deepened
Method: ☐ Dug ☐ Bored ☐ Driven ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 12 inches, drilled 710 ft.
Depth of completed well 710 ft.

CONSTRUCTION DETAILS
Casing Installed: ☒ Welded 16" Diam. from +2 ft. to 135 ft.
☐ Liner installed 12" Diam. from +2 ft. to 425 ft.
☐ Threaded ____" Diam. from ____ ft. to ____ ft.

Perforations: ☐ Yes ☒ No
Type of perforator used ____
SIZE of perfs ____ in. by ____ in. and no. of perfs ____ from ____ ft. to ____ ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location ____
Manufacturer's Name ____
Type ____ Model No. ____
Diam. ____ Slot size ____ from ____ ft. to ____ ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel/Filter packed: ☐ Yes ☐ No ☐ Size of gravel/sand ____
Materials placed from ____ ft. to ____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 135 ft.
Material used in seal Cement Grout
Did any strata contain unusable water? ☒ Yes ☐ No
Type of water? not allowed Depth of strata ____
Method of sealing strata off Cement grout at 425'

PUMP: Manufacturer's Name ____
Type: ____ H.P. ____

WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 76' ft. below top of well Date 06-20-06
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? Layne of Wa.
Yield: 500 gal./min. with 197 ft. drawdown after 1hr 19 Min.
Yield: 650 gal./min. with 192 ft. drawdown after 1 hrs.
Yield: 860 gal./min. with 325 ft. drawdown after 1 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1:35	401'3"	1:45	82'	2:00	81'2"
2:05	80'6"				

Date of test 06-20-06
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water 57° Was a chemical analysis made? ☒ Yes ☐ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information indicate all water encountered. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Silt Fine Sand + Gravel	0	17
Sand Stone small gravel	17	50
Silt Stone Sand gravel	50	135
Gray Basalt Hard	135	165
Brown Clay	165	180
Blue Green Clay	180	200
Blue Green Clay Stone	200	220
Ash, Clay Stone & Ash		
Ash Blue Small	220	250
amount Clay		
Blue Green Clay Stone	250	280
Sand Stone Conglomerate		
Black to Gray Basalt	280	300
Gray Basalt	300	366
Black Basalt	366	416
Gray Basalt	416	470
Brown Green Claystone	470	480
Black Broken	480	560
Gray Basalt	560	675
Black Brown Broken	675	710
Basalt claystone		
12" casing was cemented into		
Basalt at 425'		

Start Date 4-10-06 Completed Date 7-12-06

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller/Engineer/Trainee Name (Print) Robert Debuck
Driller/Engineer/Trainee Signature [signature]
Driller or trainee License No. 2820

If TRAINEE,
Driller's Licensed No. 2849T
Driller's Signature [signature]

Drilling Company Blue Star Enterprises North West
Address 2019 Butler Loop
City, State, Zip Richland WA. 99354
Contractor's Registration No. Bluesse 965 KG Date 8-28-06

Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 2/03)

WELL #5

Log of Borehole: City of Mabton Well No. 5

Also known as:

Project: City of Mabton Well No. 5 Well ID:

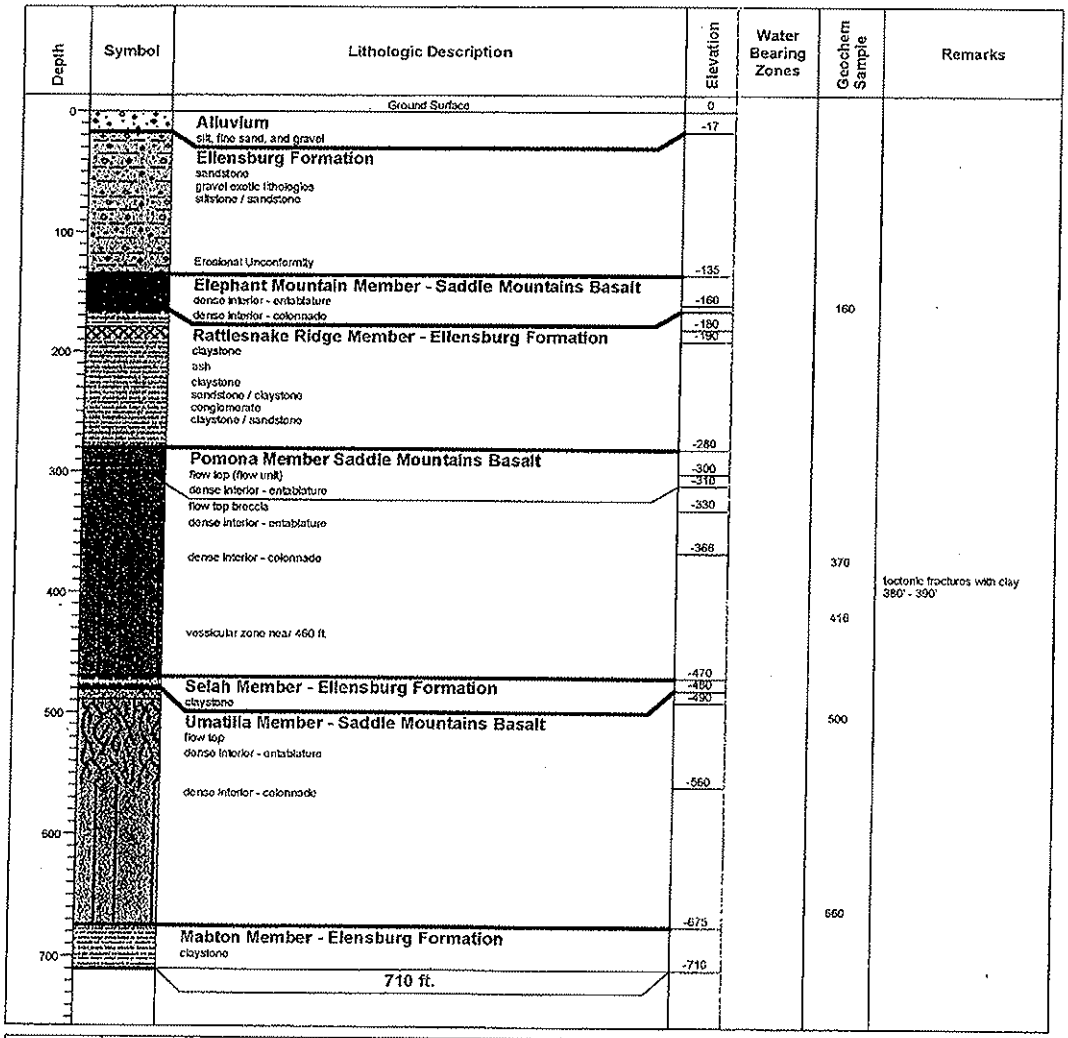
Location:

Geologist: Terry L. Tolan, LHG

Kennedy/Jenks Consultants

Engineers & Scientists

Kennedy/Jenks Consultants
1020 N. Center Parkway, Suite F
Kennewick, Washington 99336
509-734-9763
FAX 509-734-9764
www.kennedyjenks.com



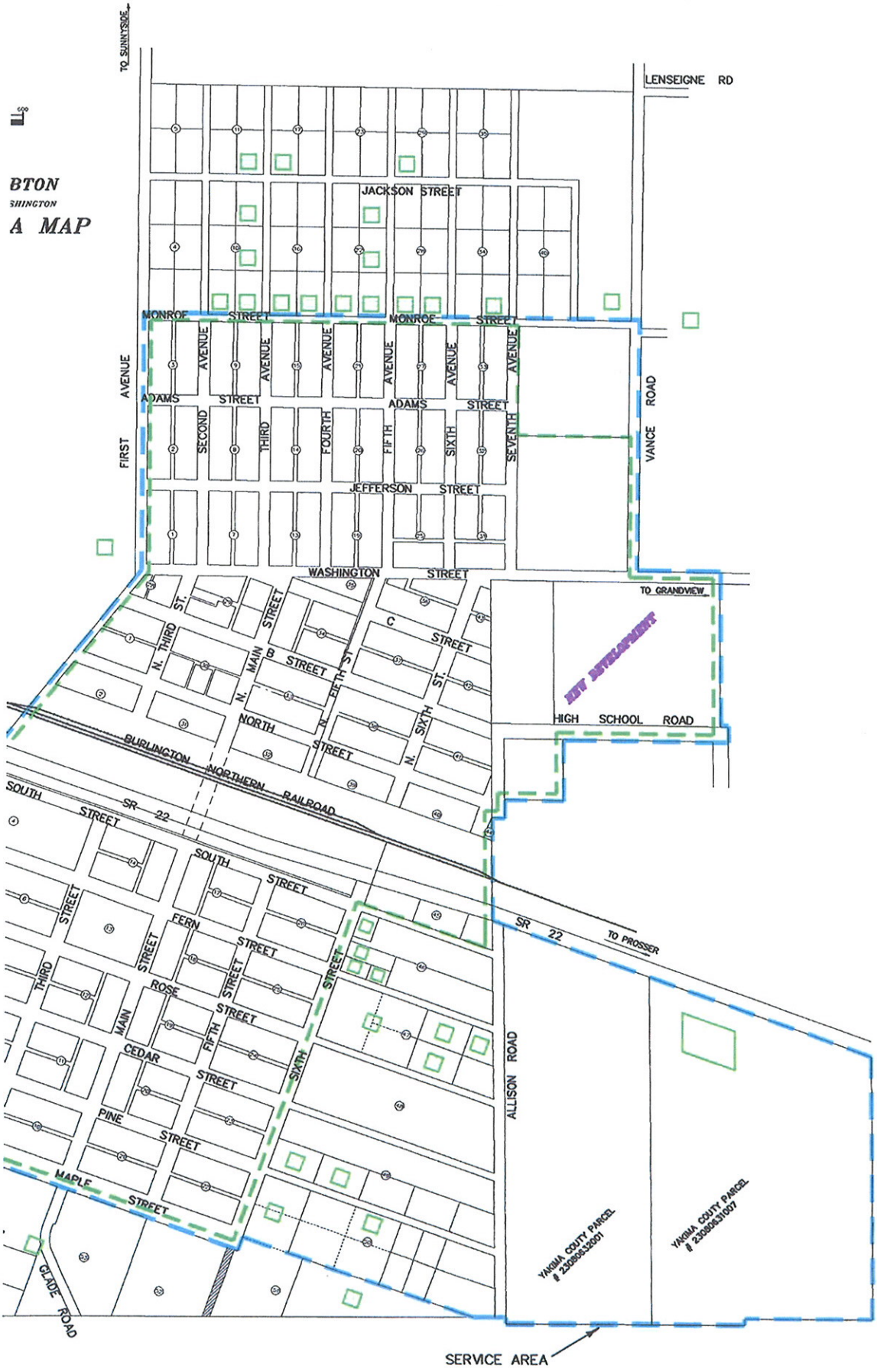
Drilled By: Blue Star Drilling

Drill Method: Air Rotary

Drill Date: May - June 2006

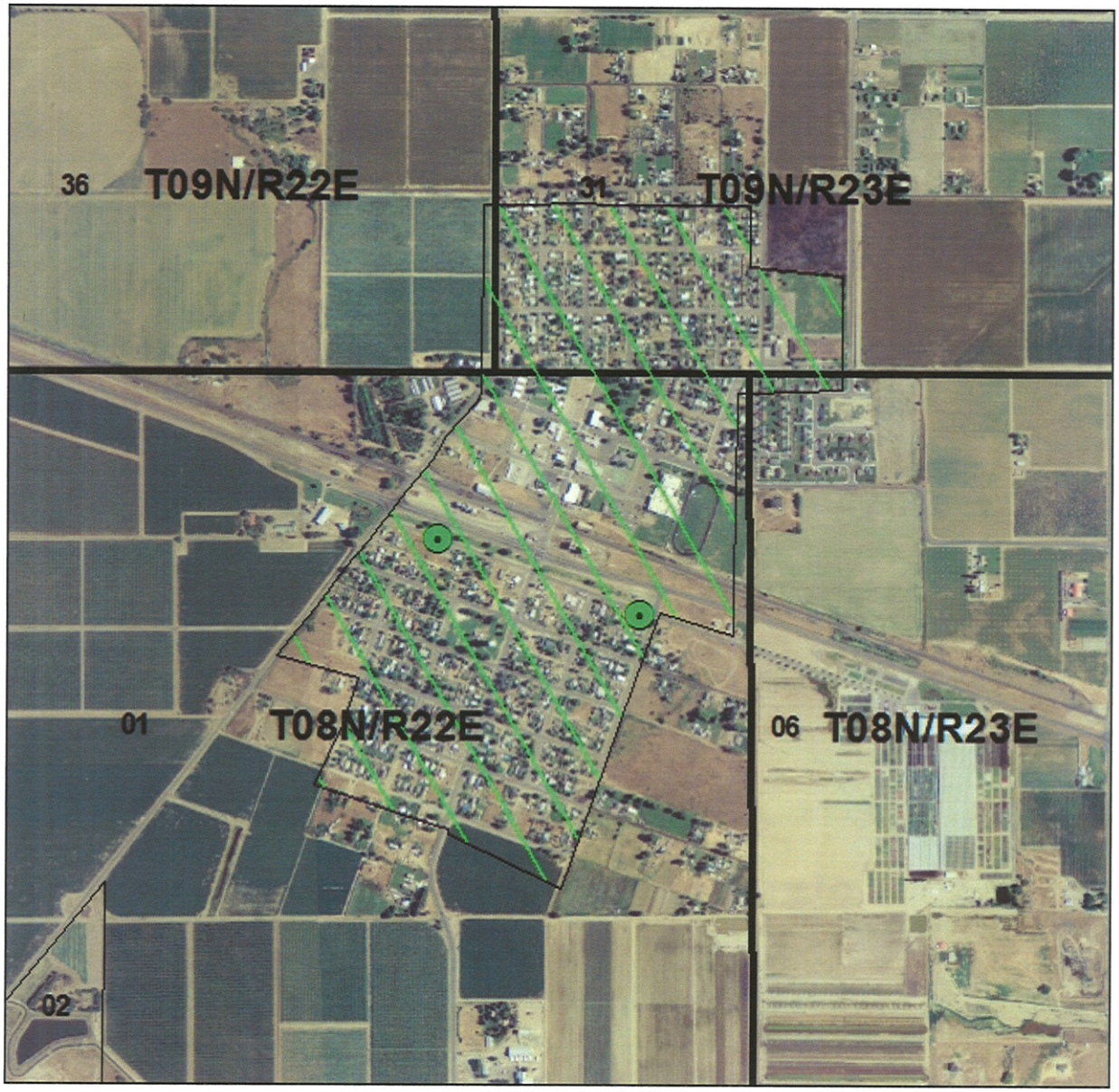
Total Depth: 710 ft.

BTON
SHINGTON
A MAP



LEGEND

Change Authorization No. CG4-29212C



0 700 1,400 2,800 Feet

N
W E
S

2011 Aerial Photo

Legend

- CG4-29212C
- CG4-29212C
- sections_2000
- township_2000

G3-00027C

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
March 3, 1971	11644	G3-000279	G3-000276

NAME
CITY OF MABTON

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
P.O. Box 655	Mabton,	Washington	98935

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown.

PUBLIC WATER TO BE APPROPRIATED

SOURCE
Two (2) wells

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	1400	280

QUANTITY, TYPE OF USE, PERIOD OF USE
To be used continuously for a municipal supply.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
No. 1: 880 feet north and 590 feet east; No. 2: 710 feet north and 530 feet east; both from center of fraction 1.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
NE¼	1	8	22 E.	37	Yakima

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)
	13	First Addition to the City of Mabton

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

City of Mabton

PROVISIONAL

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in RCW 90.03.380, 90.03.390, and 90.44.020.

This certificate of water right is specifically subject to relinquishment for nonuse of water as provided in RCW 90.14.180.

Given under my hand and the seal of this office at Yakima, *Washington, this* 3rd *day of* May, *19* 78.

Department of Ecology

by Russell K. Taylor

Russell K. Taylor, Regional Manager

ENGINEERING DATA

OK .....

1e

FOR COUNTY USE ONLY

O.F. No. 319-B-OS-6-67.

$10.00 examination fee should accompany each application.

STATE OF WASHINGTON
DEPARTMENT OF WATER RESOURCES
Division of Water Management

PRIORITY
Date 3-3-71
Time 11 AM
Accepted [illegible]

APPLICATION FOR A PERMIT

To Appropriate Public Ground Waters

OF THE STATE OF WASHINGTON

RECEIVED
MAR 3 1971
A.M. 7|8|9|10|11|12|1|2|3|4|5|6 P.M.

Application No. G. W. **11644**

I, TOWN OF MABTON
(Name of applicant)

of P. O. Box 655, Mabton , Washington 98935
(Complete post office address)

do hereby make application for a permit to appropriate the following described public ground waters of the State of Washington, subject to existing rights. This application is made under the provisions of Chap. 263 of the Session Laws of 1945, and amendments thereto of the State of Washington and subject to the rules and regulations of the Department of Water Resources.

1. *The proposed appropriation will be from* 2 wells
(Well, tunnel, infiltration trench)

located Mabton, Washington
(Give approximate distance and direction from nearest city or town)

Area ______ (Leave blank) *Sub-area* ______ (Leave blank)

Zone ______ (Leave blank)

Applicant's name or number of well or other works, if any City of Mabton

2. *The quantity of water which applicant intends to withdraw for beneficial use is* ~~1400 - 300~~ 1400 total use

gallons per minute; ______ *acre feet per year.*

3. *The use or uses to which water is to be applied*

~~Domestic~~, Municipal supply
(Domestic supply, irrigation, municipal, manufacturing, industrial use, etc.)

4. *The time during which water will be required each year* ~~continous~~ continuously

5. *Location of well or other works for withdrawal of water: In county of* Yakima
#1 North 880 feet, East 590 feet, from center sec 1, T8N, R22EWM
(a) #2 North 710 feet, East 530 feet, both from center sec 1, T8N, [illegible]
(Give distance and bearing from nearest corner of section or legal subdivision)

being within the NE 1/4 (Give smallest legal subdivision) *of Sec.* 1 *, Twp.* 8 *N., Rge.* 22E (E. or W.)

or ~~*(b) If within limits of recorded platted property, town or city:*~~ *Lot* ______ *, Block* 13 *,*

of The plat of First Addition to the Town of Mabton
(Give name of plat or addition) (If within town or city, give name)

(c) Show this location on accompanying section plat. Other adequate maps or drawings will be acceptable.

6. DESCRIPTION OF WORKS:

(a) Well will be drilled (Dug or drilled) and have a diameter of 8" - 6" inches and an estimated depth of 1100 - 1000 ft.

(b) Tunnels or trenches to be described: (Attach additional sheets if needed for full description.)

(c) Distribution system to be described:

City System

(d) If pumps are to be used, give size and type:

(e) Give capacity and type of motor or engine to be used:

(f) If the location of the well, tunnel, or other works is less than one-fourth mile from a natural stream or stream channel, give the distance to the nearest point on each of such channels and the difference in elevation between the stream bed and the ground surface at the source of development:

(g) Ownership of each existing well or other works from which ground water is withdrawn within a radius of one-quarter mile and the distance and direction from well or other works being reported herein:

(Name)	(Direction)	(Distance)
(Name)	(Direction)	(Distance)
(Name)	(Direction)	(Distance)

SUPPLY THE FOLLOWING INFORMATION ACCORDING TO USE PROPOSED:

7. For Municipal Supply: To supply the city, town, or community of Mabton, in the county of Yakim, having a present population of 958, and an estimated population of ....., in 19.....

8. For Irrigation: Number of acres to be irrigated ..... acres.

9. Legal Description of Property on which water is to be used for all purposes other than municipal supply:

(Copy legal description from deed)
(If more space is required, attach separate sheet)

~~Block 3 City Plat~~ ~~AREA SERVED BY THE~~ CITY OF MABTON Add 5/6/36

(On accompanying plat show location of the existing wells or works)

10. What interest do you have in the above described property? Owner
(Owner, lessee, contract buyer, etc.)

11. Do you have any other water rights appurtenant to the above described property? no

If so, from what source?

12. Construction work will begin on or before 1935 - 1955

13. Construction work will be completed on or before 1936 - 1956

14. Water will be put to complete beneficial use on or before 1936 - 1956

Town of Mabton
Yvonne Dilbaugh, City Clerk-Treasurer
(Signature of applicant)

15. Name and address of owner of land on which well or works are located:

Town of Mabton (Name) — P.O. Box 655, Mabton, Wash. (Address)

Yvonne Dilbaugh, City Clerk-Treasurer
(Signature of legal landowner)

Signed in the presence of us as witnesses:

Amy O Cooley (Name) — 518 S 3rd (Address of witness)

Annie Van Houten (Name) — Box 207 (Address of witness)

STATE OF WASHINGTON, COUNTY OF THURSTON. } ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for correction or completion as follows:

In order to retain its priority, this application must be returned to the Department of Water Resources, with corrections, on or before ....., 19.....

WITNESS my hand this .....day of....., 19.....

Division of Water Management.
Department of Water Resources.

DIRECTIONS FOR PREPARING APPLICATIONS

1. Initial examination fee of $10.00 should accompany each application. If additional fee is required, you will be notified.

2. Write plainly in ink or use typewriter.

3. Read carefully all questions. Answer only those that apply to your project.

4. Under Question 2 estimate in gallons per minute and acre-feet per year the quantity of water that will be required for your proposed use.

5. A map showing the location of well or other works and place of use, must be made on the enclosed section plat. If for irrigation, show the approximate area to be irrigated. Show also location of other existing wells or other works for withdrawing ground water within a radius of one-quarter mile.

6. In answering Question 5, give the distance and direction of location of well or other construction works for withdrawal of water from the nearest 40-acre corner or other legal subdivision, as

"320 feet north and 1100 feet east from the southwest corner of Sec. 1, Twp. 13 N., Rge. 2 E.W.M.," or

"North 36° 20' east 500 feet from the northeast corner of NW¼ of SW¼ of Sec. 33, Twp. 12 N., Rge. 3 E.W.M.," or

If within the limits of incorporated town or city:

"Lot 4, Block 6 of Churchill's Addition to the City of Spokane, Washington."

7. Be sure to give on the map brief directions for driving to the location of the well or other works from some town or easily located point on a state highway. This is for our convenience in making the examination.

8. If you have been using ground water since before June 7, 1945, it will not be necessary to secure a permit from the state for this purpose.

9. Sign application on the line indicated under Section 14.

SCHEDULE OF FEES DUE IN CONNECTION WITH OBTAINING GROUND WATER RIGHTS

Examination Fees: There is a minimum fee of $10.00 for each application received. This fee covers all withdrawals up to and including 2250 gallons per minute. There is an additional examination fee of $2.00 for each 450 gallons per minute, or fraction thereof, over 2250 gallons per minute.

Fees for Filing and Recording Permits: There is a minimum fee of $5.00 for filing and recording a permit.

For irrigation, permit fees are as follows:

40¢ per acre, up to and including 100 acres;

20¢ per acre over 100 acres to 1,000 acres, inclusive;

10¢ per acre over 1,000 acres.

Permit fee for other uses: Twice the examination fee.

Fee for filing and recording certificate: There is a minimum fee of $5.00.

11/8/22

899 4096

REPORT OF INSPECTION

Proof of Appropriation

Application No 11644 Permit No G30002? Date of Inspection 3/23/78 Telecom

Name Town of Mabton Address ______ County Yakima

Advertised Legal Sub. Blk 13 Plat of First add'n to Mabton

Section 1, Township 8 North, Range Yakima 22 W.M.

Status of Development

Terms of Permit		Reported in Proof	As Developed
Source	2 wells		2 wells
Quantity	1400 GPM		1400 GPM
Point of Diversion	Same as permit		
Use	municipal supply	"	"
Acreage	—		
System			
Fish and Game Provisions			
Place of Use	Town of Mabton	Same as permit	

Inspected by: [signature]
Telecom

Remarks and Recommendations:

#2 75 HP Turbin 1000 gpm
#1 40 HP Turbin 400 gpm
As reported by superintendent on 3/23/78

ok for cert

Report of Examination on Ground Water

Received date March 3, 1971 Date of exam. August 18, 1971 Appl. No. 11644

Name Town of Mabton Address P.O. Box 635, Mabton, WA 98935

Type of works Two (2) wells Dimensions 8" x 1100' and 6" x 1004'

Progress of works Completed

Quantity applied for 1400 g.p.m. acre-feet per year

Legal sub Block 13 / Sec. 1 Twp. 8 N. Rge. 22 E. County Yakima
of the plat of First Addition to the Town of Mabton

Use Municipal supply

Irrigation-acreage: Present Planned Feasible

Municipal: Population 950 as of Present

Industrial

Time pump will be operated Continuously

Other water rights appurtenant to this land

Proximity to existing works, springs, wells, or streams

Area Sub-area Zone

RECOMMENDATIONS

Approved for 1400 g.p.m. 280 acre-feet per year, subject to existing water rights. (1 acre-foot 325,850 gallons.)

The field investigation for this application was made by A. H. King, Watermaster, Eastern Washington Region.

"The installation of an access port as described in attached Ground Water Bulletin No. 1 shall be required prior to issuance of final certificate of water right. The applicant may, for his own convenience, wish to install an airline and gage in addition to the access port."

"A suitable measuring device shall be installed and maintained in accordance with WAC 508-64-020 through WAC 508-64-040." (Installation, operation and maintenance requirements attached hereto.)

Use of the waters to be appropriated under this application will be for a public water supply. State Board of Health rules require every owner of a public water supply to obtain written approval from the Assistant Secretary, Division of Health prior to any new construction or alterations of a public water supply. The applicant is advised to contact the Washington State Division of Health, Public Health Bldg. No. 4, Thurston Airdustrial Center, Olympia, with regard to the need for compliance.

The annual withdrawal rate, 280 acre-feet, is based upon a per capita demand of 250 gallons per person per day and a population of 1000.

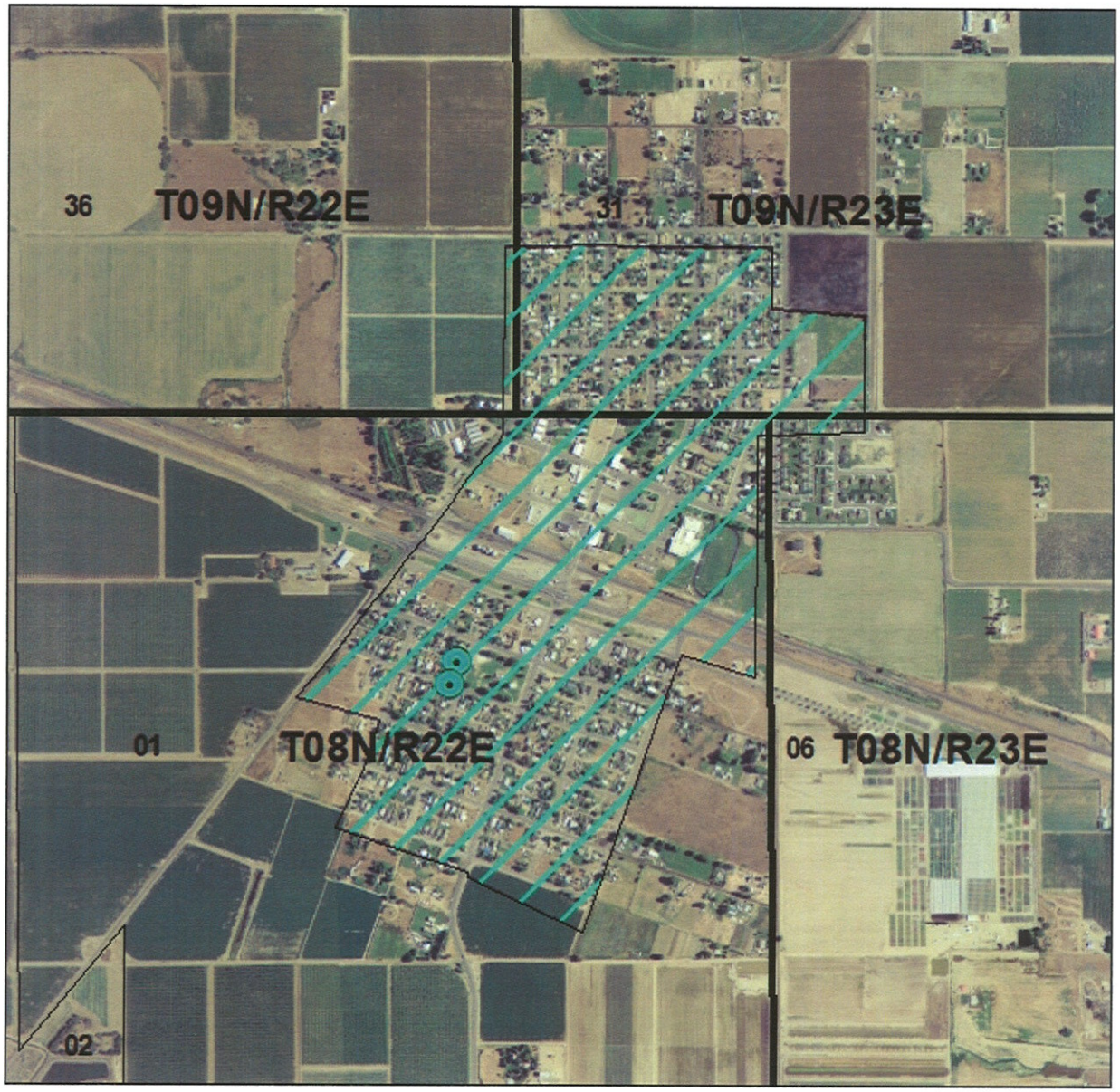
Applicant claims that these wells have been in use since the mid 1930's and may enjoy a vested right for the usage of water. Therefore, in order to prevent the establishment of duplicatory rights, permit shall be conditioned by the following: "The total annual withdrawal shall be limited to 280 acre-feet, less any amount utilized under existing rights."

Additionally, the permit when issued shall carry the following provision: "Nothing in this permit shall be construed as excusing the permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations including those administered by local agencies under the Shoreline Management Act of 1971."

Signed at Olympia, Washington,
this 24 day of Oct., 1972.

WILLIAM R. SMITH, Geologist
Department of Ecology

Ground Water Certifcate No. G3-00027C



0 700 1,400 2,800 Feet

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W E
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2011 Aerial Photo

Legend

- G3-00027C
- G3-00027C
- sections_2000
- township_2000

G3-00381C

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

[ ]

[X]

CERTIFICATE NUMBER	PERMIT NUMBER	APPLICATION NUMBER	PRIORITY DATE
G3-00381C	G3-00381P	11937	June 2, 1971

NAME
TOWN OF MABTON

P. O. Box 635 Mabton, Washington 989

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of ... of a right ... and under and spe... ... Department of Ecology, and that said righ... ... State of Washington, and is here... ...

PUBLIC WATER TO BE APPROPRIATED

a well

	15	2

15 gallons per minute; 2 acre-feet per year for continuous municipal supply

LOCATION OF DIVERSION/WITHDRAWAL

200 feet south and 20 feet east from the north quarter of Sec. 31

NW$\frac{1}{4}$NE$\frac{1}{4}$	31	9	23 E.	37	Yakim

RECORDED PLATTED PROPERTY

LEGAL DESCRIPTION OF PROPERTY WATER TO BE USED ON

Area served by Town of Mabton.

PROVISIONS

Certificate holder shall maintain an access port as described in Ground Water Bulletin No. 1.

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of described, except as provided in RCW 90.03.380, 90.03.390, and 90.44.020

This certificate of water right is specifically subject to relinquishment for nonuse of water as provided in 90.14.180

Given under my hand and the seal of this office at Olympia, Washington, this **16th**

day of October *19* 74

JOHN A. BIGGS, *Director*
Department of Ecology

by
R. Jerry Rollin, Assistant Director

ENGINEERING DATA

FOR COUNTY USE ONLY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

[ ]

[X]

			PRIORITY DATE
G3-00381C	G3-00381P	11937	June 2, 1971

TOWN OF MABTON

P. O. Box 655 Mabton, Washington 98935

... to the satisfaction of the Department of Eco... and under and specific ... a right ... Department of Ecology and that said right to ... State of Washington and is hereby ...

PUBLIC WATER TO BE APPROPRIATED

a well

15 2

15 gallons per minute; 2 acre-feet per year for continuous municipal supply

LOCATION OF DIVERSION/WITHDRAWAL

200 feet south and 20 feet east from the north quarter of Sec. 31

NW¼NE¼	31	9	23 E.	37	Yakima

RECORDED PLATTED PROPERTY

LEGAL DESCRIPTION OF PROPERTY WATER TO BE USED ON

Area served by Town of Mabton.

PROVISIONS

Certificate holder shall maintain an access port as described in Ground Water Bulletin No. 1.

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place described, except as provided in RCW 90.03.380, 90.03.390, and 90.44.020

This certificate of water right is specifically subject to relinquishment for nonuse of water as provided 90.14.180

Given under my hand and the seal of this office at Olympia, Washington, this **16th** *day of* December, 19 74.

JOHN A. BIGGS, *Director*
Department of Ecology

ENGINEERING DATA
OK WRA

By
R. Jerry Bollen, Assistant Director

FOR COUNTY USE ONLY

E. F. No. 7154—(Rev. 5-71)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Permit to Appropriate Public Waters of the State of Washington

Book No. ________ of Ground Water Permits, on page 1 under Application No. 11922
G3-00181P

TOWN OF MABTON

of Mabton, Washington

is, pursuant to the Report of Examination which has been accepted by the applicant, hereby granted a permit to appropriate the following described public ground waters of the State of Washington, subject to existing rights and to the limitations and provisions set out herein.

Priority date of this permit is June 2, 1971

Source(s) of the proposed ground water appropriation is/are a well

The quantity of water appropriated shall be limited to the amount which can be beneficially applied and not to exceed 15 gallons per minute; 2 acre-feet per year, to be used for the following purposes: municipal supply, as more definitely set out below.

Approximate location(s) of the point(s) of withdrawal is/are: 200 feet south and 20 feet east from the W¼ corner of Sec. 31

being within [illegible]

of Sec. 31, Twp. 9 N., Rge 23 E. W.M. Yakima County.

The use, or uses, to which water is to be applied:

~~Domestic~~/municipal supply: 15 gallons per minute; 2 acre-feet per year, during entire year.

Irrigation: ______ gallons per minute; ______ acre-feet per year from ______ to ______ each year, for the irrigation of ______ acres.

Other use(s) ______ gallons per minute, ______ acre-feet per year, from ______ to ______ each year, for

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Area served by Town of Mabton.

ADDITIONAL LIMITATIONS AND PROVISIONS: The installation and maintenance of an access port as described in Ground Water Bulletin No. ' shall be required prior to issuance of final Certificate of Water Right.

DESCRIPTION OF PROPOSED WORKS:

The well will be **drilled** (Dug or drilled) and have a diameter of **3** inches, and depth of **25** feet.

Description of tunnel or infiltration trench:

DEVELOPMENT SCHEDULE:

Construction work shall begin on or before **started**

and shall thereafter be prosecuted with reasonable diligence and completed on or before **completed**

and complete application of water to proposed use shall be made on or before **April 1, 1974**

This permit shall be subject to cancellation should the permittee fail to comply with the above development schedule and or fail to give notice to the Department of Ecology on forms provided by that Department documenting such compliance

Given under my hand and the seal of this office at Olympia, Washington, this **2nd**

day of **May** , 19 **73**

JOHN A. BIGGS, *Director*
Department of Ecology

by
R. JERRY BOLLEN
Office of Operations

ENGINEERING DATA
OK *DF*

S. F. No. 110-B—03—4-07.

$10.00 examination fee should accompany each application.

STATE OF WASHINGTON
DEPARTMENT OF WATER RESOURCES
Division of Water Management

PRIORITY
Date 6-2-71
Time 10 AM
Accepted

APPLICATION FOR A PERMIT

To Appropriate Public Ground Waters
OF THE STATE OF WASHINGTON

RECEIVED
MAR 24 1971
A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

Application No. G. W. 11937

I, Town of Mabton
(Name of applicant)

of P. O. Box 655, Mabton, Washington 98935
(Complete post office address)

do hereby make application for a permit to appropriate the following described public ground waters of the State of Washington, subject to existing rights. This application is made under the provisions of Chap. 263 of the Session Laws of 1945, and amendments thereto of the State of Washington and subject to the rules and regulations of the Department of Water Resources.

1. *The proposed appropriation will be from* Well
(Well, tunnel, infiltration trench)

located 1 mile north of Mabton on Cemetery Road
(Give distance and direction from nearest city or town)

Area (Leave blank) Subarea (Leave blank)

Zone (Leave blank)

Applicant's name or number of well or other works, if any Mabton

2. *The quantity of water which applicant intends to withdraw for beneficial use is* 15 *gallons per minute,* ... acre feet per year.

3. *The use or uses to which water is to be applied* ~~Municipal~~ municipal supply
(Domestic supply, irrigation, municipal, manufacturing, industrial use, etc.)

4. *The time during which water will be required each year* contanuousiy

5. *Location of well ...* Yakim
2001 S ... Sec. 31

(a) ...
(Give distance and bearing to nearest corner of section or legal subdivision)

being within the ... *of Sec.* ... *Twp.* ... *N., Rge.* ... (E. or W.)

or (b) *If within limits of recorded platted property, town or city, Lot* ... *, Block* ...

of ...

... *Show ... on the accompanying section plat. Other adequate maps or drawings will be acceptable.*

[signature]
3-24-71

6. DESCRIPTION OF WORKS:

(a) Well will be drilled (Dug or drilled) and have a diameter of 3 inches and an estimated depth of 25 feet.

(b) Tunnels or trenches to be described: (Attach additional sheets if needed for full description.)

(c) Distribution system to be described:

(d) If pumps are to be used, give size and type:

1 hr electric shallow well

(e) Give capacity and type of motor or engine to be used:

(f) If the location of the well, tunnel, or other works is less than one fourth mile from a natural stream or stream channel, give the distance to the nearest point on each of such channels and the difference in elevation between the stream bed and the ground surface at the source of development:

(g) Ownership of each existing well or other works from which ground water is withdrawn within a radius of one-quarter mile and the distance and direction from well or other works being reported herein:

	Name	Direction	Distance
	Name	Direction	Distance
	Name	Direction	Distance

SUPPLY THE FOLLOWING INFORMATION ACCORDING TO USE PROPOSED:

7. For Municipal Supply: To supply the city, town, or community of [redacted], in the county of , having a present population of and an estimated population of , in 19

8. For Irrigation: Number of acres to be irrigated acres

9. *Legal Description of Property on which water is to be used for all purposes other than municipal supply:*

(Copy legal description from deed)
(If more space is required, attach separate sheet)

20feet from west line, 200 feet from north line of the North-west quarter of the North-west quarter of the North-east quarter of Section thirty one, (31) , Township none (9), North, Range twenty-three (23) E.W.M. containing ten acres more or less according to government survey thereof, situated in yakima county, Washington.

AREA SERVED BY TOWN of MABTON

(On accompanying plat show location of the existing wells or works)

10. *What interest do you have in the above described property?*

(owner, lessee, contract buyer, etc.)

11. *Do you have any other water rights appurtenant to the above described property?* No

If so, from what source?

12. *Construction work will begin on or before*

13. *Construction work will be completed on or before*

14. *Water will be put to complete beneficial use on or before*

(Signature of applicant)

15. *Name and address of owner of land on which well or works are located:*

Town of Mabton
(Name)

P. O. Box 655, Mabton, Wash. 98935
(Address)

(Signature of legal landowner)

Signed in the presence of us as witnesses:

(Address of witness)

(Name)

(Address of witness)

STATE OF WASHINGTON
COUNTY OF THURSTON

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for correction or completion as follows:

In order to retain its priority, this application must be returned to the Department of Water

WITNESS my hand this

Director, Water Management,
Department of Water Resources

Report of Examination on Ground Water

Received date June 2, 1971 Date of exam. September 6, 1972 Appl. No. 11937

Name Town of Mabton Address P. O. Box 655, Mabton, WA 98935

Type of works a well Dimensions 3" x 25'

Progress of works started

Quantity applied for 15 g.p.m acre-feet per year

Legal subdivision Sec 11 Twp 8 N Rge. 23 E County Yakima

Use municipal supply

Irrigation-acreage: Present Planned Feasible

Municipal: Population as of

Industrial

Time pump will be operated

Other water rights appurtenant to this land

Proximity to existing works, springs, wells, or streams

Area Sub-area Zone

RECOMMENDATIONS

Approved for 15 g.p.m 2 acre feet acre-feet per year, subject to existing water rights. (1 acre-foot 325,850 gallons)

The field investigation for this application was made by A. J. King, Watermaster, Eastern Washington Region. The applicant intends to use this development for washing down sewage disposal plant, domestic requirements for employees, lawn sprinkling for approximately 1/4 acre. For these uses a total of 2 acre feet should be adequate.

The installation of an access port as described in attached Ground Water Bulletin No. 1 shall be required prior to issuance of final certificate of water right. The applicant may, for his own convenience, wish to install an airline and gage in addition to the access port.

Signed at Yakima, Washington,
this 1st day of September, 1972.

A. J. King, Water Resources Inspector
Department of Ecology

Report of Examination on Ground Water

Received date June 2, 1971 Date of exam. [illegible] Appl. No. 11937

Name Town of Mabton Address P. O. Box 655, Mabton, Wa. 98935

Type of works a well Dimensions 3" x 25'

Progress of works [illegible]

Quantity applied for 15 g.p.m. acre-feet per year

Legal sub. NW¼NE¼ Sec. 31 Twp. 9N Rge. 23E County Yakima

Use ~~sewage disposal~~ ~~[illegible]~~ *[illegible] 8-4-71 [illegible]*

Irrigation-acreage: Present Planned Feasible

Municipal: Population as of

Industrial

Time pump will be operated continuously

Other water rights appurtenant to this land no

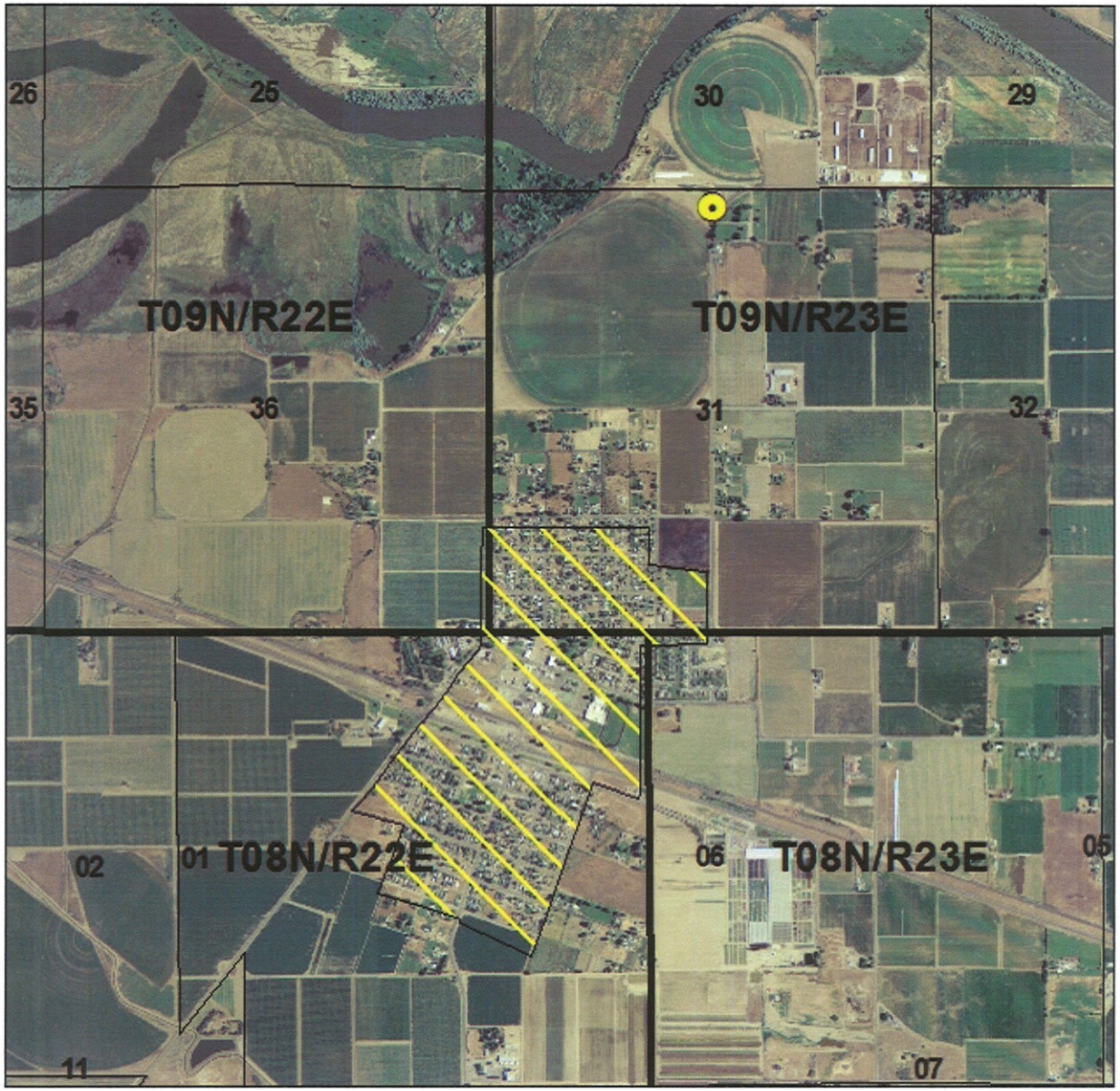
Proximity to existing works, springs, wells, or streams

Area Sub-area Zone

RECOMMENDATIONS

Approved for g.p.m acre-feet per year, subject to existing water rights (1 acre-foot 325,850 gallons)

Ground Water Certifcate No. G3-00381C



0 1,100 2,200 4,400 Feet

N
W E
S

2011 Aerial Photo

Legend

- G3-00381C
- G3-00381C
- sections_2000
- township_2000

G4-29212C

State of Washington
Department of Ecology

APPLICATION FOR PERMIT
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ SURFACE WATER ☒ GROUND WATER

RECEIVED
FEB 24 1987
DEPARTMENT OF ECOLOGY
CENTRAL REGION

$10.00 MINIMUM STATUTORY EXAMINATION FEE REQUIRED WITH APPLICATION

(GRAY BOXES FOR OFFICE USE ONLY)

APPLICATION NO.	W.R.I.A.	COUNTY	PRIORITY DATE	TIME	ACCEPTED
G 429212	37	YAKIMA	2.24.87		BP

APPLICANT'S NAME — PLEASE PRINT

City of Mabton

Bus. Tel. 894-4096
Home Tel.
Other Tel.

ADDRESS (STREET) | (CITY) | (STATE) | (ZIP CODE)

P. O. Box 655, (305 Main St.) | Mabton | Wa | 98935

DATE & PLACE OF INCORPORATION IF APPLICANT IS A CORPORATION

Municipal corporation 1905

1. SOURCE OF SUPPLY

IF SURFACE WATER

SOURCE (NAME OF STREAM, LAKE, SPRING, ETC.) (IF UNNAMED, SO STATE)

TRIBUTARY

IF GROUND WATER

SOURCE (WELL, TUNNEL, INFILTRATION TRENCH, ETC.)

A Well

SIZE AND DEPTH

from 16" to 8" casings, approx. 1,200 deep

2. USE

USE TO WHICH WATER IS TO BE APPLIED (DOMESTIC SUPPLY, IRRIGATION, MINING, MANUFACTURING, ETC.)

Domestic water supply

ENTER QUANTITY OF WATER REQUESTED USING UNITS OF:	CUBIC FEET PER SECOND (CFS)	OR	GALLONS PER MINUTE (GPM)	ACRE FEET PER YEAR
			approx. 1,000	n/a

TIMES DURING YEAR WATER WILL BE REQUIRED

Year around

(CONTINUOUS MUNICIPLE SUPPLY)

IF IRRIGATION, NUMBER OF ACRES	IF DOMESTIC USE, NUMBER OF UNITS BY TYPE, E.G. 1-HOME, 1-MOBILE HOME, 2-CAMPSITES, ETC.	IF MUNICIPAL USE, ESTIMATED POPULATION 20 YEARS FROM TODAY
		1,535

DATE PROJECT WAS OR WILL BE STARTED	DATE PROJECT WAS OR WILL BE COMPLETED
approx June 87	approx March 88

3. LOCATION OF POINT OF DIVERSION/WITHDRAWAL

IF IN PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)	SECTION	TOWN	RANGE	ALSO, PLEASE ENCLOSE A COPY OF THE PLAT AND MARK THE POINT(S) OF WITHDRAWAL OR DIVERSION
2or3	4	1st addition to Mabton	1	8	22EWM	

OR

THE NW¼ NE¼ SEC. 1, T. 8 N., R. 22 EWM, YAKIMA

IF NOT IN PLATTED PROPERTY

ON ACCOMPANYING SECTION MAPS, ACCURATELY MARK AND IDENTIFY EACH POINT OF DIVERSION. SHOW NORTH-SOUTH AND EAST-WEST DISTANCES FROM NEAREST SECTION CORNER OR PROPERTY CORNER.

ALSO, ENTER BELOW THE DISTANCES FROM THE NEAREST SECTION OR PROPERTY CORNER TO THE DIVERSION OR WITHDRAWAL.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	COUNTY

DO YOU OWN THE LAND ON WHICH THIS SOURCE IS LOCATED. IF NOT, INSERT NAME & ADDRESS OF OWNER

yes

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

ATTACH A COPY OF THE LEGAL DESCRIPTION OF THE PROPERTY (ON WHICH THE WATER WILL BE USED) TAKEN FROM A REAL ESTATE CONTRACT, PROPERTY DEED OR TITLE INSURANCE POLICY, OR, COPY CAREFULLY IN THE SPACE BELOW.

Within the boundaries of the Mabton City limits plus the following

WHAT IS YOUR INTEREST IN THE PROPERTY ON WHICH THE WATER IS TO BE USED (PROPERTY OWNER, LESSEE, CONTRACT PURCHASER, ETC.)

City Municipal water system

ARE THERE ANY EXISTING WATER RIGHTS RELATED TO THE LAND ON WHICH THE WATER IS TO BE USED (INCLUDING WATER PROVIDED BY IRRIGATION DISTRICTS OR DITCH COMPANIES) ☒ YES ☐ NO

IF YES, FROM WHAT SOURCE (i.e. SURFACE OR GROUND WATER) AND UNDER WHAT AUTHORITY

Ground Water by the City of Mabton

6. DESCRIPTION OF SYSTEM PROPOSED OR INSTALLED

(FOR EXAMPLE: SIZE OF PUMP, CAPACITY OF PUMP, PUMP MOTOR HORSE POWER, PIPE DIAMETER, NUMBER OF SPRINKLERS, ETC.)

- 50-100 horse pump depending on the depth of water source
- Approx. 1,000 gpm depending on the amount of water found
- 6" line from the source to the 8" main line

REMARKS

7. We currently have two operational wells but one of them is contaminated and not in use. This leaves us with one that is about 50 years old. The proposed new well is necessary so that we can continue serving our residents.

IF 10 ACRE-FEET OR MORE OF WATER IS TO BE STORED AND/OR IF THE WATER DEPTH WILL BE 10 FEET OR MORE AT THE DEEPEST POINT, A STORAGE PERMIT MUST BE FILED IN ADDITION TO THIS PERMIT. THESE FORMS CAN BE SECURED, TOGETHER WITH INSTRUCTIONS, FROM THE DEPARTMENT OF ECOLOGY.

SIGNATURES

City Administrator
APPLICANT'S SIGNATURE

City of Mabton
LEGAL LANDOWNERS NAME (PLEASE PRINT)

Same - City of Mabton
LEGAL LANDOWNER'S SIGNATURE (OWNER OF PROPERTY DESCRIBED IN ITEM NUMBER 6)

P. O. Box 655, Mabton, Wa 98935
LEGAL LANDOWNER'S ADDRESS

FOR OFFICE USE ONLY

STATE OF WASHINGTON }
DEPARTMENT OF ECOLOGY } ss.

This is to certify that I have examined this application together with the accompanying maps

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

☐ Surface Water (issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
February 24, 1987	G4-29212	G4-29212P	G4-29212C

NAME
City of Mabton

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
PO Box 655 (305 Main Street)	Mabton	Washington	98935

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown, but is limited to an amount actually beneficially used.

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
a well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	1000	452.4 *

QUANTITY, TYPE OF USE, PERIOD OF USE

For continuous municipal supply.
* 280 acre-feet are supplemental to Ground Water Certificate No. G3-00027C.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL

500 feet east and 1250 feet south from the north quarter corner of Section 1.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
NW¼NE¼	1	8	22 E.	37	Yakima

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Mabton City limits and residences outside the city limits being located south of Wandling Street, west of Allison Road, north of the Mabton West Lateral and east of Boundary Road within Section 31, T. 9 N., R. 23 E.W.M., Section 6, T. 8 N., R. 23 E.W.M., and Section 1, T. 8 N., R. 22 E.W.M.

PROVISIONS

Installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An air line and gage may be installed in addition to the access port.

All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells).

This well shall be cased and permanently sealed into the Wanapum Formation. Such sealing and casing shall be performed in accordance with the provisions and standards of WAC Chapter 173-160-100 through Chapter 173-160-140 (Minimum Standards for Construction and Maintenance of Water Wells).

The authorized annual quantity of 452.4 acre-feet per year is the maximum that can be withdrawn and used under this right and Ground Water Certificate No. G3-00027C.

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in RCW 90.03.380, 90.03.390, and 90.44.020.

This certificate of water right is specifically subject to relinquishment for nonuse of water as provided in RCW 90.14.160.

Given under my hand and the seal of this office at Yakima, Washington,

this 4th *day of August, 1992.*

Department of Ecology

ENGINEERING DATA
OK
22x103 CC:ska

by
Doug Clayssing, Section Manager

FOR COUNTY USE ONLY

file

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PERMIT

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
February 24, 1987	G4-29212	G4-29212P	

NAME
CITY OF MABTON

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
P.O. Box 655 (305 Main Street)	Mabton,	Washington	98935

The applicant is, pursuant to the Report of Examination which has been accepted by the applicant, hereby granted a permit to appropriate the following described public waters of the State of Washington, subject to existing rights and to the limitations and provisions set out herein.

PUBLIC WATER TO BE APPROPRIATED

SOURCE
A well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	1000	452.4 *

QUANTITY, TYPE OF USE, PERIOD OF USE
Continuous municipal supply.

* 280 acre-feet are supplemental to G3-00027C.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL
500 feet east and 1250 feet south from the north quarter corner of Section 1

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
NW¼NE¼	1	8	22 E.	37	Yakima

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DESCRIPTION OF PROPOSED WORKS

A well, depth and size to be determined.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
June 1, 1988	June 1, 1989	June 1, 2000

PROVISIONS

Installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An air line and gage may be installed in addition to the access port.

All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells).

This well shall be cased and permanently sealed into the Wanapum Formation. Such sealing and casing shall be performed in accordance with the provisions and standards of WAC Chapter 173-160-100 through Chapter 173-160-140 (Minimum Standards for Construction and Maintenance of Water Wells).

During the construction of the well, rock samples will be collected every 10 feet, labelled and retained for the Department of Ecology.

The authorized annual quantity of 452.4 acre-feet per year is the maximum that can be withdrawn and used under this right and Ground Water Certificate No. G3-00027C.

A proof inspection will be conducted prior to issuing the final certificate.

This permit shall be subject to cancellation should the permittee fail to comply with the above development schedule and/or fail to give notice to the Department of Ecology on forms provided by that Department documenting such compliance.

Given under my hand and the seal of this office at Yakima, *Washington, this* 22nd *day of* May, *19* 87.

Department of Ecology

ENGINEERING DATA
OK
ska

by
RUSSELL K. TAYLOR, P.E., REGIONAL MANAGER

REPORT OF EXAMINATION
PROOF EXAMINATION

CITY OF MABTON
PHONE 894-4096

Permit Number G4-29212

Date 4-23-92 Examiner's Name C. Caspar & G. Weston

Source: Ground Water Surface Water

Stream Flow Measurement: _____

Location of Point of Withdrawal or Diversion: per permit

Purpose of Use: Municipal per permit

Number of Acres Developed: ✓

Type of Crop: ✓

Legal Description of Developed Land: Per permit

Type of Pump: Sub. Turb. Cent. Other

Pump Motor: Make 125 HP

Speed (rpm): _____ Water lub. Oil lub.

Access Port _____ Air line ✓

Well Head Seal ✓ Measuring Device _____ Type _____

Type of Distribution System: Pressure 40-45 psi Open

Discharge Pressure: 40-45 8" pipe

Booster Pump: Yes No HP

Discharge Pipe Diameter: N/A

Number of Sprinklers: _____ 1000 gpm

Model and Make of Sprinklers _____

Pressure at Sprinkler Head: _____

Size of Sprinkler Nozzle: _____

Static Water Level: 67 per Well Report

REMARKS: OK for Cert per permit

file

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

REPORT OF EXAMINATION
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
February 24, 1987	G4-29212		

NAME
CITY OF MABTON

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
P.O. Box 655 (305 Main Street)	Mabton,	Washington	98935

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APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
500 feet east and 1250 feet south from the north quarter corner of Section 1

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DESCRIPTION OF PROPOSED WORKS

A well, depth and size to be determined.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
June 1, 1988	June 1, 1989	June 1, 2000

REPORT

Background

On February 24, 1987, the City of Mabton filed an application to appropriate public ground waters. The application was accepted, assigned number G4-29212 and public notice was made. The 30-day protest period expired with no protests being received.

Investigation

A field inspection was conducted by the author on April 21, 1987. Based on this inspection, conversations with Mr. Robert Spink, Engineer for the City, and Ms. Jo Marie Balfour, City Administrator and a review of WDOE office records, the following data were collected:

The City of Mabton has requested the withdrawal of 1,000 gallons per minute (gpm) for a continuous municipal supply. The city currently supplies water within the Mabton City limits and to 43 residences located outside the city limits. In 1985, the population was estimated to be 1,330 people with an average daily water consumption of 350,000 gallons. By the year 2000, it is estimated that the population will approach 1,535 people and water service will be expanded to a Comprehensive Service area. This area includes portions of Section 31, T. 9 N., R. 23 E.W.M., Section 6, T. 8 N., R. 23 E.W.M. and Section 1, T. 8 N., R. 22 E.W.M., lying southeasterly of Boundary Road.

In the past, the municipal water supply has been provided by four wells, one of which has been abandoned. Ground Water Certificate No. G3-00381C was issued to the City in 1974 authorizing the withdrawal of 15 gpm, 2 acre-feet per year for a domestic supply and for wash down at the sewage disposal plant. The well is a 3-inch diameter, 25-foot deep well that is located approximately 300 feet east and 200 feet south from the north quarter corner of Section 31, being within the NW1/4 NE1/4 of Section 31, T. 9 N., R. 23 E.W.M. There is no well report available for this well that is utilized solely for the operation of the sewage disposal plant.

A 1,141-foot deep well, that was called Well No. 1, was used as the major water source until the 1950's when it was abandoned. It is located approximately 750 feet north and 550 feet east from the center of Section 1, being within the SW1/4 NE1/4 of Section 1, T. 8 N., R. 22 E.W.M. No well report is available for the well. This abandoned well is located between the two wells that currently supply water for the city. There was no water right for this well.

Ground Water Certificate No. G3-00027C was issued in 1972 authorizing the withdrawal of 1,400 gpm, 280 acre-feet per year from two wells. One well, known as Well No. 2 by the City, was drilled in 1935. It is located approximately 880 feet north and 590 feet east from the center of Section 1, being within the SW1/4 NE1/4 of Section 1, T. 8 N., R. 22 E.W.M. It is an 8-inch diameter well that is 1,180 feet deep and is currently the main source of municipal water for the City. In 1975, a 75 horsepower pump was installed in the well which produces 800 gpm. There is no well report available for this well. According to Mr. Spink, the static water level was approximately 52 feet below land surface in 1955, however it is currently at 84 feet. Based on data from the City of Mabton 1985 Water Study which included pump tests on Wells No. 1, 2 and 3, Well No. 2 obtains water from the Wanapum formation and displays a degree of interference with Well No. 1. Methane gas is pumped from this well which requires the use of a gas eliminator device before the water is pumped into the storage tank. The well was pump tested in 1974 at 1,500 gpm with a 36 foot drawdown. The temperature of the water is 71° F.

The second well authorized by Ground Water Certificate No. G3-00027C and known as Well No. 3, was completed in 1957 and is located approximately 710 feet north and 530 feet east from the center of Section 1, being within the SW1/4 NE1/4 of Section 1, T. 8 N., R. 22 E.W.M. It is a 16-inch diameter, 1,004-foot deep well that is cased with 16-inch casing to a depth of 130 feet and with 12-inch casing from 120 to 307 feet. The casing is perforated from a depth of 96 feet to a depth of 115 feet and again from 295 to 305 feet. The static water level is 35 feet below land surface and has remained relatively constant. This well is drilled through top soil, sand and gravel, clay, sand and gravel, basalt, clay, sandstone, shale, layers of basalt and terminates in sand. The 1985 Water Study indicates that water is derived from the two zones of perforations with no significant contribution being made by the remainder of the well below the 307-foot casing. The temperature of the water in this well is 56° F., which is 15° colder than that in Well No. 2. The water is contaminated by high nitrate levels which range from 11.3 to 13.3 milligrams per liter. Sustained pumping of the well did not lower the nitrate content in the water. The water does not contain methane gas as does the water from Well No. 2. When pumped, Well No. 3 has no influence on Well No. 2 even though they are only 200 feet apart. Based on these data, it appears that Well No. 3 obtains water from the Ellensburg and Saddle Mountain formations. The well is equipped with a 40 horsepower pump and produces approximately 338 gpm. It was pump tested in 1974 at 425 gpm with a 81 foot draw down.

Although Ground Water Certificate No. G3-00027C authorizes the withdrawal of 1,400 gpm, the actual amount being pumped under the certificate does not exceed 1,138 gpm. A superseding certificate will issue for Ground Water Certificate No. G3-00027C authorizing the actual instantaneous quantity being utilized.

The City of Mabton municipal water supply is utilized for both in-house domestic purposes and for the irrigation of lawns and gardens since no other source of irrigation water is available. The current water supply is not adequate for the existing needs unless the nitrate contaminated water from Well No. 3 is used. The city is, therefore, required to notify the public when the nitrate level of the water supply is elevated by heavy use of Well No. 3. In order to obtain enough uncontaminated water to satisfy current demands and to address the water requirements for the future growth of Mabton, the City has filed the subject application to obtain authorization to drill a new well. They hope to obtain an additional 1,000 gpm from this well, which will be used in addition to the 1,138 gpm being pumped from Wells No. 2 and 3. By storing water from all three wells in the City's 800,000 gallon storage facility, the nitrate content of water from Well No. 3 will be diluted to acceptable levels. The City has received approval from DSHS for the construction and testing of a fourth well.

The proposed well will be located approximately 500 feet east and 1,250 feet south of the north quarter corner of Section 1, being within the NW1/4 NE1/4 of Section 1, T. 8 N., R. 22 E.W.M. It will be drilled within Lot 2 or Lot 3 of Block 4 of the First Addition of Mabton, which is at the corner of Boundary Road and South Street near the Harkin and Larkin Restaurant. The well will be located at least 1,400 feet from the other city wells. The City proposes to drill a 16-inch diameter well that will be 8 inches in diameter at the bottom. It will be drilled by Larry Webley to a depth of approximately 1,200 feet. In order to protect the shallower aquifers used by domestic wells in the area and to prevent contamination of the well by shallow contaminated ground water, the well will be a cased and sealed into the Wanapum formation.

Rock samples collected during the construction of a deep well can be used to further the understanding of the geology and hydrogeology of the area. During the construction of the City of Mabton well, rock samples will be collected every 10 feet, labelled and retained for analysis for the Department of Ecology. Collection bags will be provided by the Department.

There is one certificate of water right within a mile radius of the proposed well. Ground Water Certificate No. 534-D was issued to Northern Pacific Railway Company authorizing the withdrawal of 83 gpm, 13.5 acre-feet per year for a water supply for locomotives. The well is located approximately 730 feet north and 1,150 feet west from the southeast corner of the NW1/4 NE1/4 of Section 1, being within the NW1/4 NE1/4 of Section 1, T. 8 N., R. 22 E.W.M. The authorized place of use is the station grounds of the Northern Pacific Railway Company at Mabton. The well is an 8-foot diameter, 71-foot deep well that is located approximately 1,000 feet from the site of the proposed City well. It is likely that this right has relinquished due to non-use.

There are two domestic wells on record within a mile radius of the applicant's proposed well. They are a 100-foot deep well and a 143-foot deep well. Both wells penetrate the Ellensburg formation also utilized by Well No. 3. The proposed well will be cased through this zone.

Based on the consumption of water for the City of Mabton during 1985, the per capita consumption is approximately 263 gallons per day. In the year 2000, the population is estimated to become 1,535 people with the same per capita consumption. The annual water requirement for the city at that time should not exceed 452.4 acre-feet. Since Ground Water Certificate No. G3-00027C authorizes the use of 280 acre-feet per year, this right shall authorize an additional 172.4 acre-feet and be supplemental to the remaining 280 acre-feet. As the total annual quantity will not be required until the population has reached 1,535, the City will be given until the year 2000 to put the water to full beneficial use under the permit.

Conclusions

Based on these data, the following conclusions are made:

Water is available for the proposed beneficial use. Due to the depth of casing and the distance from neighboring wells, there should be no impairment of existing rights. Granting a permit is not contrary to the public interest.

Recommendations

The instantaneous quantity of 1,000 gpm and the annual quantity of 452.4 acre-feet per year for a continuous municipal supply are recommended for approval.

Installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An air line and gage may be installed in addition to the access port.

All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells).

This well shall be cased and permanently sealed into the Wanapum Formation. Such sealing and casing shall be performed in accordance with the provisions and standards of WAC Chapter 173-160-100 through Chapter 173-160-140 (Minimum Standards for Construction and Maintenance of Water Wells).

During the construction of the well, rock samples will be collected every 10 feet, labelled and retained for the Department of Ecology.

The authorized annual quantity of 452.4 acre-feet per year is the maximum that can be withdrawn and used under this right and Ground Water Certificate No. G3-00027C.

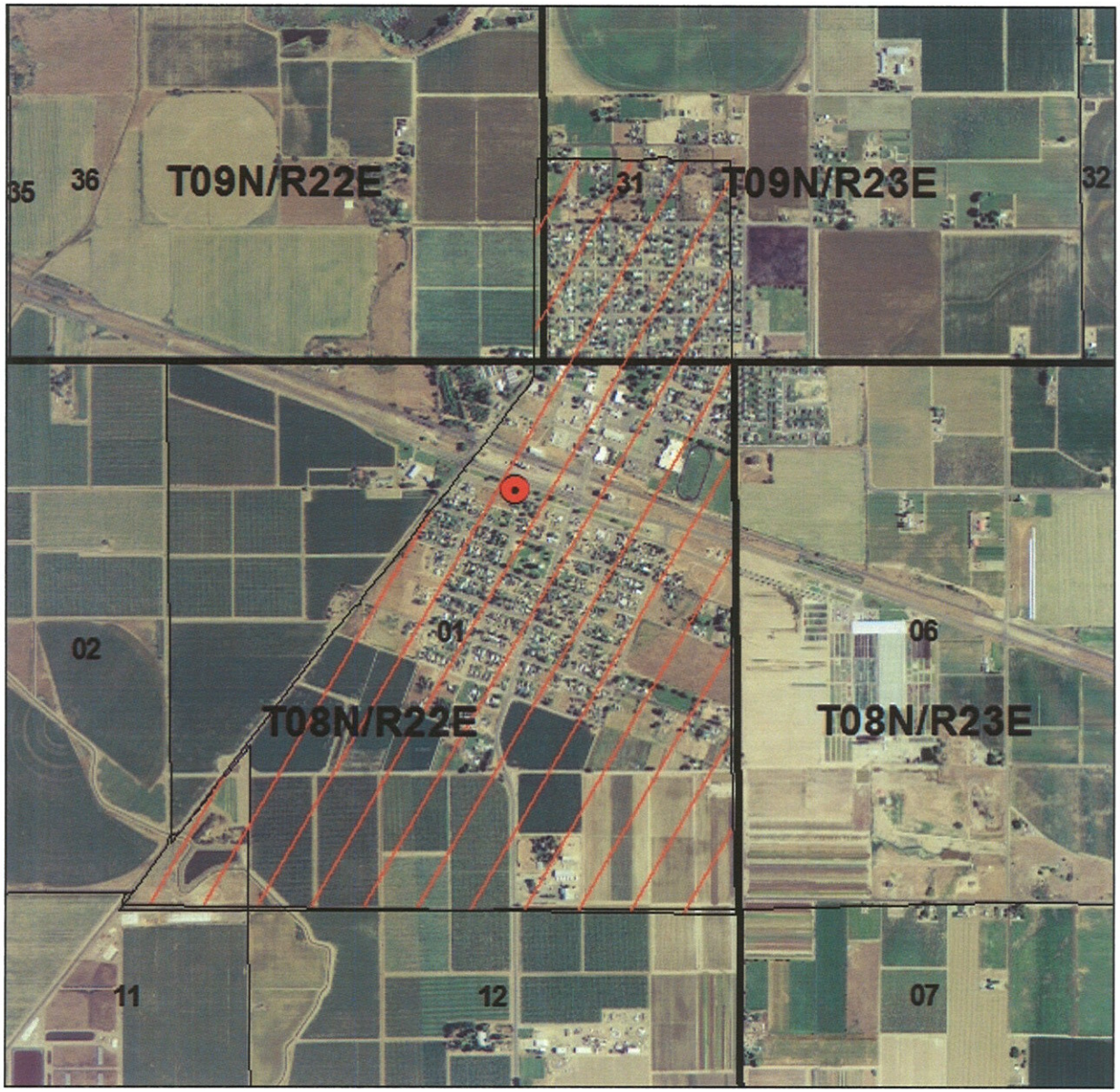
A proof inspection will be conducted prior to issuing the final certificate.

REPORT BY: Darlene M. Frye DATE: May 8, 1987
Darlene M. Frye

APPROVED BY: Howard R Vandt for DATE: 5-6-87
Doug Clausing, Regional Supervisor

ska

Ground Water Certifcate No. G4-29212C



0 900 1,800 3,600 Feet

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2011 Aerial Photo

Legend

- G4-29212C
- G4-29212C
- sections_2000
- township_2000

APPENDIX K

EMERGENCY RESPONSE PLAN

APPENDIX K

EMERGENCY RESPONSE PLAN

The following section describes means and methods for the City to cope with emergency situations affecting its water utility. It includes a list of important telephone numbers for emergencies, some general considerations that should be kept in mind by City staff during an emergency, and specific emergency response plans. This Plan was created under the guidance of Department of Health Publication #331-211. In an effort to protect the citizens of Mabton, information from some of the sections has been omitted to protect the water system.

SECTION 1
EMERGENCY RESPONSE MISSION AND GOALS

Mission Statement	In an emergency, the mission of the Mabton water system is to protect the health of our customers by being prepared to respond immediately to a variety of events that may result in contamination of the water or disruption of supplying water.
Goal 1	Be able to quickly identify an emergency and initiate timely and effective response action.
Goal 2	Be able to quickly notify local, state, and federal agencies to assist in the response.
Goal 3	Protect public health by being able to quickly determine if the water is not safe to drink or use and being able to immediately notify customers effectively of the situation and advise them of appropriate protective action.
Goal 4	To be able to quickly respond and repair damages to minimize system down time.

SECTION 2
SYSTEM INFORMATION

System identification number	49650 R	
System name and address	City of Mabton 305 Main St. Post Office Box 655 Mabton, WA 98935	
Directions to the system	See Figure 1-1 of the Water System Plan.	
Basic description and location of system facilities	The location of City facilities are shown in Figure 1-1 of the Water System Plan. The City is located along SR 22 approximately 7 miles north of Sunnyside, WA	
Location/Town	Mabton, WA	
Population served and service connections from Division of Drinking Water records (projected for 2010)	2,165 people	682 ERUs
System owner	City of Mabton	
Name, title, and phone number of person responsible for maintaining and implementing the emergency plan.	Chris Morris, Public Works Lead Employee (509)-439-4077	(509) 894-4096 City Hall

SECTION 3
CHAIN OF COMMAND

Name and Title	Responsibilities During Emergency
Hon. Angel Reyna Mayor	Responsible for guiding City Council in decision-making, should the water department require its involvement.
Chris Morris Public Works Lead Employee	Responsible for overall management and decision-making for water system. Primary contact for all water system emergencies.
Ret Stewart City Clerk	Responsible for administrative functions in the office, including receiving phone calls and keeping a log of events. A scripted message will be prepared by the water system staff to answer general questions.

SECTION 4
EVENTS THAT CAUSE EMERGENCIES

TYPE OF EVENT	PROBABILITY OF EVENT (HIGH-MEDIUM-LOW)	RISK OF DAMAGE FROM THE EVENT (High-Medium-Low)	ACTIONS TO BE TAKEN
Earthquake	Low	High	• Manually adjust lag/lead status of pumps if necessary • Monitor reservoir levels and determine if water main and/or intertie breaks have occurred • Check reservoirs for cracks, shifting in foundation, cracking or breaks in fittings and pipes leading to and from reservoirs • Check pipes for cracks or breaks in the line • Check the booster station equipment for damage
Floods	Low	Medium	• Manually adjust lag/lead status of pumps if necessary • Monitor reservoir levels and determine if water main and/or intertie breaks have occurred • Check pipes for areas of wash out • Check pipes for cracking or breaks • Increase monitoring for coliforms
High Winds	High	Low	• Check structures for damage

TYPE OF EVENT	PROBABILITY OF EVENT (HIGH-MEDIUM-LOW)	RISK OF DAMAGE FROM THE EVENT (High-Medium-Low)	ACTIONS TO BE TAKEN
Ice Storms	Low	Medium	• Manually adjust lag/lead status of pumps if necessary • Monitor reservoir levels and determine if water main and/or intertie breaks have occurred • Check reservoirs for cracking due to ice formation inside the tanks • Check pipe lines for breaks or frozen pipes
Droughts	High	Low	• Advise citizens to conserve water
Water Borne Illness	Low	Medium	• Manually adjust lag/lead status of pumps if necessary • Test water leaving wells to prevent illness • Check the reservoirs to ensure water is safe • Issue notices, such as boil notice, as needed • Increase monitoring for coliforms • Drain and refill reservoirs • Flush water lines • Notify DOH

TYPE OF EVENT	PROBABILITY OF EVENT (HIGH-MEDIUM-LOW)	RISK OF DAMAGE FROM THE EVENT (High-Medium-Low)	ACTIONS TO BE TAKEN
Vandalism	Low	Medium	• Check all properties on a regular basis and clean up any signs of problems • Manually adjust lag/lead status of pumps if necessary • Call police to investigate
Terrorism	Low	Medium	• Manually adjust lag/lead status of pumps if necessary • Issue notices to residents as needed • Flush lines. • Drain and refill reservoirs
System Neglect	Low	Medium	• Follow the operation and maintenance plan
Cross-Connections	Low	High	• Follow the guidelines in Appendix L • Prevent backflow problems • Follow backflow incident procedure
Construction Accidents	Medium	Medium	• Check pipe stability if damaged and repair immediately to prevent backflow problems
Electrical Outages	High	Low	• Issue curtail order if needed for extended outages

TYPE OF EVENT	PROBABILITY OF EVENT (HIGH-MEDIUM-LOW)	RISK OF DAMAGE FROM THE EVENT (HIGH-MEDIUM-LOW)	ACTIONS TO BE TAKEN
Chemical Spills	Low	Medium	• Issue a notice to all residences • Follow chemical clean up protocol set up by the EPA • Test the water system at the wells and the reservoirs • Flush pipelines in effected areas • Follow backflow incident procedures

SECTION 5
SEVERITY OF EMERGENCIES

The system personnel will determine the severity of an emergency, but the water distribution manager will make the final decision. The information for making the decision will accumulate over a period of time and results may change as more information becomes available. The following gives a break down of different severities and the approximate amount of time it will take to resolve the issue.

Level I – Normal (Routine) Emergency (Definition)

Description: The City of Mabton water system considers the following as level I emergencies:

- Distribution line breaks.
- Short power outages.
- Minor mechanical problems with the wells
- Other minor situations where it is not likely that public health will be jeopardized.

These situations commonly are resolved in 24 hours. If they cannot be resolved in the time frame the situation will be elevated to a level II due to a draw down on the storage level of the water, which could be below a safe operating level.

Level II – Minor Emergency (Alert Status) (Definition)

Description: The City of Mabton water system considers the following as level II emergencies:

- Disruption in supply such as a transmission main line break, pump failure with a potential for backflow, and loss of pressure.
- Storage is not adequate to handle disruption in supply.
- An initial positive coliform or E. coli sample.
- An initial primary chemical contaminant sample.
- A minor act of vandalism.
- Drought, with a noticeable and continuing effect on pump output.

These situations commonly are resolved in 72 hours.

Level III – Significant Emergency (Definition)

Description: The City of Mabton water system considers the following as level III or actual emergencies:

- A verified acute coliform MCL or E. coli/fecal positive sample requiring immediate consideration of a health advisory notice to customers.
- A confirmed sample of another primary contaminant requiring immediate consideration of a health advisory notice to customers.
- A loss or complete malfunction of the well facilities
- A major line break or other system failure resulting in a water shortage or requiring system shutdown.
- An act of vandalism or terrorist threat such as intrusion or damage to a primary facility.
- An immediate threat to public health of the customers and an advisory is required.

These situations commonly require more than 72 hours to resolve.

Level IV – Catastrophic Disaster/Major Emergency (Definition)

Description: The City of Mabton water system considers the following events to be level IV or major emergencies:

- Earthquake that shuts down the system or impacts sources, lines, etc.
- Act of terrorism possibly contaminating the water system with biological or chemical agents.
- Flood that infiltrates system facilities and sources.
- Chemical spill within 2000 feet of the system's sources.
- Storm that significantly damages power grid and system facilities.
- Mudslide or other earth shift that causes failure of transmission or inability to operate reservoir in system

These events often take several days or weeks to resolve before the system returns to normal operation.

SECTION 6
EMERGENCY NOTIFICATION

Person or Agency	*Phone Number*
WATER SYSTEM PERSONNEL	
Chris Morris, Public Works Lead	894-4096 City Hall
	439-4077 Cell
CITY PERSONNEL	
Ret Stewart, City Clerk	894-4096
LOCAL, STATE, AND FEDERAL AGENCIES	
Sunnyside Community Hospital	911 or 837-1500
Fire Department, Chief Luke Cussins	911 or 830-0867
Washington State Department of Health, Spokane	(877)-481-4901 (emergency)
Andres Cervantes, P.E., Regional Engineer	(509) 329-2120
Washington State Dept. of Ecology, Spokane	(509) 329-3400
Yakima County Public Works	(509) 574-2300
Yakima County Sheriff - Yakima	(509) 574-2500
Yakima County Health Department	(509) 575-4040
State Division of Emergency Management	(800) 258-5990
U.S. Environmental Protection Agency	(206) 754-0500
UTILITIES	
Pacific Power	(888) 221-7070
Telephone – CenturyLink	(800) 877-1125
One-Call Locates	(800) 424-5555
SUPPLIERS, CONTRACTORS	
H.D. Fowler	(425)-746-8400
Columbia Electric Supply Co.	(509) 837-6033
MEDIA	
Local Newspaper – Grandview Herald	(509) 882-3712
Local radio station – KARY	(509) 248-2900
CITY ENGINEER	
Gray & Osborne, Inc.	(509) 453-4833

NOTIFICATION PROCEDURES

Notifying water system customers

Who is Responsible:	Public Works Lead
Procedures:	Contact local newspaper and radio station to keep citizens updated about status of water system during emergencies. For generic information, pamphlets are distributed with bills.

Alerting local law enforcement, state drinking water officials, and local health

Who is Responsible:	Public Works Lead
Procedures:	Contact appropriate officials from Emergency Call List.

Contacting service and repair contractors

Who is Responsible:	Public Works Lead
Procedures:	Contact appropriate contractors from Emergency Call List.

Contact neighboring water systems, if necessary

Who is Responsible:	Public Works Lead
Procedures:	The City of Grandview can be contacted at (509) 882-3099

Procedures for issuing a health advisory

Who is Responsible:	Public Works Lead
Procedures:	Contact local newspaper and radio station to keep citizens updated about status of water system during emergencies.

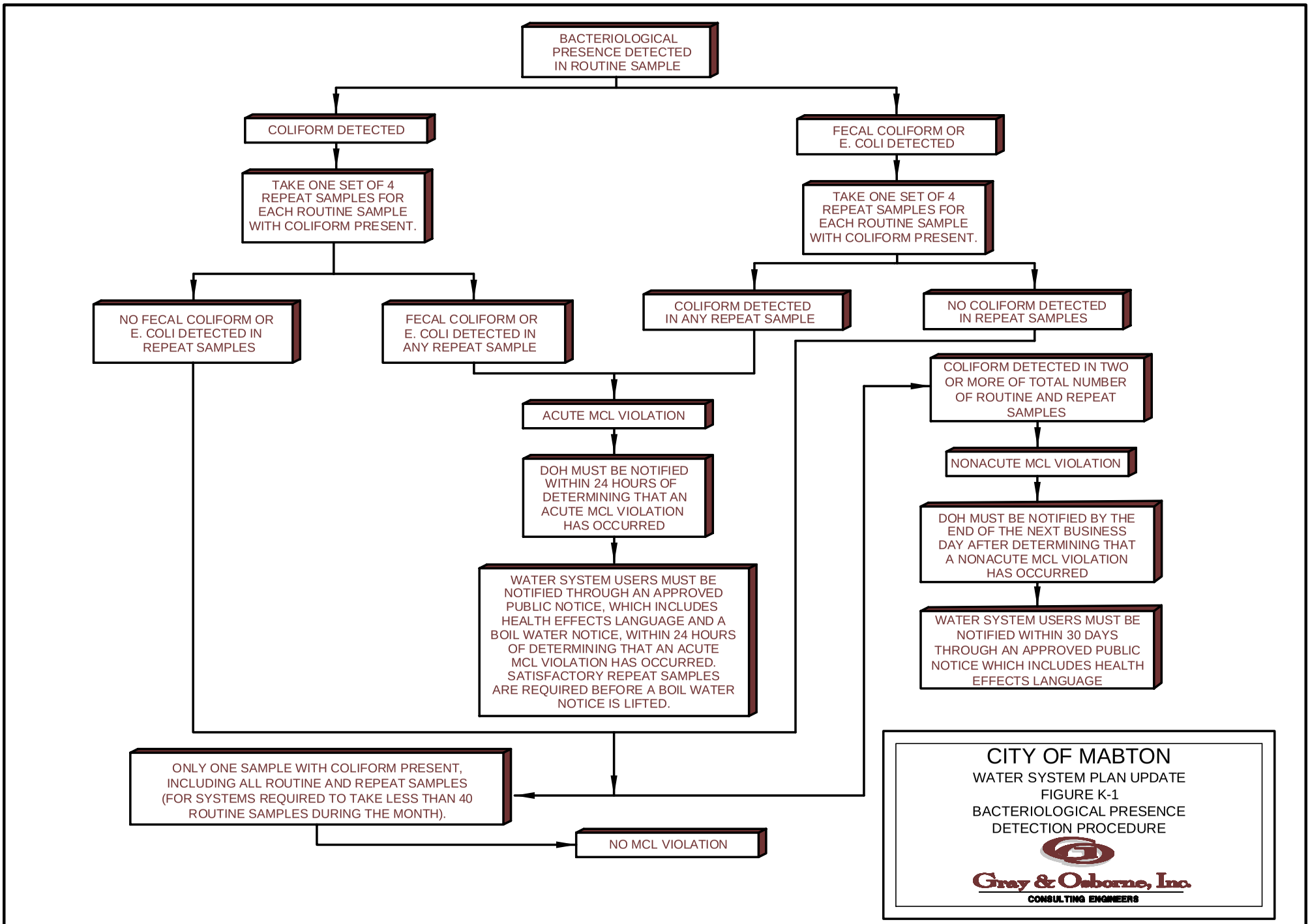
SECTION 7
WATER SAMPLING

A. BACTERIOLOGICAL DETECTION

The persistent detection of coliforms in the water supply, particularly E. coli or fecal bacteria, may require issuing a public boil water notice to ensure the health and safety of the City's water customers. In addition, emergencies such as floods, earthquakes, or other disasters can affect water quality as a result of damage to water system facilities. WAC 246-290-320 requires water utilities to follow specific procedures in the event coliform bacteria are detected in the water system. These procedures are outlined in Figure K-1. In addition to these requirements, the City's Coliform Monitoring Plan, located in Appendix F, summarizes increased sampling requirements in the month following coliform detection.

B. INORGANIC, VOC AND SOC CHEMICAL DETECTION

A procedure to comply with DOH requirements in the event of an inorganic, volatile organic, or synthetic organic chemical detection is presented in Figure K-2.



CITY OF MABTON

WATER SYSTEM PLAN UPDATE

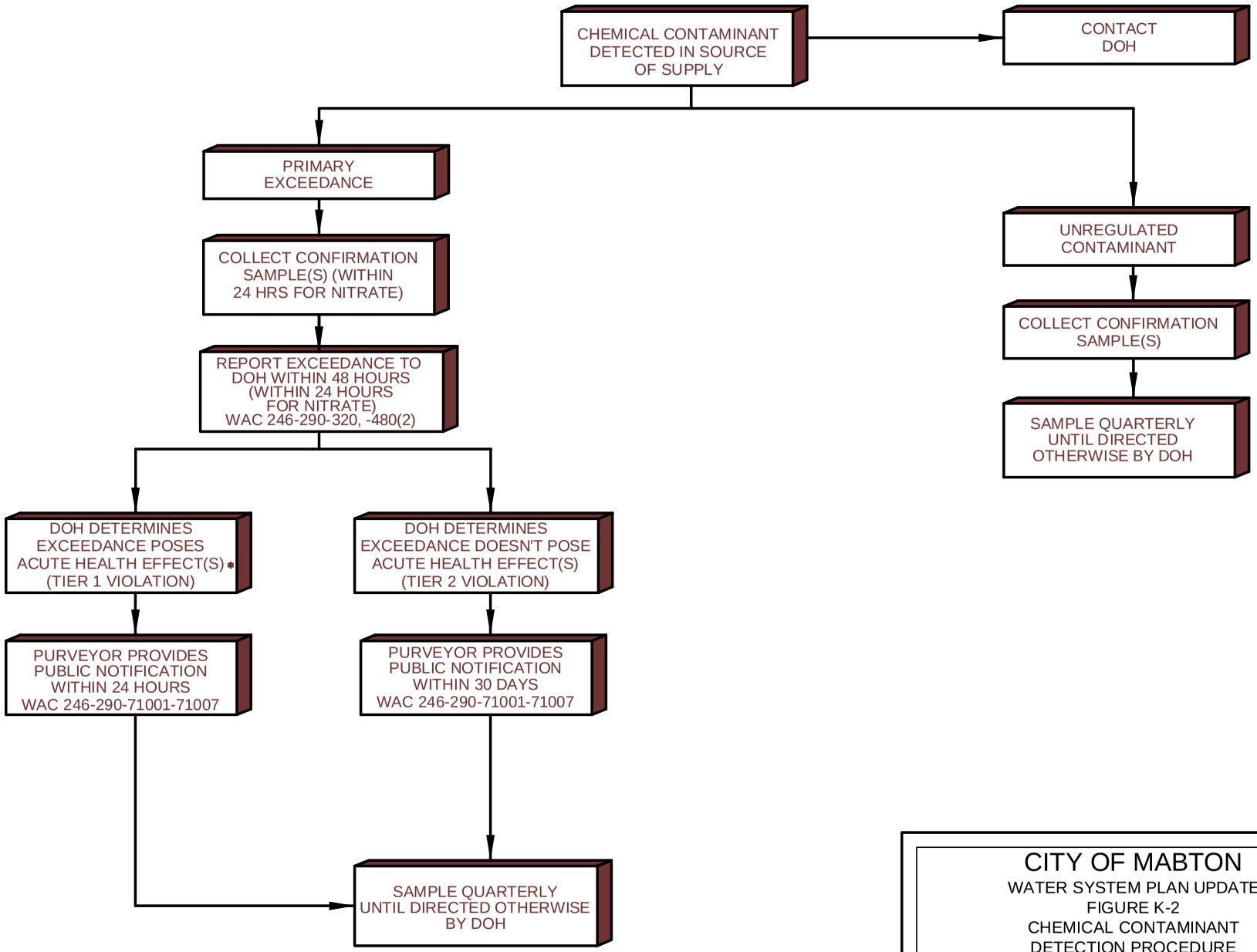
FIGURE K-1

BACTERIOLOGICAL PRESENCE DETECTION PROCEDURE

Gray & Osborne, Inc.

CONSULTING ENGINEERS

M:\MABTON\11064 WSP\FIGURES\FIG K-1



CITY OF MABTON

WATER SYSTEM PLAN UPDATE

FIGURE K-2

CHEMICAL CONTAMINANT DETECTION PROCEDURE

Gray & Osborne, Inc.

CONSULTING ENGINEERS

* AN EXCEEDANCE OF THE 10.0 MG/L NITRATE MCL CONSTITUTES AN ACUTE HEALTH EFFECT CONCERN, AS DOES ANY RESULT WHICH IS FOUR TIMES THE PRIMARY MCL FOR OTHER REGULATED CONTAMINANT.

M:\MABTON\11064 WSP\FIGURES\FIG K-2

SECTION 8
EFFECTIVE COMMUNICATION

Communication Tips:

Do:
- Be prepared.
- Designate a spokesperson.
- Provide complete, accurate, and timely information.
- Tell the truth.
- Express empathy.
- Acknowledge uncertainty and offer to get back with more information later.
- Document your communications.

Do not:
- Speculate on the cause or outcome of an incident.
- Blame or debate.
- Minimize or brush off concerns of customers.
- Treat inquiries from interested parties as an annoying distraction from the real business of emergency response.

Spokesperson	Alternate 1	Alternate 2
Mayor	Public Works Lead	City Clerk

Key messages

Develop possible messages in advance, and update them as the emergency develops:
• We are taking this incident seriously and doing everything we can to resolve it. • Our primary concern is protecting our customers' health. • Another important concern is keeping the system operational and preventing damage. • What we know right now is _____ • The information we have is incomplete. We will keep you informed as soon as we know more. • We have contacted state and local officials to help us respond effectively. • If you think you may be ill or need medical advice, contact a physician. • We are sampling the water and doing tests to determine whether or not the water is contaminated.

SECTION 9
VULNERABILITY ASSESSMENT

Not included due to security concerns.

SECTION 10
RESPONSE TO SPECIFIC EVENTS

A. Construction Accident

ASSESSMENT	Construction crews often encounter pipes unexpectedly. Pipe rupture possible.
Immediate action	If a water distribution pipe is ruptured, identify the necessary valves to isolate the line and remove all pressure to it. Identify all connections to isolated line. Perform water quality testing in system to determine if contamination has occurred.
Notifications	Notify all affected water users of the break and expected duration of water loss. If pipe supplies are needed, contact pipe suppliers listed in Call List above.
Follow-up actions	Once line break is repaired, verify that each valve used to isolate the broken section has been returned to an open position.

B. Severe Weather

ASSESSMENT	Mabton experiences freezing weather consistently throughout winter months, but these conditions don't necessarily result in emergency situations.
Immediate actions	During an extended storm situation, maintain roads necessary to reach reservoirs and sources. Should the storm result in damage to system components, the ability to access them in a timely manner is important. There is also a possibility of the reservoir level sensing being affected, in which case the well pumps may require manual operation.
Notifications	Unless major system components must be taken out of service, weather conditions shouldn't require notification of customers.
Follow-up actions	Following an extended period of freezing weather, verify that the reservoirs are operating correctly. Examine water use records in the following month to determine if distribution leakage has escalated, indicating the probability of a pipe main break.

C. Earthquake

ASSESSMENT	Historically, the likelihood for an earthquake in Mabton is low.
Immediate actions	Verify if the City's pumps and reservoirs are operating correctly. The City has three sources, so a single failing source is not a direct emergency. Perform bacterial testing to determine if earthquake damage to system has resulted in system contamination. Contact neighboring water systems and/or local grocers to determine availability of potable water in the area.
Notifications	Notify public of any boil orders or the requirement of bottled water. In the event of major system damage, Department of Health will need to be involved.
Follow-up actions	Perform necessary system repairs and disinfection, and continue testing until water is determined to be clean and safe.

D. Vandalism

ASSESSMENT	The City has not historically had problems with vandalism on water system infrastructure due to security measures.
Immediate actions	Contact police in all cases to report criminal activity. If the nature of the vandalism indicates a direct threat to water system operation or water quality, perform water testing to determine the extent of the impact. Graffiti or other aesthetic damage should be repaired, but requires no official response beyond police notification.
Notifications	Local police department should be contacted. If water quality has been impaired, contact Department of Health. Public to be notified as necessary, based upon nature and extent of water contamination.
Follow-up actions	Perform necessary system repairs and disinfection, and continue testing until water is determined to be clean and safe.

E. Power outage

ASSESSMENT	The City does not have a generator to power the wells or booster station.
Immediate action	If possible, determine if the power outage will be extended in nature.
Notifications	Notify Pacific Power of outage. Number is shown in Section 6. Notify customers of outage and request water conservation.
Follow-up actions	Once power is restored and verify proper system operation. Inspect each electrical component in the field to determine that the component is operational.

F. Microbial (coliform, E. coli) contamination

See Figure K-1 and following tables.

G. Chemical contamination

See Figure K-2 and following table.

Actions to for contamination in water system

Distribution System Contamination
• Disinfect distribution lines as dictated by the nature of the contamination
Reservoir Contamination
• Re-sample to confirm contamination
• Check distribution system for presence of contamination
• Isolate reservoir from system
• Inspect vent screens, hatches, and piping to identify source of contamination
• If reservoir water is contaminated and therefore considered unsuitable for consumption, drain and clean reservoir.
• Consider disinfecting reservoir if bacteriological standards are exceeded. Follow AWWA Standards. A 50 ppm chlorine solution in the 800,000 gallon reservoir can be obtained by adding 770 gallons of 5.25% chlorine bleach.

H. Fires

The availability of adequate water supplies and pressure is an integral part of the City's ability to fight fires within its service area. When fires occur in the City's service area, the local fire authority will contact the City so that the water system components can be managed in such a way as to maximize the flow and pressure to the affected area.

I. Nursing Homes, Elder Care Facilities, Dialysis Patients

Some water customers require immediate notification should their water service be interrupted for any reason. These customers include facilities such as nursing homes, elder care facilities, and kidney dialysis patients. The City maintains a list of all these customers so that in the event the City's water supply is to be interrupted because of an emergency situation these customers can be quickly notified.

SECTION 11
ALTERNATIVE WATER SOURCES

Intertie to adjacent water supply system

Water systems within one-quarter mile of our system	Feasibility of connecting
The closest water system is Grandview (7 miles).	It is not feasible for Mabton to intertie with Grandview for short-term emergency supply. The City does have access to a tanker truck that could be used to transport water from another system and provide basic water supply needs to Mabton residents during an extended outage.

Alternate source(s) of water

Alternative sources	Names	Phone	Availability	Is the water safe for drinking?
Bottled Water Suppliers	Blue Sky Market Safeway, (Grandview)	(509)-894-4444 (509)-882-1325	Limited Limited	Yes

SECTION 13
RETURNING TO NORMAL OPERATION

Action	Description and actions
Inspect, flush, and disinfect the system	Water Distribution Manager and support staff inspect all system facilities, ensure all water quality tests have been done and the system has been flushed and disinfected if necessary. City staff report to the Water Distribution Manager as to nature of work completed. The Water Distribution Manager will determine when necessary work is completed.
Verification of water quality	Water Distribution Manager verifies water quality sampling results.
Coordinate with DOH	Water Distribution Manager coordinates with DOH on system condition and water quality results.
Notify customers	Water Distribution Manager works with City staff to write notice to customers. This notice will then be distributed to the public.

APPENDIX L

CROSS CONNECTION CONTROL

City of Mabton
Cross Connection Initial Survey

Customer	Condition	Hazard	Recommended Protection At Meter
Yellow Rose	Green Houses	High	
Northwest Horticulture	Protected?	High	
Laundromat	Chemicals	High	
Blue Sky Market	Fountain Drink	High	
C&D Market	Fountain Drink	High	
Gotta Stop Shell	Fountain Drink	High	
Silver Dollar	Fountain Drink	High	
Ixtapa	Fountain Drink	High	
Su Mercadito	Fountain Drink	High	
Mabton Jr. Sr. High	Fire sprinkler system	High	
Arts Fox Elementary	Fire sprinkler system	High	
WWTP Mabton		High	

Date: 3/11/05

By: Cade D. Scott
Cade Scott, Cross Connection Specialist

Comments: This is a list of potential High Hazard service connections. With the exception of the Mabton WWTP, Yellow Rose Nursery, and Northwest Horticulture which are High Hazard connections.

ORDINANCE NO. 865

AN ORDINANCE OF THE CITY OF MABTON, WASHINGTON, CREATING CHAPTER 13.05 CROSS-CONNECTION CONTROL OF TITLE 13 OF THE MABTON MUNICIPAL CODE ESTABLISHING A PROGRAM TO MONITOR CROSS-CONNECTIONS WITHIN THE MABTON WATER SYSTEM

WHEREAS, the City of Mabton is a code city operating under the laws of the State of Washington; and

WHEREAS, pursuant to WAC 246-290-490, or as amended, it is the responsibility of the City of Mabton to protect its drinking water by instituting and enforcing a cross-connection control program; and

WHEREAS, the city council of the City of Mabton with the assistance of city staff have been reviewing the guidelines for the establishment of a cross-connection plan;

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Mabton, Washington as follows:

Section 1. Chapter 13.05 Cross-Connection Control shall be created within Title 13 Public Services of the Mabton Municipal Code, which reads as follows:

CHAPTER 13.05 - CROSS- CONNECTION CONTROL

SECTIONS:

13.05.005 Authority

Pursuant to WAC 246-290-490, or as amended, it is the responsibility of the City of Mabton to protect its drinking water by instituting and enforcing a cross-connection control

program. Now, therefore, the City of Mabton stipulates as follows in this chapter.

13.05.010 Definitions

Except where specifically designated herein, all words used in this document shall carry their customary meanings. Words used in the present tense include the future and plural words include the singular. The word "shall" is always mandatory, and the word "may" denotes a use of discretion in making a decision. Any definition not found in this section will take its meaning from chapter 246-290 WAC, or as amended, or in the most recent edition of the "Manual of Cross Connection Control" published by the Foundation for Cross Connection control and Hydraulic Research, University of Southern California.

A. "Air gap" means a physical separation between the free-flowing end of a potable water supply pipeline and the overflow rim of an open or nonpressure-receiving vessel. To be an "approved air gap", the separation must be at least twice the diameter of the inlet piping (supply pipe) measured vertically, and never be less than one inch.

B. "Approved backflow prevention assembly" or "backflow assembly" or "assembly" means an assembly to counteract backpressures or prevent backsiphonage. This assembly must appear on the list of approved assemblies issued by the Washington state Department of Health. The assembly must be purchased and installed as a complete unit including two shut-off valves and test cocks.

C. "Auxiliary supply" means any water source or system other than the City of Mabton's.

D. "Backflow" means the flow of water or other liquids, gases or solids from any source back into the distribution system. The flow of water in the opposite direction of its intended flow.

E. "Backflow assembly tester" means a person holding a valid BAT certificate issued in accordance with WAC 246-290-490 and Chapters 18.27, 18.106 and 70.119 RCW.

F. "Backpressure" shall mean backflow due to water pressure on the downstream side of the meter which exceeds the operating pressure of the public potable water supply.

G. "Backsiphonage" shall mean backflow due to a negative or reduced pressure within the public potable water.

H. "Building inspector" shall mean the building inspector for the City of Mabton.

I. "City" shall mean the City of Mabton.

J. "Closed system" means any water system or portion of a water system in which water is closed.

K. "Contamination" means the entry into or presence in a public water supply system of any substance which may be harmful to health and/or quality of the water.

L. "Cross-connection" means any physical arrangement where a public water system is connected, directly or indirectly (actual or potential), with any other non-drinkable water system or auxiliary system, wells, sewer, drain conduit, swimming pool, storage reservoir, plumbing fixture, swamp coolers, or any device which may be capable of imparting contamination or pollution to the public water system as a result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, or other temporary or permanent devices through which, or because of which, backflow may occur are considered to be cross-connections.

M. "Cross-connection Specialist" or "CCS" shall mean a person holding a valid CCS certificate issued in accordance with the Washington Administrative Code.

N. "Degree of hazard" means the low or high hazard classification that shall be attached to all actual or potential cross-connections.

O. "Director" shall mean the public works director or his/her designee.

P. "DOH" means the department of health.

Q. "Double check detector assembly" or "DCDA" means an assembly which consists of two independently operating check valves which are spring-loaded or weighted. The assembly comes complete with a shut-off valve on each side of the checks, as well as test cocks to test the checks for tightness. It shall also be provided with a factory bypass arrangement wit a meter and a minimum of an approved double check assembly.

R. "Double check valve backflow prevention assembly" or "double check assembly" or "double check" or "DCVA" or "DC" means an assembly which consists of two independently operating check valves which are spring-loaded or weighted. The assembly comes complete with a shut-off valve on each side of the checks, as well as test cocks.

S. "Health hazard" means an actual or potential threat of contamination of a physical, toxic or biological nature that would be a danger to health.

T. "High hazard" means the classification assigned to an actual or potential cross-connection that potentially could allow a substance that may cause illness or death to backflow into the potable water supply.

U. "In-premises protection" means a method of protecting the health of consumers served by the customer's plumbing system (i.e., located within the property lines of the customer's premises) by the installation of an approved air gap, backflow prevention assembly or device at the point of hazard.

V. "Inspector", "surveyor" or "specialist" shall mean a person holding a valid CCS certificate issued in accordance with the Washington Administrative Code, who meets the stipulations in this chapter.

W. "Local administrative authority" means the local official, board, department or agency authorized to administer and enforce the provisions of the Uniform Plumbing Code and all other plumbing codes recognized by the state of Washington.

X. "Low hazard" means the classification assigned to an actual or potential cross-connection that could allow a substance that may be objectionable, but not hazardous to one's health, to backflow into the potable water supply.

Y. "Mobil unit" shall mean units connecting to the water system through a hydrant, hose bibb, or other appurtenance of a permanent nature that is part of the city water system or a permanent water service to a premises. Examples can include but are not limited to the following: water trucks, pesticide applicator vehicles, chemical mixing units or tanks, waste or septage hauler trucks or units, sewer cleaning equipment, carpet or steam cleaning e2quipment, rock quarry or asphalt/concrete batch plants, or any other mobile equipment or vessel. Uses that are excluded from this definition are recreational vehicles at assigned sites or parked in accordance with other city ordinances pertaining to recreational vehicles, and homeowner devices that are used by the property owner in accordance with other provisions of this, or other, City of Mabton ordinances pertaining to provision of water to premises.

Z. "Person" means a natural person (individual), corporation, company, association, partnership, firm, limited liability company, joint venture company or association, and other such entity.

13.05.050 Backflow Prevention Assembly Requirements

A CCS employed by or under contract with the city shall determine the type of backflow assembly to be installed within the area served by the city. All assemblies shall be installed at the service connection unless it is determined by the CCS to install the assembly at an alternate location for premises protection or at the point of use. The cross-connection shall be eliminated or an assembly shall be required to be installed in each of the following circumstances, but the CCS is in no way limited to the following circumstances:

A. The nature and extent of any activity on the premises, or the materials used in connection with any activity on the premises, or materials stored on the premises, could contaminate or pollute the potable water supply.
B. Premises having any one or more cross-connections or potential cross-connections as that term are defined in this chapter and the WAC.
C. When a cross-connection survey report form is required by the city to be filled out and returned and it has not been received.
D. Internal cross-connections are present that are not correctable.
E. Intricate plumbing arrangements exist or plumbing subject to frequent changes are present that make it impractical to ascertain whether or not cross-connections exist.
F. There is a repeated history of cross-connections being established or re-established.
G. There is unduly restricted entry so that inspections for cross-connections cannot be made with sufficient frequency to assure that cross-connections do not exist.
H. Materials, chemicals or any substance or apparatus is being used that if backflow occurred contamination would result.
I. Installation of an approved backflow prevention assembly is deemed to be necessary in the judgment of the CCS to accomplish the purpose of these regulations.
J. Any premises having auxiliary water supply which is not in compliance with WAC 248-54-30 and is not acceptable to the city.
K. In the event of a point-of-use assembly has not been tested or repaired as required by WA 246-290-490, or as amended, and this chapter.
L. If it is determined that additions or rearrangements have been made to the plumbing system without obtaining proper permits as required by the city code enforcement division.
M. All high health hazard premises which are defined in Table 9 of WAC 246-290-490, or as amended, are required to have premises isolation by installing a reduced pressure principle assembly in accordance with this chapter.
N. When a garden hose attachment is connected to the premises plumbing, including but not limited to fertilizer applicators, pesticide applicators and radiator flush kits
O. Where reclaimed or reused water systems are installed.
P. Premises on which any substance is handled under pressure so as to permit entry into the public water system.

13.05.060 Irrigation

All irrigation systems shall be protected in accordance with the plumbing code regulations. In the event any system is equipped with an injector system, or has submerged heads, a reduced pressure principle assembly will be required.

13.05.070 Fire

An approved double check detector backflow prevention assembly shall be the minimum protection on all new fire sprinkler systems using piping material that is not approved for potable water use, and/or that does not provide for periodic flow-through. A reduced pressure principle detector backflow prevention assembly must be installed, if any solution other than the potable water can be introduced into the sprinkler system. Retrofitting on fire sprinkler systems will be required in each of the following circumstances:

A. Where improper maintenance has occurred.
B. On all high hazard locations.
C. Where a CCS deems necessary.
D. Wherever required by the WAC.

13.05.080 Temporary Meters and Hydrant Valves

Backflow protection will be required on temporary meters and all hydrant valves. The type of assembly will be commensurate with the degree of hazard and will be determined on a case-by-case basis by the city's CCS.

13.05.090 Mobile Units

Any mobile unit or apparatus as defined in MMC 13.05.010 which uses the city's water from any premises or piping within the distribution system shall first obtain a permit from the city. The mobile unit will be inspected to assure appropriate backflow protection is installed in accordance with this chapter.

13.05.100 Right-of-Way Encroachment

A. No person shall install or maintain a backflow prevention assembly upon or within any city right-of-way except as provided in this section.
B. The city reserves the right to have an assembly installed in the right-of-way.
C. A backflow prevention assembly required by the city may be installed upon or within any city right-of-way only if the owner proves to the city that there is no other feasible location for installing the assembly, and installing it in the right-of-way will not interfere with traffic or utilities. The city retains the right to approve the location, height, depth, enclosure, and other requisites of the assembly prior to its installation.
D. All permits required by the city code to perform work in the right-of-way.
E. A property owner shall, at the request of the city and at the owner's expense, relocate a backflow prevention assembly which encroaches upon any city right-of-way, when such relocation is necessary for street or utility construction or repairs for purposes of public safety.

13.05.110 Plumbing Code

As a condition of water service, customers shall install, maintain, and operate their piping and plumbing systems in accordance with all Washington State plumbing codes.

13.05.120 Access to Commercial Industrial Premises

Authorized employees of the city, with proper identification, shall have access during the hours of 8:00am to 5:00pm to all parts of commercial and industrial premises and within the buildings to which water is supplied. If access to the premises or to the interior of a structure during these hours are denied,

a reduced pressure principle assembly shall be required to be installed at the service connection to that premises.

13.05.130 Access to Residential

Permission to perform a cross-connection inspection at a residential property must be requested by the city at least 72 hours prior to the time of inspection. If permission is denied, the property owner shall contact a CCS to perform the inspection and provide a report to the city. The report must reach the city within 21 days of the request for permission from the city. Failure to comply may result in the city installing a RP assembly at the meter incompliance with this chapter.

13.05.140 Testing

Backflow prevention assemblies shall be tested and repaired in accordance with the requirements set out in the WAC, this chapter and the most recent edition of the city's SOP manual.

13.05.150 Responsibilities of Backflow Prevention Assembly

All backflow assembly testers operating within the city shall be certified in accordance with all applicable regulations and shall comply with all stipulations in this chapter and the most recent edition of the city's SOP manual.

13.05.160 Maintenance of Backflow Prevention Assembly

Backflow prevention assemblies shall be maintained in accordance with the requirements set out in the WAC, or as amended, and the most recent edition of the city's SOP manual.

13.05.170 Installation Requirements and Specifications

Backflow Prevention assemblies shall be installed in accordance with the requirements in the WAC and the most recent edition of the city's SOP manual. In the even the CCS allows a premises isolation assembly to be installed at an alternate location, there shall be no connections between the meter and the premises isolation assembly.

13.05.180 Thermal Expansion

If a closed system has been created by the installation of a backflow prevention assembly, it is the responsibility of the property owner to eliminate the possibility of thermal expansion.

13.05.190 Pressure

Any reduction in water pressure caused by the installation of a backflow assembly is not the responsibility of the city. The city will give reasonable assistance to the owner regarding information on adequate sizing of assemblies and proper plumbing practices to provide for required pressure and flows for fire protection.

13.05.200 Parallel Installation

Premises where noninterruption of water supply is critical shall have two assemblies of the same type installed in parallel. They shall be sized in such a manner that either assembly will provide the minimum water requirements while the two together will provide the maximum water requirements.

13.05.210 New Construction

A. On all new nonresidential construction, an approved backflow assembly shall be installed at the service connection. The type of the assembly will be commensurate with the degree of hazard as determined by a CCS.
B. When a building is constructed on commercial premises, and the end use of the building is not determined or could change, a reduced pressure principle backflow prevention assembly shall be installed at the service connection to provide protection of the public water supply in the event of the most hazardous use of the building.

13.05.220 Residential Service Connections

Any residential property which has been determined to have an actual or potential cross-connection and/or has violated the plumbing code or this chapter in any way shall be required to install an approved backflow prevention assembly in accordance with this chapter.

13.05.230 Rental

The property owner is responsible for the installation, testing and repair of all backflow assemblies on their property. When the tenants change, or, if the plumbing is altered in any way, it is the responsibility of the owner to notify the city.

13.05.240 Retrofitting

Retrofitting shall be required on all service connections where an actual or potential cross-connection exists, and wherever else the city deems retrofitting necessary.

13.05.250 Costs of Compliance

All costs associated with the purchase, installation, inspections, testing, replacement, maintenance, parts, and repairs of the backflow assembly are the financial responsibility of the property owner. All costs associated with any disconnect fees associated with the enforcement of this chapter are the sole responsibility of the water user and/or property owner. On residential irrigation systems, the city may purchase, install, test, and maintain the backflow assemblies. The cost for these services will be passed on to the end user and/or property owner on their water bill and my be amortized over a period of time upon request.

13.05.260 Recovery of Costs

Any water customer violating any of the provisions of this chapter and who causes damage to or impairs the city's water system, including, but not limited to, allowing contamination, pollution, any other solution or used water to enter the city's water system, shall be liable to the city for any expense, loss or damage caused by such violation. The city shall collect from the violator for the cost incurred by the city for any cleaning, purifying, repair or replacement work or any other expenses caused by the violation. Refusal to pay the assessed costs shall constitute a violation of this chapter and shall result in the termination of service.

13.05.270 Emergency Suspension of Service

The director or his/her designee may, without prior notice, suspend water service to any premises when such suspension is necessary to stop the eminent threat of any actual or potential cross-connection as defined in this chapter and the most recent edition of the city's SOP manual.

13.05.280 Non-Emergency Suspension of Service

The director or his/her designee may, with 24 hr prior notice, suspend water service to any premises where the conditions as defined in this chapter and the most recent edition of the city's SOP manual have been violated.

13.05.290 Penalties

Any person, property owner, firm, corporation or business entity violating (a) this chapter or (b) any regulation, rule or permit of the city issued pursuant to this chapter, shall be liable to the city for civil penalty. The amount of such civil penalty shall be $2,000 per violation. Each continuing day's violation under this chapter shall constitute a separate offense. The penal provisions imposed under this chapter shall not preclude the city from filing suite to enjoin the violation. The City of Mabton retains all legal rights and remedies available to it pursuant to local, state and federal law.

13.05.300 Falsifying Information

Any person who knowingly makes any false statement, representation, record, report or other document filed or required to be maintained pursuant to this chapter, or who falsifies, tampers with, or knowingly renders inaccurate any backflow assembly, device or method required under this chapter shall (in addition to civil and/or criminal penalties provided by state law) be guilty of a misdemeanor subject to the general penalty clause of the Mabton Municipal Code.

Section II. This Ordinance shall take effect and be in force five (5) days from and after its passage, approval, and publication, as provided by law.

PASSED by the CITY COUNCIL of the CITY OF MABTON, WASHINGTON and APPROVED by the MAYOR this 10th day of May 2005.

MAYOR:

DAVID CONRADT

ATTEST:

ILDIA JACKSON
CITY ADMINISTRATOR

APPENDIX M

SANITARY SURVEY

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 East Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

February 10, 2011

Angel Reyna, Mayor
City of Mabton
PO Box 655
Mabton, Washington 98935

Subject: Mabton, City of; PWS ID #49650R; Yakima County
Routine Sanitary Survey – January 12, 2010

Dear Mr. Reyna:

Thank you and Francisco Tijerina for your time and help with the Department of Health (DOH) Routine Sanitary Survey on January 12, 2010. I documented our discussion and observations during the survey, in this letter. Please refer to the enclosed copy of the report and photographs for more information.

Findings

We inspected wellfield S05 (consisting of S01 and S04), the Reservoir, chlorination stations and the booster station. During the survey, we observed no significant deficiencies. Making sure all water systems correct each Significant Deficiency discovered during a survey, is a high priority for the state's drinking water program.

Other Findings

During the course of the survey, we also observed some additional concerns that I listed below, followed by a brief explanation. Because these concerns can impact the quality of the water supply, please correct and provide a brief letter documenting how you had each deficiency corrected by **April 29, 2010**.

1. S04 (Well #5) – Replace the end of the screened air vent, so the vent portion turns to face the floor. Also replace the screen. The existing vent is at an angle directed outwards from the pump motor base, and the external screen had begun to deteriorate (See Photo-6). I enclosed a fact sheet describing the specifics of the vent and screen.

Sanitary Control Area

S01 (Well #4) – The Sanitary Control Area (SCA) is secured by a locking fence and used primarily for storage. In addition, the city keeps the heavy equipment and materials away from the pumphouse and the source. Please keep watch over the SCAs and avoid using the areas to dump old broken equipment or debris.

Reservoir

The reservoir hatches and vents appeared sealed and protected. Please document the gasket is in place and the screens have not corroded, during the next scheduled maintenance check.

General Water System Information

Operation

The attached system operation and analysis were part of the old water system plan approved on September 19, 2005. The analysis explains some of the questions and some of the set points observed at the S04 (Well 5), S01 (Well 4), and the booster station. The information will provide a starting point for tracking, as well as, to determine whether the water system is operating correctly. For example, the reservoir works as a large aeration tower with splash plates on top. The wells are treated with chlorine and fill the reservoir from the top about 5-feet above the splash plates. Please keep in mind the aerated inorganic compounds can increase corrosion and deterioration of screens and vents.

Total Number of Approved Connections

The total number of approved connections was established when the current water system plan was approved in 2005. DOH based the limitation on the water right and current water system usage. At the time, the city was pumping more water on an annual basis than the water right allowed. Currently, the operating permit is Blue for exceeding the total number of approved connections, and cannot be changed to Green or increase the approved number of connections, until a new water system plan is submitted for review and approval.

Survey Fee

Our office will notify you when the next sanitary survey is due. WAC 246-290-990 (3)(c), authorizes a schedule of fees to be implemented to help recover the cost of conducting a sanitary survey.. The Department of Health's (DOH) total cost to complete this sanitary survey is $1836.00. The Office of Drinking Water has used state and federal funds to pay $918.00 of this amount. An invoice showing the remaining amount due of $918.00 is enclosed.

Do not hesitate to call me at (509) 329-2120, if you require additional information or assistance.

Sincerely,

Andres R. Cervantes, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosures: Invoice
Sanitary Survey Report and Photos

cc: **Yakima** County Health District
Danielle Finley, Survey Coordinator

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

Office of Drinking Water
INVOICE
Engineering, Planning, and Sanitary Survey Review Form

TO: ANGEL REYNA, MAYOR
CITY OF MABTON
PO BOX 655
MABTON, WA 98935

Invoice Number	202973E
Invoice Date	FEBRUARY 10, 2011
Billing Period	30 DAYS

DATE	DESCRIPTION	QUANTITY	COST	AMOUNT
01/12/11	SANITARY SURVEY MABTON, CITY OF YAKIMA COUNTY DATE OF SURVEY: JANUARY 12, 2010 PWS ID #49650R	1		$1,836.00
	DOH SHARE			- 918.00
	TOTAL			$ 918.00
	Payment due within 30 days. Interest shall accrue at 1% per month after 30 days.			

Make Checks Payable to Department of Health
Return Lower Portion to:
Department of Health
PO Box 1099
Olympia, WA 98507-1099

Office of Drinking Water
Engineering, Planning, and Sanitary Survey Review Form

NAME	MABTON, CITY OF
INVOICE NUMBER	202973E
INVOICE DATE	FEBRUARY 10, 2011
AMOUNT	$918.00

Return to:
Department of Health
Revenue Section
PO Box 1099
Olympia, WA 98507-1099

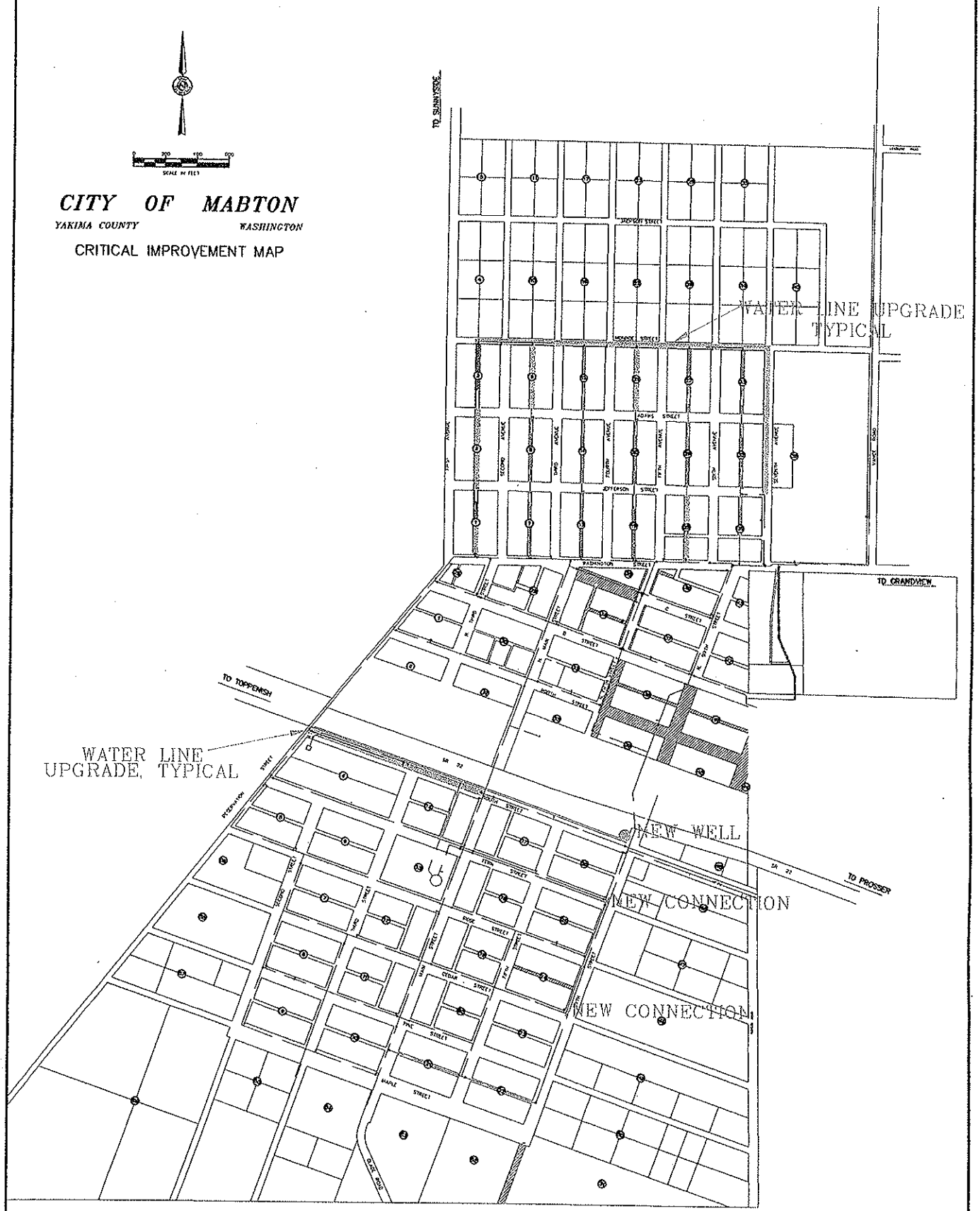
DOH Form #331-332

For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TTY 1-800-833-6388).

CITY OF MABTON

YAKIMA COUNTY *WASHINGTON*

CRITICAL IMPROVEMENT MAP



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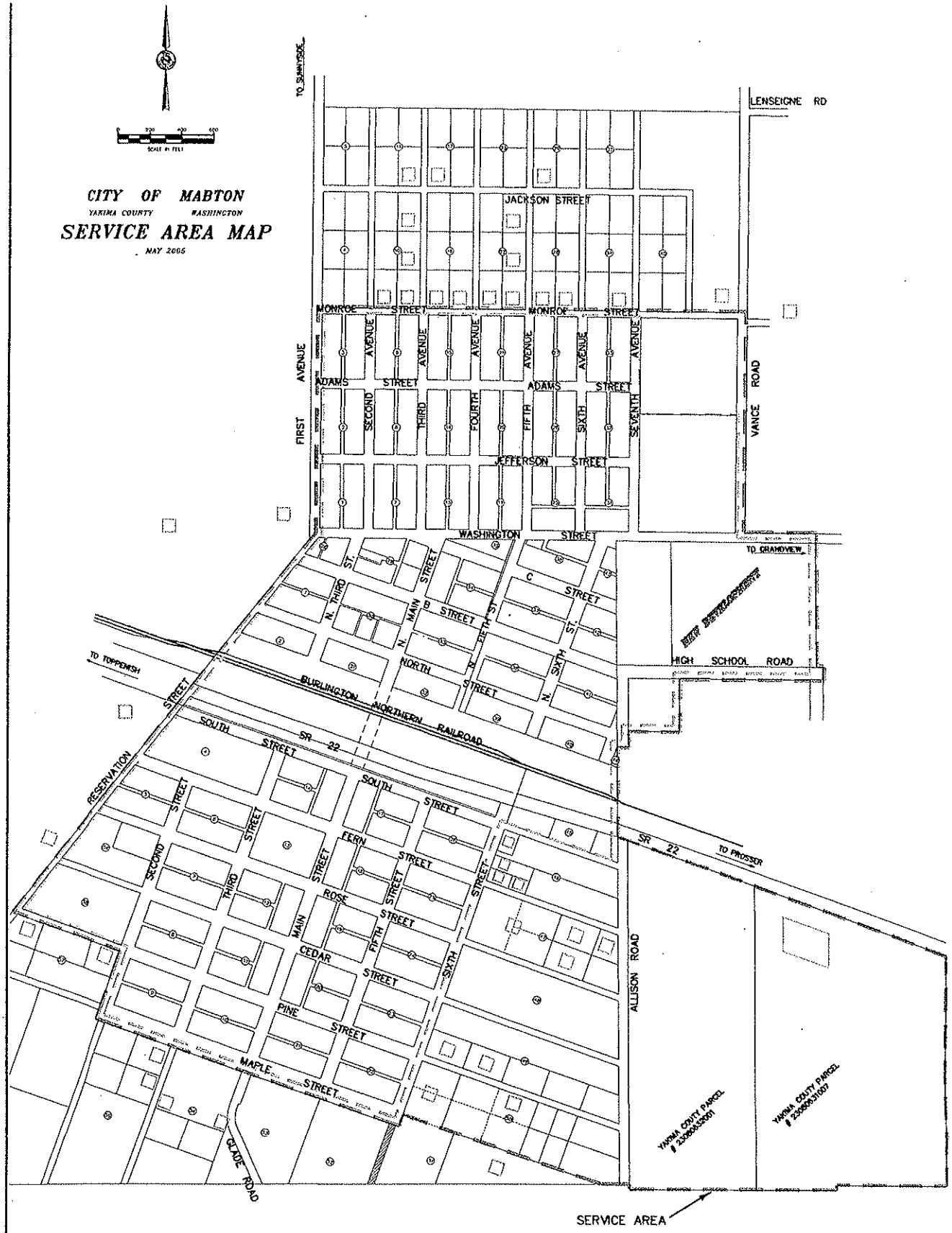
02134Improvements.dwg



LEGEND

SERVICE AREA

RETAIL SERVICE AREA

RETAIL CUSTOMER OUTSIDE RETAIL SERVICE AREA
Service will be continued to the existing residences
No new services will be granted outside the
Retail Service Area.

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RICHLAND, WASHINGTON

Mabton2004ServiceArea.dwg
Revised: May 2005

disinfection byproducts due to the chlorination of the drinking water. The total concentration of these four compounds is less than 80 ug/l, and is not an immanent concern at this time. Bromochloromethane was found at 0.81 ug/l. Although this is not a regulated chemical, it is above the trigger level. The levels of this compound will need to be reviewed in future testing.

C. SYSTEM INVENTORY, DESCRIPTION AND ANALYSIS

1. SOURCE

Mabton's water system can draw water from three wells, Well #2, Well #3 and Well #4. Water production from Well #1 was discontinued sometime in 1956. From 1957 to 1987, Well #2 and Well #3 were used as the primary sources. Well #4, now the primary source, was drilled in 1987. The static water level (no pump running) in Well #4 was 76 feet below the ground surface. By 1999, the static water level had dropped to 114 feet below the ground surface. In 1987 the water production in Well #4 was 1,000 gpm and the current production rate is 450 gpm. Pump bowls were lowered in 2001 to prevent cavitation (pumping air) when the pump is on.

In 1987, Well #3 was taken off line due to high nitrates and Well #2 was used as a supplementary well in the summer and an emergency backup well in the winter. Water produced from Well #2 has high hydrogen sulfide (rotten egg) concentrations. In the early 1990's, water production from Well #4 was decreasing, requiring Well #2 to be used continually during the summer.

Complaints regarding the hydrogen sulfide by Mabton's residents brought about the use of Well #3 as a primary source. In 2001, the City received Department of Health approval for blending the high nitrate water in Well #3 with water from Well #4 (**Appendix 21**). The water provided to consumers is below the drinking water limits for nitrates.

Water levels in Well #3 have decreased over the years. In 1985, the static water level was 34 feet below the ground surface. In 2002, the static water level was 64 feet below the ground surface, 30 feet lower than in 1985. The pump bowls for Well #3 were lowered approximately 60 feet in 2002 to prevent cavitation when pumping water.

Over the past three years the wells have not kept up with the peak demands occurring in the summer months. On several occasions, the distribution system has been shut off in order to allow the reservoir to fill at least 1/4 of the operating height. Department of Health has informed the City that this is not a good practice because it creates a great potential for cross-connections. With the low pressure in the distribution system, a back syphon into the system can occur and potentially bring a contaminant source with it.

Well #3 construction consists of:

- 16-inch casing from ground surface to 130 feet below ground surface with perforations from 96' to 115'.
- 12-inch casing to 307 feet below ground surface with perforations from 295' to 305'.
- 12-inch open hole to 413 feet below ground surface.
- 10-inch open hole to 1,004 feet below ground surface.

Rehabilitation of well #3 is not considered the best option for increasing water production. In 1957, the well produced approximately 400 gpm. Currently the well produces 250 gpm. In 1985, Charles Jungman recommended drilling a new well instead of making improvements to well #3 (**Appendix 18**). The primary reason for this recommendation was the observation that the water level in well #3 was not affected during a pump test of well #1, which pumped water from 859 feet below ground surface and deeper. This was an indication that most of the water produced in well #3 was from the upper water bearing zones.

The City is in need of an additional water source capable of 500 gpm to augment well #3 and Well #4. Without an additional source, the City of Mabton will have to enforce stringent water conservation measures.

Table 3-5: Water Source Information

WELL #	SOURCE 3	PUMP RATE	NOTES
2	SO 2	200	Hydrogen Sulfide odor
3	SO 3	250	High nitrates, must be blended
4	SO 1	450	Main water source.

2. TREATMENT

The City of Mabton treats the groundwater as it is pumped into the storage tank. Chlorine is added near the top of the reservoir. The residual chlorine level in the water system is kept above 1.0 mg/l.

3. STORAGE

Mabton has one storage tank. A pressure gage located in the booster station is used to determine the depth of water in the tank and is set five feet (5') above the floor of the water tank. Operating pressures are 34 psi for the "pump on" level and 36 psi for the "pump off" level. The water depth in the tank for the "pump on" level is 83 feet (5' +

78') and the "pump off" level is 88 feet (5' + 83'). The total volume in the tank below the "pump off" level is 611,500 gallons.

Chapter 246-290-235 of the Washington Administrative Code requires reservoirs to be adequately sized to provide operating storage (OS), equalizing storage (ES), standby storage (SB) and fire suppression storage (FSS). The equalizing and standby storage evaluations take into account well production rates. With water production decreases over the past decade, the Mabton reservoir does not meet these recommendation for total storage. The available storage of 611,500 gallons is less than the total recommended amount of storage; 1,051,300 gallons (**Appendix 5**). This has been evident during the summer of 2003 and 2004. Water production has not kept up with prolonged peak demands.

In July of 2004, the City tried turning off the booster pumps to help decrease the water use. In four days, the water level increased 10 feet. The City then started shutting off the water to the distribution system from 11:00 p.m. to 3:00 a.m. to allow the reservoir to fill. The water level increased approximately 40 feet each night by doing this. This lasted for about three weeks. The Washington State Department of Health recommended that the City stop this procedure due to the potential for creating a cross connection. Since the middle of August 2004, Mabton has continued to operate the water system with out the booster pumps on. The fire pump is left on the automatic settings for emergency situations.

With the addition of a well producing 500 gpm, the Mabton water system will meet the current storage requirements. If the standby storage is set at the minimum recommendation of 200 gallons and a new well in constructed, the Mabton water system can provide service to 1,166 ERU's.

4. DISTRIBUTION SYSTEM HYDRAULICS

WaterCAD by Haestad Methods was used to perform the hydraulic analysis of the Mabton water system. Hazen-Williams roughness coefficients were not determined in the field due to the inability to isolate sections of the water system with a fire hydrant or other outlet at the end of the "pipe run". The roughness coefficients and other input data used in the computer model were:

4" Cast Iron Pipe	C = 90
6" Cast Iron Pipe	C = 100
PVC Pipe	C = 130
Concrete Pipe	C = 110
Normal Operation System Pressure	30 psi
Minimum Fire Flow	1,000 gpm, w/ min. system pressure of 20 psi

Roughness Coefficients (C values) were selected based on age of the pipe and potential for restriction of flow. Conservative values were selected since no field measurements were made. Elevations used in the modeling are from the contour map done by Gray and Osborne in 1953. (Surveys will be required for future upgrade projects to verify all elevations used in the computer model).

A peak hourly demand (PHD) of 1,200 gpm was used for year 2003. This was estimated from Mabton's existing circular flow charts for the booster pumps. On six different days during the summer of 2002 the flow on the recorded charts reached 1,000 gpm. Three days the duration of the peak flow was two hours and on the other three days, the duration was three hours. Due to the length of time of the higher flows, the PHD was increased to 1,200 gpm to help ensure the hydraulic analysis evaluated flows at or higher than the existing flows.

The critical situation for water systems is fire flow during PHD. In each evaluation the available fire flow was compared to the recommended fire flow requirements (Section 3.5). Changes to the model water system were evaluated to determine minimum upgrades needed for the system to meet the recommended minimum fire flow requirements, 1,000 gpm with minimum system pressure of 20 psi.

Existing fire hydrants are represented by junction nodes near the actual location of the fire hydrants. Pipes PS511 and PS521 in the southwest section of town were drawn in the model. Mabton Public Works indicated these pipes have not been constructed. Therefore, these pipes were closed during the modeling, simulating no pipe.

Locations of future demands are dependent on new housing and businesses in Mabton. As noted in 3.C "Current & Future Land Use," Mabton has approved the plat on the east side of the City for development as noted in Section 2.C. Without knowing where other growth will occur or the locations of new water lines, the future PHD was added in the areas near this plat.

MODELING RESULTS

NORMAL OPERATION ANALYSIS

The base scenario shows the system at peak hourly demand, 1,200 gpm, with the two booster pumps and fire pump in operation. The distribution system in this situation has pressures that exceed 30 psi. Without the fire pump, the system pressure drops approximately 8 psi, bu the lowest pressure of 71 psi is still significantly higher than the required 30 psi (**Appendix 6, Normal Operation**).

FIRE FLOW ANALYSIS

The existing water system was evaluated to determine if a fire flow 1,000 gpm can be provided throughout the City while maintaining a minimum pressure of 20 psi. Each

of the scenarios listed in the following sections are based on a minimum system pressure of 20 psi. Where fire flow deficiencies are noted, the fire flow listed is the flow rate available during peak hourly demands and sustaining 20 psi throughout the system. Upgrades to the system were evaluated to determine where water line replacements are needed to increase the fire flow and maintain 20 psi in the system.

The analysis shows the existing system can provide over 2,000 gpm at junctions JC-40, JC-60 and JC-6, near the high school with peak hourly demands and maintain 20 psi throughout the system. Near the middle school, the existing system can provide over 2,000 gpm at junctions JN-71 and JN-80. At junction JN-85 the available fire flow is 1,950 gpm. At 98% of the desired fire flow, this existing will provide an acceptable fire flow at the middle school.

Peak hourly demand was used for the fire flow analysis. The peak hourly demand of 1,200 was determined from the City's flow recording charts. This is greater than the maximum daily demand (MDD) and gives a greater factor of safety. The MDD is equal to twice the amount of the average daily demand (ADD). In Appendix 2, the ADD is equal to 367 gpm (70,734 cf/day). The MDD is equal to 735 gpm.

YEAR 2003, Existing System

Year 2003 simulations use a peak hourly demand of 1,200 gpm. As noted previously, the 1,200 gpm flow was inferred from existing flow data. Results from the modeling are in **Appendix 6.**

Year 2003, Base Scenario: this simulation evaluated the existing systems ability to meet the minimum recommended fire flow standards with a peak hourly demand (PHD) of 1,200 gpm. Fire flow requirements were not met at the locations shown in Table 3-6.

Table 3-6: Year 2003 Existing System Fire Flow Deficiencies

Location	Model Label	Fire Flow @ 20 psi	Recommended Requirement
Jefferson & Block 1 Alley	JN-110	719	1, 000 gpm
Jefferson & Block 13 Alley	JN-120	768	1, 000 gpm
Jefferson & Block 26 Alley	JN-155	765	1, 000 gpm
Adams & Block 8 Alley	JN-220	688	1, 000 gpm
Adams & Block 20 Alley	JN-245	723	1, 000 gpm
Monroe & 2nd	JN-315	721	1, 000 gpm
Monroe & 4th	JN-340	948	1, 000 gpm
Fern & 5th	JS-150	791	1, 000 gpm
Fern & 6th	JS-160	758	1, 000 gpm
Rose & 6th	JS-260	946	1, 000 gpm
Cedar & 6th	JS-360	800	1, 000 gpm

Year 2003, Scenario 5: the same PHD of 1,200 gpm was used with the following upgrades to the existing system:

- South Street between Main St. & Reservation Rd — new 8" PVC
- Seventh Street between Jefferson & Monroe — new 8" PVC
- Monroe Street between 7th St. and alley west of 2nd — new 8" PVC
- Alley's in Blocks 1,2,3,9,21,25 in north section — new 8" PVC

Fire flow requirements were not met at the locations shown in Table 3-7.

Table 3-7: Year 2003 Upgraded System Fire Flow Deficiencies

Location	Model Label	Fire Flow @ 20 psi	Recommended Requirement
Fern & 5th	JS-150	791	1,000 gpm
Fern & 6th	JS-160	758	1,000 gpm
Rose & 6th	JS-260	946	1,000 gpm
Cedar & 6th	JS-360	800	1,000 gpm

YEAR 2009, Scenario 5: the Mabton distribution system was evaluated with upgrades noted in Year 2003, Scenario 5, a PHD of 1,260 gpm and connections of the 8" AC and 4" CI water lines on Sixth Street at intersections with Fern Street and Cedar Street. Fire flow requirements were not met at the location shown in Table 3-8.

Table 3-8: Year 2009 Upgraded System Fire Flow Deficiencies

Location	Model Label	Fire Flow @ 20 psi	Recommended Requirement
Fern & 5th	JS-150	944	1,000 gpm

YEAR 2023, Scenario 5: the Mabton distribution system was evaluated with upgrades noted in Year 2003, Scenario 5 and a PHD of 1,500 gpm. Fire flow requirements were not met at the location shown in Table 3-9.

Table 3-9: Year 2023 Upgraded System Fire Flow Deficiencies

Location	Model Label	Fire Flow @ 20 psi	Recommended Requirement
Fern & 5th	JS-150	922	1,000 gpm

D. SUMMARY OF SYSTEM DEFICIENCIES

Mabton's water system critical deficiency is lack of water during peak demands. An additional water source is urgently needed to provide water in the summer months.

The existing wells and reservoir do not meet the required storage requirements. This is due to the decrease in production of Wells #3 and #4. An additional well that provides 500 gpm will allow Mabton to meet existing needs and allow for future growth.

The recommended fire flow cannot be met throughout the City of Mabton. The following upgrades are considered to be the minimum upgrades needed to provide a fire flow of 1,000 gpm to all areas of the City. There are other options available, but will cost significantly more money. These recommendations that will provide overall fire flow with the least amount of cost are:

1. South Street between Main St. & Reservation Rd — new 8" PVC
2. Seventh Street between Jefferson & Monroe — new 8" PVC
3. Monroe Street between 7th St. and alley west of 2nd — new 8" PVC
4. Alley's in Blocks 1,2,3,9,21,25 in north section — new 8" PVC
5. Sixth Street "Connections" at intersections — 6th & Fern, 6th &Cedar

E. ANALYSIS OF POSSIBLE IMPROVEMENTS

Possible
Hydraulics." Section 3.D "Summary of System Deficiencies" provides recommended improvements to the distribution system. These improvements will provide adequate fire protection throughout the system.

A
production capacity and reservoir volume. The existing system cannot meet the peak demands. A new well producing 500 gpm will meet the existing storage needs and allow up to 1,166 ERU's for the system.

4. CONSERVATION PROGRAM & SOURCE SUPPLY ANALYSIS

A. CONSERVATION PROGRAM

The City of Mabton Water Conservation Program is in **Appendix 7.** Mabton will not be discontinuing any water conservation measures. The City will be implementing more measures to help determine an accurate water balance. In pr residential lawn watering was alternated by one-half the town watering on even days and the other half water on odd days of the month. The City will be implementing a time period each day that lawns can be watered. The time for watering will be from 5:00
This will avoid watering in the heat of the day when more evaporation occurs a watering all night.

In March, 2005, the City Council approved the plan to install meters at all parks. The Public Works Department is working with Spink Engineering to have the installed in June, 2005.

B. WATER RIGHT ASSESSMENT

The
G4-29212C. The Water Right Self-Assessment Form
are in **Appendix 8.** Waterright G3-00381C is for a well at the wastewatertreatment plant
and

The annual volume allowed by the water rights G3-00027c and G4-29212C is 452.4 acre-feet
greater
also listed on the Water Right Self-Assessment Form. In 2009, it is estimated that the water production will be 694.7 acre-feet, or 242.3 acre-feet over the existing water right.

existing water right. Mabton needs an additional 370 to 400 acre-feet to cover the future water needs.

Mabton received a modification to water right G4-29212C. This allows a second point of withdrawal. Another well will allow Mabton to pump up to 500 gpm. This change to the water right will not increase the total annual volume of the permit. The combined instantaneous flow rate (pumping rate) from Wells #2 and #3 is 550 gpm. This is well below the 1,400 gpm allowed by water right G3-00027C. Well #4 has a pumping rate of 450 gpm, one-half of that allowed on water right G4-29212C.

PLAN FOR ADDITIONAL WATER RIGHTS

i. Reduce water consumption and production through water conservation.
ii. Acquire available water rights in vicinity of City of Mabton and transfer water rights to the existing system. Mabton is checking the "Washington Water Exchange" web page for potential water rights to purchase and transfer.
iii. Apply for additional water rights. The City is aware no water rights are being issued by Department of Ecology at this time. The City would like to establish a priority date for the review to their application in the event that Ecology begins to issue new water rights in the Yakima Valley.
iv. The Yakima River is not consider a viable source for Mabton due to the distance required to pump water to the City, and will not be pursued at this time.

C. SOURCE SUPPLY ANALYSIS & EVALUATION OF SUPPLY ALTERNATIVES

Mabton has been using wells to supply the City with water since 1908. The City's location with respect to the Yakima River does not lend itself to a feasible option to use surface water to supplement the water supply. A surface water supply would require a large intake system, a large treatment system, a large booster pumping system and new water supply lines large enough to provide adequate water to the City system.

There are no other private or public water systems adjacent to Mabton that can be considered a reliable source of water during an emergency. The closest cities are Grandview, Prosser and Sunnyside. Prosser and Sunnyside are approximately 12 miles away and Sunnyside is on the opposite side of the Yakima River. The estimated cost of an intertie with Prosser or Sunnyside is $2,800,000. An emergency intertie is not feasible with either city.

Grandview is 5.5 miles from Mabton and on the opposite side of the Yakima River. The approximate cost an emergency intertie with Grandview is $1,700,000. An emergency intertie is intended to be used occasionally when one system cannot meet minimum demands. Mabton is in need of a constant source under the City's control. Therefore, an intertie with Grandview is not feasible.

Table 4-1: Intertie Cost Estimate

Grandview Intertie Cost Estimate		
5.5 Mile Water Line	29,040 ft x $40/ft	$1,161,600
Booster Station		$300,000
River Crossing		$300,000
Total		$1,761,600
Sunnyside or Prosser Intertie		
12 Mile Water Line	63,360 ft x $40/ft	$2,534,400
Booster Station		$300,000
Total		$2,834,400

D. WATER SUPPLY RELIABILITY ANALYSIS & WATER SHORTAGE RESPONSE PLAN

RELIABILITY

There are concerns with Mabton's water system reliability. A power outage or a well out operation could require Mabton residents to conserve water for the duration of the condition. This will depend on several factors such as the time of year, the water demand, level of water in the reservoir and which wells are out of service.

The system's water supply consists of three wells. Well #3 and Well #4 are used for normal operation. Well #2 can be used for emergency situations. Well #2 is not used on a routine basis because of the high hydrogen sulfide levels in the water. Although this presents no health hazard, the citizens have complained about the odor so much in the past, the well was removed from the system's normal operation.

Currently Well #3 and Well #4 run at the same time due to the mixing requirement for the high nitrates in Well #3. These wells are operated by pressure switches in the reservoir. Well #2 is operated manually. Additional pressure switches need to be added to the operating system to startup Well #2 when the reservoir level reaches less than 40 feet.

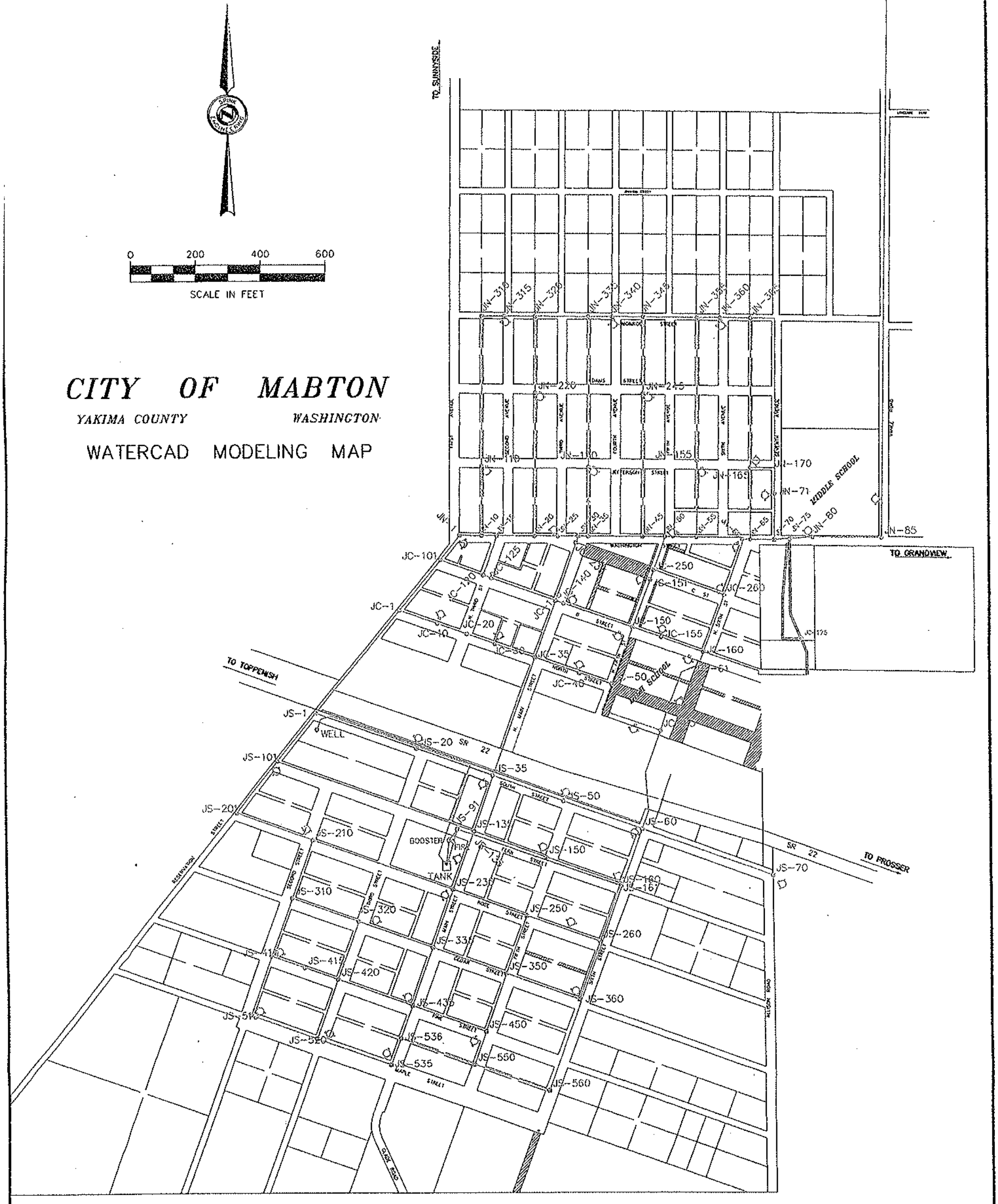
The existing water wells and reservoir do not meet the demands as shown in Appendix 5, Item 8: Existing Storage Requirement. The available storage is 611,500 gallons. The existing storage requirement is 1,051,300 gallons. This is a 440,800 gallon deficiency.

This deficiency was evident on one occasion in late May, 2003 and on August 11, 2003. In late July 2004, the water level in the reservoir was low. The City turned off

CITY OF MABTON

YAKIMA COUNTY *WASHINGTON*

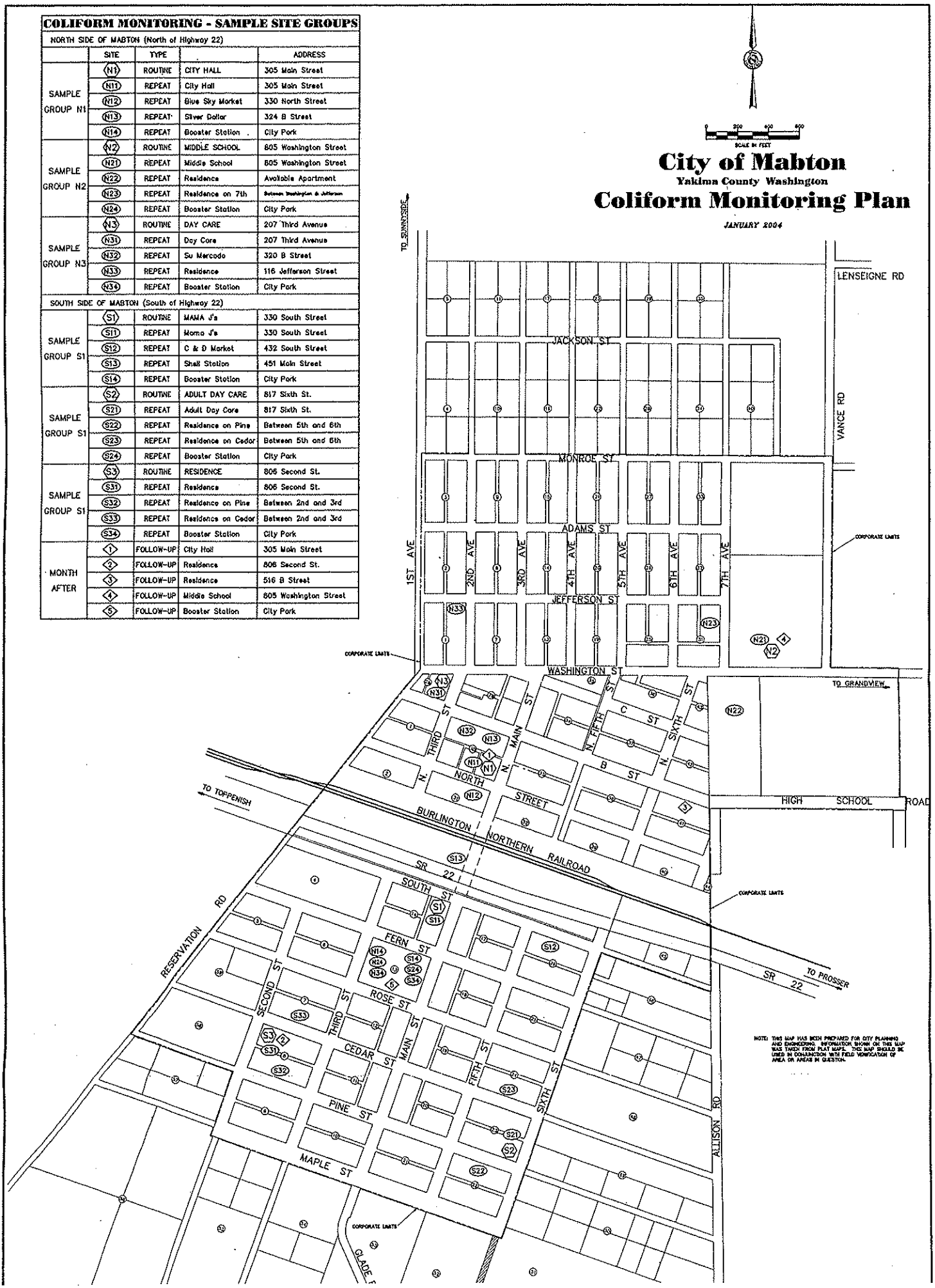
WATERCAD MODELING MAP



SPINK ENGINEERING
CIVIL & MUNICIPAL ENGINEERS
RICHALND, WASHINGTON
02134MODELMAP.DWG

COLIFORM MONITORING - SAMPLE SITE GROUPS

	SITE	TYPE		ADDRESS
NORTH SIDE OF MABTON (North of Highway 22)				
SAMPLE GROUP N1	N1	ROUTINE	CITY HALL	305 Main Street
	N11	REPEAT	City Hall	305 Main Street
	N12	REPEAT	Blue Sky Market	330 North Street
	N13	REPEAT	Silver Dollar	324 B Street
	N14	REPEAT	Booster Station	City Park
SAMPLE GROUP N2	N2	ROUTINE	MIDDLE SCHOOL	805 Washington Street
	N21	REPEAT	Middle School	805 Washington Street
	N22	REPEAT	Residence	Available Apartment
	N23	REPEAT	Residence on 7th	Between Washington & Jefferson
	N24	REPEAT	Booster Station	City Park
SAMPLE GROUP N3	N3	ROUTINE	DAY CARE	207 Third Avenue
	N31	REPEAT	Day Care	207 Third Avenue
	N32	REPEAT	Su Mercado	320 B Street
	N33	REPEAT	Residence	116 Jefferson Street
	N34	REPEAT	Booster Station	City Park
SOUTH SIDE OF MABTON (South of Highway 22)				
SAMPLE GROUP S1	S1	ROUTINE	MAMA J's	330 South Street
	S11	REPEAT	Mama J's	330 South Street
	S12	REPEAT	C & D Market	432 South Street
	S13	REPEAT	Shell Station	451 Main Street
	S14	REPEAT	Booster Station	City Park
SAMPLE GROUP S1	S2	ROUTINE	ADULT DAY CARE	817 Sixth St.
	S21	REPEAT	Adult Day Care	817 Sixth St.
	S22	REPEAT	Residence on Pine	Between 5th and 6th
	S23	REPEAT	Residence on Cedar	Between 5th and 6th
	S24	REPEAT	Booster Station	City Park
SAMPLE GROUP S1	S3	ROUTINE	RESIDENCE	806 Second St.
	S31	REPEAT	Residence	806 Second St.
	S32	REPEAT	Residence on Pine	Between 2nd and 3rd
	S33	REPEAT	Residence on Cedar	Between 2nd and 3rd
	S34	REPEAT	Booster Station	City Park
MONTH AFTER	1	FOLLOW-UP	City Hall	305 Main Street
	2	FOLLOW-UP	Residence	806 Second St.
	3	FOLLOW-UP	Residence	516 B Street
	4	FOLLOW-UP	Middle School	805 Washington Street
	5	FOLLOW-UP	Booster Station	City Park



Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

Sanitary Survey Data Report / Packet

As Of: 1/11/2011

Sentry DOH

Administrative Data

WS Id:	49650 R
WS Name:	MABTON, CITY OF
DOH Region:	Eastern
County:	YAKIMA
Group:	A
Type:	Community
Group Active Date:	01/01/1970
Delivery Address:	
Attention:	
Address:	
City:	
State:	
Zip:	

Primary Contact

Name:	Angel Reyna
Mailing Address:	
Attention:	City of Mabton
Address:	PO Box 655
City:	Mabton
State:	WA
Zip:	98935
Day / Office Phone:	(509) 894-4096
Mobile / Pager:	(509) 439-4012
Evening / Weekend:	
Fax:	(509) 894-4813
Alternate Day / Office:	
Alternate Evening / Wk:	

24 Hour / Emergency Number

Name:	
Day / Office Phone:	
Mobile / Pager:	
Evening / Weekend:	
Fax:	
Alternate Day / Office:	
Alternate Evening / Wk:	

Sanitary Survey Notes

Comment Focus	Comment Date	Author
General	*05/14/2002*	*DWAIN Conversion*

CvtDWPRO - UNSPECIFIED # OF CONNECTIONS PER JULIE D. - 5/26/93

Planning

Last Plan Date:	09/19/2005
Next Plan Due Date:	09/19/2011
Type of Plan:	Water System Plan

Operator Certification

Number of Mandatory Positions for the WS Id: 1

Operator Compliance Status: In Compliance

Mandatory	Pos. Num.	Operator Name (Last, First, MI)	Min. Cert. Req'd	Certification Held	Operator Number	Evening / Weekend Phone Number	Has CCS
Yes	1	Tijerina, Francisco	WDM 2				

Compliance

Action	Status	IssueDate	Penalty	Comply By	Completed
Directive	Completed	05/15/2006	No	06/30/2006	08/10/2006

CompActionComments: HPHR identified by Mike Wilson during a survey on 05/09/06. 07/12/2006: Reminder phone call. Reminder letter sent. 08/08/2006: Reminder call.
08/10/2006: Recd ltr confirming HPHR have been corrected.

Vio - 05/09/06 High Public Risk

Milestones: Well #3 - Seal the opening where the air tube passes through the top of the wellhead with silicone sealer or caulk.
Provide documentation from the CCCS that the water service to Mabtons wastewater treatment plan has an RPBA and that its been tested

Action	Status	IssueDate	Penalty	Comply By	Completed
Notice of Violation	Completed	07/06/2006	No	09/09/2006	07/25/2006

CompActionComments: HQ issued for LCR monitoring vio. dlgb

Milestones: collect and report lead/copper samples
notify water system users - PN

Action	Status	IssueDate	Penalty	Comply By	Completed
Violation Letter	Completed	12/12/2008	No		

Action	Status	IssueDate	Penalty	Comply By	Completed
Violation Letter	Completed	06/28/2010	No		

Action	Status	IssueDate	Penalty	Comply By	Completed
Operator Certification Temporary	Active	08/05/2010	No	08/05/2011	

CompActionComments: T2-Francisco Tijerina to achieve WDM 2. wdl

Vio - 06/14/10 Operator Certification Requirements

Milestones: Francisco Tijerina to achieve WDM 2

Action	Status	IssueDate	Penalty	Comply By	Completed
Violation Letter	Completed	10/15/2010	No		

Action	Status	IssueDate	Penalty	Comply By	Completed
Violation Letter	Completed	10/21/2010	No		

Vio - 07/01/10 Consumer Confidence Report

Source Information

Source Inventory

Src Num	Source Name	Status	Type	Use	Depth to First Open Interval	Capacity (GPM)	Source Metered	Well Tag ID
01	Well #4 - ABR606	Act	Well in Well Field	P	740	450.0	Undefined	ABR606
02	Well #2 - AFL768	Act	Well	E	1,180	200.0	Undefined	AFL768
03	Well #3 - AFL767	Act	Well	E	1,004	250.0	Yes	AFL767
04	Well #5 - ALF995	Act	Well in Well Field	P	710	500.0	Yes	ALF995
05	Wellfield / S01, S04	Act	Well Field	P	710	950.0	Yes	

Source Location

Src Num	Source Name	Qtr / Qtr	Sect	Township	Range	Lat / Long	SWTR
01	Well #4 - ABR606	SENW	01	08	22E	46.211498 / -120.002975	Does Not Apply
02	Well #2 - AFL768	SENW	01	08	22E	46.209745 / -120.000080	Does Not Apply
03	Well #3 - AFL767	SENW	01	08	22E	46.209262 / -120.000357	Does Not Apply
04	Well #5 - ALF995	SENE	01	08	22E	46.205960 / -120.004000	
05	Wellfield / S01, S04			00	00E		

Source Ratings

Src Num	Source Name	Susceptibility	IOC Vuln	VOC Vuln	SOC Vuln	Micro Vuln	RAD Vuln
01	Well #4 - ABR606	High	High	Moderate	Low	Unknown	Unknown
02	Well #2 - AFL768	Moderate			Low		
03	Well #3 - AFL767	High	Moderate	High	High	Unknown	Unknown
04	Well #5 - ALF995	High	Moderate	Moderate	Moderate	Unknown	Unknown
05	Wellfield / S01, S04	Unknown	Unknown	Unknown	Low	Unknown	Unknown

Water Treatment Plant

Source Treatment

Water Treatment Plant Id: **496500001**

Water Treatment Plant Name: Booster Station

Source Number	SrcName	SrcType	Source Status	Source Use
01	Well #4 - ABR606	Well in Well Field	Act	Permanent
03	Well #3 - AFL767	Well	Act	Emergency
04	Well #5 - ALF995	Well in Well Field	Act	Permanent

Treatment Purpose	Treatment Type	Applicable Rule	Appoval Status
DISINFECTION	CHLORINATION, GASEOUS	Total Coliform Rule	AppvCCR
ORGANICS AND COLOR REMOVAL			
TASTE/ODOR CONTROL & DECHLORINATION			

Water Quality

COLIFORM SUMMARY

	1/11	12/10	11/10	10/10	9/10	8/10	7/10	6/10	5/10	4/10	3/10	2/10
Routine Sample												
SamReq	4	3	3	3	3	3	3	3	4	4	4	4
SamTaken	0	4	4	4	4	4	0	4	4	4	4	4
TC												
EC												
FC												
Repeat Sample												
SamReq												
SamTaken												
TC												
EC												
FC												
Incidents Actual												
Acute												
Non Acute												
MajorRep												
MajorMon							1					
Min Rep												
Min Mon												

	1/10	12/09	11/09	10/09	9/09	8/09	7/09	6/09	5/09	4/09	3/09	2/09
Routine Sample												
SamReq	4	3	3	3	3	3	3	3	4	4	4	4
SamTaken	4	4	4	4	4	4	4	4	4	6	0	4
TC												
EC												
FC												
Repeat Sample												
SamReq												
SamTaken												
TC												
EC												
FC												
Incidents Actual												
Acute												
Non Acute												
MajorRep												
MajorMon											1	
Min Rep												
Min Mon												

INORGANIC CHEMICALS (IOC)

History - IOC - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
01	Well #4 - ABR606	WW	Act	P	105 11192	06/25/2009	IOC	31 of 43
01	Well #4 - ABR606	WW	Act	P	149 00661	12/30/2002	IOC	29 of 43
01	Well #4 - ABR606	WW	Act	P	081 57144	09/14/1998	IOC	25 of 43
01	Well #4 - ABR606	WW	Act	P	014 22298	09/14/1998	IOC	4 of 43
01	Well #4 - ABR606	WW	Act	P	081 22972	09/13/1994	IOC	27 of 43
01	Well #4 - ABR606	WW	Act	P	109 93015	09/29/1993	ICHEM	1 of 19
02	Well #2 - AFL768	W	Act	E	014 22297	09/14/1998	IOC	4 of 43
02	Well #2 - AFL768	W	Act	E	081 57143	09/14/1998	IOC	25 of 43
02	Well #2 - AFL768	W	Act	E	081 22974	09/13/1994	IOC	27 of 43
02	Well #2 - AFL768	W	Act	E	051 12683	08/28/1990	ICHEM	18 of 19
02	Well #2 - AFL768	W	Act	E	051 10100	09/14/1987	ICHEM	18 of 19
02	Well #2 - AFL768	W	Act	E	051 07785	12/17/1984	ICHEM	18 of 19
02	Well #2 - AFL768	W	Act	E	052 10836	10/02/1984	ICHEM	1 of 19
02	Well #2 - AFL768	W	Act	E	052 10837	10/02/1984	ICHEM	1 of 19
02	Well #2 - AFL768	W	Act	E	052 10848	10/02/1984	ICHEM	1 of 19
02	Well #2 - AFL768	W	Act	E	052 09891	01/25/1984	ICHEM	1 of 19
02	Well #2 - AFL768	W	Act	E	052 09895	01/24/1984	ICHEM	1 of 19
02	Well #2 - AFL768	W	Act	E	052 09894	01/23/1984	ICHEM	1 of 19
03	Well #3 - AFL767	W	Act	E	149 00661	12/30/2002	IOC	29 of 43
03	Well #3 - AFL767	W	Act	E	081 72032	09/12/2000	IOC	24 of 43
03	Well #3 - AFL767	W	Act	E	014 35191	09/12/2000	IOC	6 of 43
03	Well #3 - AFL767	W	Act	E	051 12684	08/28/1990	ICHEM	20 of 19
03	Well #3 - AFL767	W	Act	E	051 07786	12/17/1984	ICHEM	19 of 19
04	Well #5 - ALF995	WW	Act	P	105 11193	06/25/2009	IOC	31 of 43
04	Well #5 - ALF995	WW	Act	P	105 19503	10/11/2007	IOC	31 of 43
04	Well #5 - ALF995	WW	Act	P	105 19504	10/11/2007	IOC	31 of 43

Detail - IOC

Source 01

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well in Well Field	IOC	105	11192	06/25/2009	s01

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0004	ARSENIC	LT	mg/L	0.0030	0.0020	N	0.0103	N	0.0104
0005	BARIUM	EQ	mg/L	0.4000	0.0170	N	1.9999	N	2.0000
0006	CADMIUM	LT	mg/L	0.0020	0.0003	N	0.0049	N	0.0050
0007	CHROMIUM	LT	mg/L	0.0200	0.0047	N	0.0999	N	0.1000
0011	MERCURY	LT	mg/L	0.0004	0.0003	N	0.0019	N	0.0020
0012	SELENIUM	LT	mg/L	0.0100	0.0050	N	0.0499	N	0.0500
0110	BERYLLIUM	LT	mg/L	0.0008	0.0002	N	0.0039	N	0.0040
0111	NICKEL	LT	mg/L	0.1000	0.0100	N	0.0999	N	0.1000
0112	ANTIMONY	LT	mg/L	0.0060	0.0050	N	0.0059	N	0.0060
0113	THALLIUM	LT	mg/L	0.0020	0.0010	N	0.0019	N	0.0020
0116	CYANIDE	LT	mg/L	0.0100	0.0100	N	0.1999	N	0.2000
0019	FLUORIDE	EQ	mg/L	0.5000	1.7100	N	1.9999	N	4.0000
0114	NITRITE-N	LT	mg/L	0.2000	0.0500	N	0.4999	N	1.0000
0020	NITRATE-N	LT	mg/L	0.2000	0.0500	N	4.9990	N	10.0000
0161	TOTAL NITRATE/NITRITE	LT	mg/L	0.5000	0.5000	N		N	
0008	IRON	EQ	mg/L	0.1000	0.0232	N		N	
0010	MANGANESE	EQ	mg/L	0.0100	0.0173	N		N	
0013	SILVER	LT	mg/L	0.1000	0.0047	N		N	
0021	CHLORIDE	EQ	mg/L	20.0000	17.3000	N		N	
0022	Sulfate	EQ	mg/L	50.0000	0.7700	N		N	
0024	ZINC	LT	mg/L	0.2000	0.0200	N		N	
0014	SODIUM	EQ	mg/L	5.0000	46.8000	N		N	
0015	HARDNESS	EQ	mg/L	10.0000	43.5000	N		N	
0016	CONDUCTIVITY	EQ	Umhos/c	70.0000	320.0000	N		N	
0017	TURBIDITY	LT	NTU	0.1000	0.2000	N		N	
0018	COLOR	LT	CU	15.0000	4.0000	N		N	
0026	TDS-TOTAL DISSOLVED SOLID	EQ	mg/L	100.0000	298.0000	N		N	
0009	LEAD	LT	mg/L	0.0010	0.0005	N	9,999.0000	N	
0023	COPPER	EQ	mg/L	0.0200	0.0042	N	9,999.0000	N	
0171	ORTHOPHOSPHATE	NA	mg/L	0.1000		N		N	
0172	SILICA	NA	mg/L	1.0000		N		N	
0402	ALUMINUM	NA	mg/L	0.0500		N		N	
0403	ALKALINITY-LAB	NA	mg/L	5.0000		N		N	
0404	MAGNESIUM	EQ	mg/L	0.1000	3.4100	N		N	
0405	CALCIUM	EQ	mg/L	0.0500	11.8000	N		N	
0406	AMMONIA	NA	mg/L	1.0000		N		N	
0407	CHLORINE DIOXIDE	NA	mg/L	0.8000		N		N	
0408	OZONE	NA	mg/L	0.2000		N		N	
0409	PH	NA	PH			N		N	
0410	CHLORAMINES	NA	mg/L			N		N	
0099	INACTIVATION RATIO	NA	None			N		N	
0100	RESIDUAL CHLORINE	NA	mg/L	0.2000		N		N	
0115	ASBESTOS	NA	MFL	1.4000		N	6.9990	N	7.0000

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

Source 04

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well in Well Field	IOC	105	11193	06/25/2009	s04

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0004	ARSENIC	LT	mg/L	0.0030	0.0020	N	0.0103	N	0.0104
0005	BARIUM	EQ	mg/L	0.4000	0.0340	N	1.9999	N	2.0000
0006	CADMIUM	LT	mg/L	0.0020	0.0003	N	0.0049	N	0.0050

Source 04

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well in Well Field	IOC	105	11193	06/25/2009	s04

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0007	CHROMIUM	LT	mg/L	0.0200	0.0047	N	0.0999	N	0.1000
0011	MERCURY	LT	mg/L	0.0004	0.0003	N	0.0019	N	0.0020
0012	SELENIUM	LT	mg/L	0.0100	0.0050	N	0.0499	N	0.0500
0110	BERYLLIUM	LT	mg/L	0.0008	0.0002	N	0.0039	N	0.0040
0111	NICKEL	LT	mg/L	0.1000	0.0100	N	0.0999	N	0.1000
0112	ANTIMONY	LT	mg/L	0.0060	0.0050	N	0.0059	N	0.0060
0113	THALLIUM	LT	mg/L	0.0020	0.0010	N	0.0019	N	0.0020
0116	CYANIDE	LT	mg/L	0.0100	0.0100	N	0.1999	N	0.2000
0019	FLUORIDE	EQ	mg/L	0.5000	0.3900	N	1.9999	N	4.0000
0114	NITRITE-N	LT	mg/L	0.2000	0.0500	N	0.4999	N	1.0000
0020	NITRATE-N	LT	mg/L	0.2000	0.0500	N	4.9990	N	10.0000
0161	TOTAL NITRATE/NITRITE	LT	mg/L	0.5000	0.5000	N		N	
0008	IRON	EQ	mg/L	0.1000	0.0234	N		N	
0010	MANGANESE	EQ	mg/L	0.0100	0.0630	N		N	
0013	SILVER	LT	mg/L	0.1000	0.0047	N		N	
0021	CHLORIDE	EQ	mg/L	20.0000	10.2000	N		N	
0022	Sulfate	EQ	mg/L	50.0000	4.3600	N		N	
0024	ZINC	LT	mg/L	0.2000	0.0200	N		N	
0014	SODIUM	EQ	mg/L	5.0000	24.8000	N		N	
0015	HARDNESS	EQ	mg/L	10.0000	117.0000	N		N	
0016	CONDUCTIVITY	EQ	Umhos/c	70.0000	352.0000	N		N	
0017	TURBIDITY	LT	NTU	0.1000	0.2000	N		N	
0018	COLOR	LT	CU	15.0000	4.0000	N		N	
0026	TDS-TOTAL DISSOLVED SOLID	EQ	mg/L	100.0000	250.0000	N		N	
0009	LEAD	LT	mg/L	0.0010	0.0005	N	9,999.0000	N	
0023	COPPER	LT	mg/L	0.0200	0.0020	N	9,999.0000	N	
0171	ORTHOPHOSPHATE	NA	mg/L	0.1000		N		N	
0172	SILICA	NA	mg/L	1.0000		N		N	
0402	ALUMINUM	NA	mg/L	0.0500		N		N	
0403	ALKALINITY-LAB	NA	mg/L	5.0000		N		N	
0404	MAGNESIUM	EQ	mg/L	0.1000	10.5000	N		N	
0405	CALCIUM	EQ	mg/L	0.0500	29.7000	N		N	
0406	AMMONIA	NA	mg/L	1.0000		N		N	
0407	CHLORINE DIOXIDE	NA	mg/L	0.8000		N		N	
0408	OZONE	NA	mg/L	0.2000		N		N	
0409	PH	NA	PH			N		N	
0410	CHLORAMINES	NA	mg/L			N		N	
0099	INACTIVATION RATIO	NA	None			N		N	
0100	RESIDUAL CHLORINE	NA	mg/L	0.2000		N		N	
0115	ASBESTOS	NA	MFL	1.4000		N	6.9990	N	7.0000

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

NITRATE / NITRITE

History - IOC - Analyte Group

Src Num	Source Name	Source Type	Source Type	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
01	Well #4 - ABR606	WW	Act	P	151 18449	09/14/2010	NIT	3 of 3
01	Well #4 - ABR606	WW	Act	P	151 17649	09/07/2010	NIT	3 of 3
01	Well #4 - ABR606	WW	Act	P	151 17010	08/30/2010	NIT	3 of 3
01	Well #4 - ABR606	WW	Act	P	151 16155	08/17/2010	NIT	3 of 3
01	Well #4 - ABR606	WW	Act	P	151 11871	06/29/2010	NIT	3 of 3
01	Well #4 - ABR606	WW	Act	P	151 10838	06/14/2010	NIT	3 of 3
01	Well #4 - ABR606	WW	Act	P	151 09343	05/24/2010	NIT	3 of 3
01	Well #4 - ABR606	WW	Act	P	151 08490	05/11/2010	NIT	3 of 3
02	Well #2 - AFL768	W	Act	E	151 11449	07/09/2007	NIT	3 of 3
02	Well #2 - AFL768	W	Act	E	151 10548	06/25/2007	NIT	3 of 3
02	Well #2 - AFL768	W	Act	E	151 16049	09/05/2006	NIT	3 of 3
02	Well #2 - AFL768	W	Act	E	151 14976	08/21/2006	NIT	3 of 3
02	Well #2 - AFL768	W	Act	E	151 13724	08/07/2006	NIT	3 of 3
02	Well #2 - AFL768	W	Act	E	151 13105	08/01/2005	NIT	3 of 3
02	Well #2 - AFL768	W	Act	E	151 09712	06/13/2005	NIT	3 of 3
02	Well #2 - AFL768	W	Act	E	105 13716	08/09/2004	NIT	3 of 3
03	Well #3 - AFL767	W	Act	E	151 14696	08/20/2007	NIT	3 of 3
03	Well #3 - AFL767	W	Act	E	151 13478	08/06/2007	NIT	3 of 3
03	Well #3 - AFL767	W	Act	E	151 12477	07/23/2007	NIT	3 of 3
03	Well #3 - AFL767	W	Act	E	151 11449	07/09/2007	NIT	3 of 3
03	Well #3 - AFL767	W	Act	E	151 10548	06/25/2007	NIT	3 of 3
03	Well #3 - AFL767	W	Act	E	151 10055	06/18/2007	NIT	3 of 3
03	Well #3 - AFL767	W	Act	E	151 08120	05/21/2007	NIT	3 of 3
03	Well #3 - AFL767	W	Act	E	105 05755	04/13/2007	NIT	3 of 3
04	Well #5 - ALF995	WW	Act	P	151 18450	09/14/2010	NIT	3 of 3
04	Well #5 - ALF995	WW	Act	P	151 17649	09/07/2010	NIT	3 of 3
04	Well #5 - ALF995	WW	Act	P	151 17010	08/30/2010	NIT	3 of 3
04	Well #5 - ALF995	WW	Act	P	151 16155	08/17/2010	NIT	3 of 3
04	Well #5 - ALF995	WW	Act	P	151 11871	06/29/2010	NIT	3 of 3
04	Well #5 - ALF995	WW	Act	P	151 10838	06/14/2010	NIT	3 of 3
04	Well #5 - ALF995	WW	Act	P	151 09343	05/24/2010	NIT	3 of 3
04	Well #5 - ALF995	WW	Act	P	151 08490	05/11/2010	NIT	3 of 3

Detail - NIT

Source 01 — Source Status - Act — Source Type - Well in Well Field

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
151 18449	09/14/2010	0020	NITRATE-N	LT	mg/L	0.2000	0.0500	N	4.9990	N	10.0000
151 18449	09/14/2010	0114	NITRITE-N	LT	mg/L	0.2000	0.0500	N	0.4999	N	1.0000
151 17649	09/07/2010	0020	NITRATE-N	LT	mg/L	0.2000	0.0500	N	4.9990	N	10.0000
151 17649	09/07/2010	0114	NITRITE-N	LT	mg/L	0.2000	0.0500	N	0.4999	N	1.0000
151 17010	08/30/2010	0020	NITRATE-N	LT	mg/L	0.2000	0.0500	N	4.9990	N	10.0000
151 17010	08/30/2010	0114	NITRITE-N	LT	mg/L	0.2000	0.0500	N	0.4999	N	1.0000
151 16155	08/17/2010	0020	NITRATE-N	LT	mg/L	0.2000	0.0500	N	4.9990	N	10.0000
151 16155	08/17/2010	0114	NITRITE-N	LT	mg/L	0.2000	0.0500	N	0.4999	N	1.0000
151 14696	08/20/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.9400	Y	4.9990	N	10.0000
151 14696	08/20/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 12477	07/23/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.5400	Y	4.9990	N	10.0000
151 12477	07/23/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 16049	09/05/2006	0020	NITRATE-N	EQ	mg/L	0.2000	6.5600	Y	4.9990	N	10.0000
151 16049	09/05/2006	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 14976	08/21/2006	0020	NITRATE-N	EQ	mg/L	0.2000	6.6600	Y	4.9990	N	10.0000
151 14976	08/21/2006	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000

Source 02 — Source Status - Act — Source Type - Well

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
151 11449	07/09/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.1800	Y	4.9990	N	10.0000
151 11449	07/09/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 10548	06/25/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.0400	Y	4.9990	N	10.0000
151 10548	06/25/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 16049	09/05/2006	0020	NITRATE-N	EQ	mg/L	0.2000	6.5600	Y	4.9990	N	10.0000
151 16049	09/05/2006	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 14976	08/21/2006	0020	NITRATE-N	EQ	mg/L	0.2000	6.6600	Y	4.9990	N	10.0000
151 14976	08/21/2006	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000

Source 03 — Source Status - Act — Source Type - Well

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
151 14696	08/20/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.9400	Y	4.9990	N	10.0000
151 14696	08/20/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 13478	08/06/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.1000	Y	4.9990	N	10.0000
151 13478	08/06/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 12477	07/23/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.5400	Y	4.9990	N	10.0000
151 12477	07/23/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 11449	07/09/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.1800	Y	4.9990	N	10.0000
151 11449	07/09/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 10548	06/25/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.0400	Y	4.9990	N	10.0000
151 10548	06/25/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 16049	09/05/2006	0020	NITRATE-N	EQ	mg/L	0.2000	6.5600	Y	4.9990	N	10.0000
151 16049	09/05/2006	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 14976	08/21/2006	0020	NITRATE-N	EQ	mg/L	0.2000	6.6600	Y	4.9990	N	10.0000
151 14976	08/21/2006	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000

Source 04 — Source Status - Act — Source Type - Well in Well Field

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
151 18450	09/14/2010	0020	NITRATE-N	LT	mg/L	0.2000	0.0500	N	4.9990	N	10.0000
151 18450	09/14/2010	0114	NITRITE-N	LT	mg/L	0.2000	0.0500	N	0.4999	N	1.0000
151 17649	09/07/2010	0020	NITRATE-N	LT	mg/L	0.2000	0.0500	N	4.9990	N	10.0000
151 17649	09/07/2010	0114	NITRITE-N	LT	mg/L	0.2000	0.0500	N	0.4999	N	1.0000
151 17010	08/30/2010	0020	NITRATE-N	LT	mg/L	0.2000	0.0500	N	4.9990	N	10.0000
151 17010	08/30/2010	0114	NITRITE-N	LT	mg/L	0.2000	0.0500	N	0.4999	N	1.0000
151 16155	08/17/2010	0020	NITRATE-N	LT	mg/L	0.2000	0.0500	N	4.9990	N	10.0000
151 16155	08/17/2010	0114	NITRITE-N	LT	mg/L	0.2000	0.0500	N	0.4999	N	1.0000
151 14696	08/20/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.9400	Y	4.9990	N	10.0000

Source 04 **Source Status - Act** **Source Type - Well in Well Field**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
151 14696	08/20/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 13478	08/06/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.1000	Y	4.9990	N	10.0000
151 13478	08/06/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 11449	07/09/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.1800	Y	4.9990	N	10.0000
151 11449	07/09/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000
151 10548	06/25/2007	0020	NITRATE-N	EQ	mg/L	0.2000	7.0400	Y	4.9990	N	10.0000
151 10548	06/25/2007	0114	NITRITE-N	LT	mg/L	0.2000	0.1000	N	0.4999	N	1.0000

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

ARSENIC

Detail - Arsenic

Source 01 **Source Status - Act** **Source Type - Well in Well Field**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
105 11192	06/25/2009	0004	ARSENIC	LT	mg/L	0.0030	0.0020	N	0.0103	N	0.0104
			No Samples with Arsenic being Analyzed were found.								
149 00661	12/30/2002	0004	ARSENIC	EQ	mg/L	0.0030	0.0040	N	0.0103	N	0.0104
			No Samples with Arsenic being Analyzed were found.								

Source 02 **Source Status - Act** **Source Type - Well**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
081 57143	09/14/1998	0004	ARSENIC	LT	mg/L	0.0030	0.0100	N	0.0103	N	0.0104
			No Samples with Arsenic being Analyzed were found.								

Source 03 **Source Status - Act** **Source Type - Well**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
149 00661	12/30/2002	0004	ARSENIC	EQ	mg/L	0.0030	0.0040	N	0.0103	N	0.0104
			No Samples with Arsenic being Analyzed were found.								

Source 04 **Source Status - Act** **Source Type - Well in Well Field**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
105 11193	06/25/2009	0004	ARSENIC	LT	mg/L	0.0030	0.0020	N	0.0103	N	0.0104
			No Samples with Arsenic being Analyzed were found.								

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

VOLATILE ORGANIC CHEMICALS (VOC)

History - VOC - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
01	Well #4 - ABR606	WW	Act	P	089 73688	08/23/2006	VOC1	62 of 62
01	Well #4 - ABR606	WW	Act	P	046 16437	06/21/2006	VOC1	61 of 62
01	Well #4 - ABR606	WW	Act	P	089 72401	10/11/2005	VOC1	61 of 62
01	Well #4 - ABR606	WW	Act	P	089 72017	07/20/2005	VOC1	61 of 62
01	Well #4 - ABR606	WW	Act	P	107 25704	03/19/2004	VOC1	59 of 62
01	Well #4 - ABR606	WW	Act	P	149 00662	12/30/2002	VOC1	60 of 62
01	Well #4 - ABR606	WW	Act	P	081 57700	10/13/1998	VOC1	61 of 62
01	Well #4 - ABR606	WW	Act	P	081 22973	09/12/1994	VOC2	54 of 57
01	Well #4 - ABR606	WW	Act	P	054 02799	11/13/1990	VOC1	57 of 62
01	Well #4 - ABR606	WW	Act	P	054 01587	10/31/1989	VOC1	57 of 62
02	Well #2 - AFL768	W	Act	E	081 57698	10/12/1998	VOC1	61 of 62
02	Well #2 - AFL768	W	Act	E	081 22975	09/12/1994	VOC2	54 of 57
03	Well #3 - AFL767	W	Act	E	089 74248	12/19/2006	VOC1	61 of 62
03	Well #3 - AFL767	W	Act	E	089 73688	08/23/2006	VOC1	62 of 62
03	Well #3 - AFL767	W	Act	E	089 72400	10/11/2005	VOC1	61 of 62
03	Well #3 - AFL767	W	Act	E	089 72015	07/20/2005	VOC1	61 of 62
03	Well #3 - AFL767	W	Act	E	107 25703	03/19/2004	VOC1	59 of 62
03	Well #3 - AFL767	W	Act	E	149 00662	12/30/2002	VOC1	60 of 62
03	Well #3 - AFL767	W	Act	E	054 01588	10/31/1989	VOC1	57 of 62
04	Well #5 - ALF995	WW	Act	P	089 77185	10/01/2008	VOC1	61 of 62
04	Well #5 - ALF995	WW	Act	P	089 77119	09/12/2008	VOC1	61 of 62
04	Well #5 - ALF995	WW	Act	P	089 76605	06/12/2008	VOC1	61 of 62
04	Well #5 - ALF995	WW	Act	P	089 76279	03/24/2008	VOC1	62 of 62

Detail - VOC

Source 01

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well in Well Field	VOC1	089	73688	08/23/2006	bs

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0027	CHLOROFORM	EQ	ug/L	0.5000	0.9000	Y	9,999.0000	N	
0028	BROMODICHLOROMETHANE	EQ	ug/L	0.5000	2.2000	Y	9,999.0000	N	
0029	DIBROMOCHLOROMETHANE	EQ	ug/L	0.5000	7.8000	Y	9,999.0000	N	
0030	BROMOFORM	EQ	ug/L	0.5000	9.4000	Y	9,999.0000	N	
0031	TOTAL TRIHALOMETHANE	EQ	ug/L		20.3000	N	9,999.0000	N	80.0000

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

SYNTHETIC ORGANIC CHEMICALS (SOC)

History - SOC - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
01	Well #4 - ABR606	WW	Act	P	046 16438	06/21/2006	HERB1	16 of 18
01	Well #4 - ABR606	WW	Act	P	046 16438	06/21/2006	INSECT1	10 of 10
01	Well #4 - ABR606	WW	Act	P	046 16438	06/21/2006	PEST1	59 of 66
01	Well #4 - ABR606	WW	Act	P	089 83855	07/20/2005	HERB1	17 of 18
01	Well #4 - ABR606	WW	Act	P	089 83855	07/20/2005	INSECT1	10 of 10
01	Well #4 - ABR606	WW	Act	P	089 83855	07/20/2005	PEST1	60 of 66
01	Well #4 - ABR606	WW	Act	P	125 58061	09/14/1998	HERB1	17 of 18
01	Well #4 - ABR606	WW	Act	P	125 58061	09/14/1998	INSECT1	10 of 10
01	Well #4 - ABR606	WW	Act	P	125 58061	09/14/1998	PEST1	60 of 66
02	Well #2 - AFL768	W	Act	E	081 57699	10/12/1998	FUMIGANT	2 of 4
02	Well #2 - AFL768	W	Act	E	125 58060	09/14/1998	HERB1	17 of 18
02	Well #2 - AFL768	W	Act	E	125 58060	09/14/1998	INSECT1	10 of 10
02	Well #2 - AFL768	W	Act	E	125 58060	09/14/1998	PEST1	60 of 66
03	Well #3 - AFL767	W	Act	E	089 85240	12/19/2006	PEST1	60 of 66
03	Well #3 - AFL767	W	Act	E	089 84849	08/23/2006	PEST1	60 of 66
03	Well #3 - AFL767	W	Act	E	089 83854	07/20/2005	HERB1	17 of 18
03	Well #3 - AFL767	W	Act	E	089 83854	07/20/2005	INSECT1	10 of 10
03	Well #3 - AFL767	W	Act	E	089 83854	07/20/2005	PEST1	60 of 66
04	Well #5 - ALF995	WW	Act	P	089 88227	06/25/2009	HERB1	14 of 18
04	Well #5 - ALF995	WW	Act	P	089 87435	10/01/2008	HERB1	16 of 18
04	Well #5 - ALF995	WW	Act	P	089 87435	10/01/2008	INSECT1	10 of 10
04	Well #5 - ALF995	WW	Act	P	089 87435	10/01/2008	PEST1	60 of 66
04	Well #5 - ALF995	WW	Act	P	089 87382	09/12/2008	HERB1	16 of 18
04	Well #5 - ALF995	WW	Act	P	089 87382	09/12/2008	INSECT1	10 of 10
04	Well #5 - ALF995	WW	Act	P	089 87382	09/12/2008	PEST1	60 of 66
04	Well #5 - ALF995	WW	Act	P	089 86959	06/12/2008	INSECT1	10 of 10
04	Well #5 - ALF995	WW	Act	P	089 86959	06/12/2008	PEST1	60 of 66
04	Well #5 - ALF995	WW	Act	P	089 86720	03/24/2008	HERB1	16 of 18
04	Well #5 - ALF995	WW	Act	P	089 86720	03/24/2008	INSECT1	10 of 10
04	Well #5 - ALF995	WW	Act	P	089 86720	03/24/2008	PEST1	60 of 66

Detail - SOC

No Analytes Detected for Testpanel "HERB1" where 10 analytes were tested.
No Analytes Detected for Testpanel "PEST1" where 55 analytes were tested.
No Analytes Detected for Testpanel "INSECT1" where 8 analytes were tested.

Halo Acetic Acids (HAA5)

History - DBP - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
Dist					089 80086	09/27/2010	HAA5	7 of 8
Dist					089 84956	09/14/2006	HAA5	7 of 8

Halo Acetic Acids (HAA5)

No Analytes Detected for Testpanel "HAA5"

Total Trihalomethane (THM)

History - DBP - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
Dist					089 70006	09/27/2010	THM	5 of 6
Dist					089 73831	09/14/2006	THM	5 of 6

Total Trihalomethane (THM)

No Analytes Detected for Testpanel "THM" where 1 analytes were tested.

RADIONUECLIDES (RAD)

History - RAD - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
Dist					101 03094	02/20/1990	RAD	1 of 13
Dist					101 00237	12/10/1980	RAD	1 of 13
01	Well #4 - ABR606	WW	Act	P	028 34396	04/25/2007	RAD	2 of 13
01	Well #4 - ABR606	WW	Act	P	028 32534	09/07/2006	RAD	3 of 13
01	Well #4 - ABR606	WW	Act	P	101 06035	09/14/1998	RAD	2 of 13
02	Well #2 - AFL768	W	Act	E	101 06036	09/14/1998	RAD	3 of 13
03	Well #3 - AFL767	W	Act	E	028 33323	12/19/2006	RAD	4 of 13
03	Well #3 - AFL767	W	Act	E	028 32534	09/07/2006	RAD	3 of 13
03	Well #3 - AFL767	W	Act	E	028 25159	12/12/2003	RAD	1 of 13
03	Well #3 - AFL767	W	Act	E	023 67641	09/12/2000	RAD	3 of 13
04	Well #5 - ALF995	WW	Act	P	142 44001	06/21/2006	RAD	2 of 13

Detail - RAD

Source 01

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well in Well Field	RAD	028	34396	04/25/2007	well 4 s01

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0166	RADIUM 228	EQ	pCi/L	1.0000	0.6500	N	4.9999	N	5.0000
0165	GROSS ALPHA	EQ	pCi/L	3.0000	0.4500	N	14.9999	N	

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

LEAD AND COPPER (LCR)

Monitoring Level	Start	End	Pb 90th	Pb Hi	Cu 90th	Cu Hi	Sam Reqt	Sam Taken	AL Pb Inc	AL Cu Inc	Mon Inc
Base3Y	01/2010	12/2012					20	0			
Base3Y	01/2007	12/2009	.0011	.0099	.0482	.0990	20	20			
Base3Y	01/2004	12/2006	.0025	.0108	.0478	.1480	20	20			
Base3Y	01/2003	12/2005					20	0			Mon
Base3Y	01/2002	12/2004					20	0			Mon
Base3Y	01/2001	12/2003					10	0			Mon
Base3Y	01/1998	12/2000	.0050	.0070	.2000	.2000	10	10			
AnnualRed	01/1997	12/1997	.0020	.0110	.1200	.1500	5	10			
Second6Mo	07/1994	12/1994					20	20			
First6Mo	01/1994	06/1994					20	20			

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

WATER FACILITIES INVENTORY (WFI) FORM

ONE FORM PER SYSTEM

Quarter: 1
Updated: 11/08/2010
Printed: 01/11/2011
WFI Printed For: Annual
Submission Reason: Source Update

RETURN TO: Eastern Regional Office, 16201 E Indiana, Suite 1500, Spokane Valley, WA, 99216

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
49650 R	MABTON, CITY OF	YAKIMA	A	Comm

6. PRIMARY CONTACT NAME & MAILING ADDRESS

ANGEL REYNA [MAYOR]
CITY OF MABTON
PO BOX 655
MABTON, WA 98935

7. OWNER NAME & MAILING ADDRESS — **8. Owner Number** 003522

MABTON, CITY OF
ANGEL REYNA
PO BOX 655
MABTON, WA 98935
TITLE: MAYOR

STREET ADDRESS IF DIFFERENT FROM ABOVE
ATTN
ADDRESS 305 MAIN STREET
CITY MABTON STATE WA ZIP 98935

STREET ADDRESS IF DIFFERENT FROM ABOVE
ATTN
ADDRESS 305 MAIN ST
CITY MABTON STATE WA ZIP 98935

9. 24 HOUR PRIMARY CONTACT INFORMATION

Primary Contact Daytime Phone: (509) 894-4096
Primary Contact Mobile/Cell Phone: (509) 439-4012
Primary Contact Evening Phone:
Fax: (509) 894-4813 E-mail: angel.reyna@co.yakima.wa.us

10. OWNER CONTACT INFORMATION

Owner Daytime Phone: (509) 894-4096
Owner Mobile/Cell Phone: (509) 439-4012
Owner Evening Phone:
Fax: (509) 894-4813 E-mail: angel.reyna@co.yakima.wa.us

WAC 246-290-420(9) requires that water systems provide 24-hour contact information for emergencies.

11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)

- [X] Not applicable (Skip to #12)
- [ ] Owned and Managed — SMA NAME: _____ SMA Number: _____
- [ ] Managed Only
- [ ] Owned Only

12. WATER SYSTEM CHARACTERISTICS (mark ALL that apply)

- [ ] Agricultural
- [X] Commercial / Business
- [X] Day Care
- [X] Food Service/Food Permit
- [ ] 1,000 or more person event for 2 or more days per year
- [ ] Hospital/Clinic
- [ ] Industrial
- [ ] Licensed Residential Facility
- [ ] Lodging
- [ ] Recreational / RV Park
- [X] Residential
- [X] School
- [ ] Temporary Farm Worker
- [X] Other (church, fire station, etc.): _____

13. WATER SYSTEM OWNERSHIP (mark only one)

- [ ] Association
- [ ] County
- [ ] Investor
- [ ] Special District
- [X] City / Town
- [ ] Federal
- [ ] Private
- [ ] State

14. STORAGE CAPACITY (gallons)

800,000

15 Source: Number	16 SOURCE NAME (LIST UTILITY'S NAME FOR SOURCE AND WELL TAG ID NUMBER. Example: WELL #1 XYZ456. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S NAME Example: SEATTLE)	17 INTERTIE (INTERTIE SYSTEM ID NUMBER)	18 SOURCE CATEGORY: WELL	WELL FIELD	WELL IN A WELL FIELD	SPRING	SPRING FIELD	SPRING IN SPRINGFIELD	SEA WATER	SURFACE WATER	RANNEY / INF. GALLERY	OTHER	19 USE: PERMANENT	SEASONAL	EMERGENCY	20 SOURCE METERED	21 TREATMENT: NONE	CHLORINATION	FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	22 DEPTH: DEPTH TO FIRST OPEN INTERVAL IN FEET	23 CAPACITY (GALLONS PER MINUTE)	24 SOURCE LOCATION: 1/4, 1/4 SECTION	SECTION NUMBER	TOWNSHIP	RANGE
S01	Well #4 - ABR606				X								X					X				X	740	450	SE NW	01	08N	22E
S02	Well #2 - AFL768			X											X			X					1180	200	SE NW	01	08N	22E
S03	Well #3 - AFL767			X											X	Y		X				X	1004	250	SE NW	01	08N	22E
S04	Well #5 - ALF995				X								X			Y		X					425	500	SE NE	01	08N	22E
S05	Wellfield / S01, S04				X								X			Y		X					420	950			00N	00E

WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
49650 R	MABTON, CITY OF	YAKIMA	A	Comm

	ACTIVE SERVICE CONNECTIONS	DOH USE ONLY! CALCULATED ACTIVE CONNECTIONS	DOH USE ONLY! APPROVED CONNECTIONS
25. SINGLE FAMILY RESIDENCES (How many of the following do you have?)	0	894	632
A. Full Time Single Family Residences (Occupied 180 days or *more* per year)	547		
B. Part Time Single Family Residences (Occupied *less than* 180 days per year)	0		
26. MULTI-FAMILY RESIDENTIAL BUILDINGS (How many of the following do you have?)			
A. Apartment Buildings, condos, duplexes, barracks, dorms	89		
B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied *more than* 180 days/year	347		
C. Part Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied *less than* 180 days/year	0		
27. NON-RESIDENTIAL CONNECTIONS (How many of the following do you have?)			
A. Recreational Services and/or Transient Accommodations (Campsites, RV sites, hotel/motel/overnight units)	0	0	0
B. Institutional, Commercial/Business, School, Day Care, Industrial Services, etc.	39	39	39
28. TOTAL SERVICE CONNECTIONS		933	671

29. FULL-TIME RESIDENTIAL POPULATION	
A. How many residents are served by this system 180 or *more* days per year?	2045

30. PART-TIME RESIDENTIAL POPULATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many part-time residents are present each month?												
B. How many days per month are they present?												

31. TEMPORARY & TRANSIENT USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
How many total visitors, attendees, travelers, campers, patients or customers have access to the water system each month?												
How many days per month is water accessible to the public?												

32. REGULAR NON-RESIDENTIAL USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
If you have schools, daycares, or businesses connected to your water system, how many students daycare children and/or employees are present each month?	1290	1285	1287	1290	1285	600	600	600	1130	1200	1200	1200
How many days per month are they present?	25	25	25	25	25	25	25	25	25	25	25	25

33. ROUTINE COLIFORM SCHEDULE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	4	4	4	4	4	3	3	3	3	3	3	3

35. Reason for Submitting WFI:

☐ Update - Change ☐ Update - No Change ☐ Inactivate ☐ Re-Activate ☐ Name Change ☐ New System ☐ Other

36. I certify that the information stated on this WFI form is correct to the best of my knowledge.

SIGNATURE: DATE:

PRINT NAME: TITLE:

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

WATER FACILITIES INVENTORY (WFI) FORM

ONE FORM PER SYSTEM

Quarter: 1
Updated: 11/08/2010
Printed: 01/11/2011
WFI Printed For: Annual
Submission Reason: Source Update

RETURN TO: Eastern Regional Office, 16201 E Indiana, Suite 1500, Spokane Valley, WA, 99216

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
49650 R	MABTON, CITY OF	YAKIMA	A	Comm

6. PRIMARY CONTACT NAME & MAILING ADDRESS

ANGEL REYNA [MAYOR]
CITY OF MABTON
PO BOX 655
MABTON, WA 98935

STREET ADDRESS IF DIFFERENT FROM ABOVE
ATTN
ADDRESS 305 MAIN STREET
CITY MABTON STATE WA ZIP 98935

7. OWNER NAME & MAILING ADDRESS **8. Owner Number** 003522

MABTON, CITY OF
ANGEL REYNA TITLE: MAYOR
PO BOX 655
MABTON, WA 98935

STREET ADDRESS IF DIFFERENT FROM ABOVE
ATTN
ADDRESS 305 MAIN ST
CITY MABTON STATE WA ZIP 98935

9. 24 HOUR PRIMARY CONTACT INFORMATION

Primary Contact Daytime Phone: (509) 894-4096
Primary Contact Mobile/Cell Phone: (509) 439-4012
Primary Contact Evening Phone:
Fax: (509) 894-4813 E-mail: angel.reyna@co.yakima.wa.us

10. OWNER CONTACT INFORMATION

Owner Daytime Phone: (509) 894-4096
Owner Mobile/Cell Phone: (509) 439-4012
Owner Evening Phone:
Fax: (509) 894-4813 E-mail: angel.reyna@co.yakima.wa.us

WAC 246-290-420(9) requires that water systems provide 24-hour contact information for emergencies.

11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)

- [X] Not applicable (Skip to #12)
- [ ] Owned and Managed
- [ ] Managed Only
- [ ] Owned Only

SMA NAME: SMA Number:

12. WATER SYSTEM CHARACTERISTICS (mark ALL that apply)

- [ ] Agricultural
- [X] Commercial / Business
- [X] Day Care
- [X] Food Service/Food Permit
- [ ] 1,000 or more person event for 2 or more days per year
- [ ] Hospital/Clinic
- [ ] Industrial
- [ ] Licensed Residential Facility
- [ ] Lodging
- [ ] Recreational / RV Park
- [X] Residential
- [X] School
- [ ] Temporary Farm Worker
- [X] Other (church, fire station, etc.):

13. WATER SYSTEM OWNERSHIP (mark only one)

- [ ] Association
- [ ] County
- [ ] Investor
- [ ] Special District
- [X] City / Town
- [ ] Federal
- [ ] Private
- [ ] State

14. STORAGE CAPACITY (gallons)

800,000

15 Source Number	16 SOURCE NAME (LIST UTILITY'S NAME FOR SOURCE AND WELL TAG ID NUMBER. Example: WELL #1 XYZ456. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S NAME. Example: SEATTLE)	17 INTERTIE (INTERTIE SYSTEM ID NUMBER)	18 SOURCE CATEGORY: WELL	WELL FIELD	WELL IN A WELL FIELD	SPRING	SPRING FIELD	SPRING IN SPRINGFIELD	SEA WATER	SURFACE WATER	RANNEY / INF. GALLERY	OTHER	19 USE: PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	20 TREATMENT: NONE	CHLORINATION	FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	22 DEPTH: TO FIRST OPEN INTERVAL IN FEET	23 CAPACITY (GALLONS PER MINUTE)	24 SOURCE LOCATION: 1/4, 1/4 SECTION	SECTION NUMBER	TOWNSHIP	RANGE
S01	Well #4 - ABR606				X								X					X				X	740	450	SE NW	01	08N	22E
S02	Well #2 - AFL768		X												X			X					1180	200	SE NW	01	08N	22E
S03	Well #3 - AFL767		X												X	Y		X				X	1004	250	SE NW	01	08N	22E
S04	Well #5 - ALF995				X								X			Y		X					425	500	SE NE	01	08N	22E
S05	Wellfield / S01, S04			X									X			Y		X					420	950			00N	00E

WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
49650 R	MABTON, CITY OF	YAKIMA	A	Comm

	ACTIVE SERVICE CONNECTIONS	DOH USE ONLY! CALCULATED ACTIVE CONNECTIONS	DOH USE ONLY! APPROVED CONNECTIONS
25. SINGLE FAMILY RESIDENCES (How many of the following do you have?)	0	894	632
A. Full Time Single Family Residences (Occupied 180 days or *more* per year)	547		
B. Part Time Single Family Residences (Occupied *less than* 180 days per year)	0		
26. MULTI-FAMILY RESIDENTIAL BUILDINGS (How many of the following do you have?)			
A. Apartment Buildings, condos, duplexes, barracks, dorms	89		
B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied *more than* 180 days/year	347		
C. Part Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied *less than* 180 days/year	0		
27. NON-RESIDENTIAL CONNECTIONS (How many of the following do you have?)			
A. Recreational Services and/or Transient Accommodations (Campsites, RV sites, hotel/motel/overnight units)	0	0	0
B. Institutional, Commercial/Business, School, Day Care, Industrial Services, etc.	39	39	39
28. TOTAL SERVICE CONNECTIONS		933	671

29. FULL-TIME RESIDENTIAL POPULATION

A. How many residents are served by this system 180 or *more* days per year? 2045

30. PART-TIME RESIDENTIAL POPULATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many part-time residents are present each month?												
B. How many days per month are they present?												

31. TEMPORARY & TRANSIENT USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
How many total visitors, attendees, travelers, campers, patients or customers have access to the water system each month?												
How many days per month is water accessible to the public?												

32. REGULAR NON-RESIDENTIAL USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
If you have schools, daycares, or businesses connected to your water system, how many students daycare children and/or employees are present each month?	1290	1285	1287	1290	1285	600	600	600	1130	1200	1200	1200
How many days per month are they present?	25	25	25	25	25	25	25	25	25	25	25	25

33. ROUTINE COLIFORM SCHEDULE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	4	4	4	4	4	3	3	3	3	3	3	3

35. Reason for Submitting WFI:

☐ Update - Change ☐ Update - No Change ☐ Inactivate ☐ Re-Activate ☐ Name Change ☐ New System ☐ Other

36. I certify that the information stated on this WFI form is correct to the best of my knowledge.

SIGNATURE: DATE:

PRINT NAME: TITLE:

APPENDIX N

WATERLINE SPECIFICATIONS

WATERLINE SPECIFICATIONS

1 WATER PIPE

1.1 GENERAL

The work covered in this section shall include the furnishing, installation, and testing of the water piping, valves, tees, fittings, and other appurtenances and incidental work required to construct the water facility as shown on construction plans and in accordance with Washington State Standard Specifications 7-09 through 7-15, and as herein modified.

In case of discrepancies between the two different specifications, following is the order of procedure:

A. These City of Mabton Waterline Specifications.

B. Washington State Standard Specifications.

1.2 APPROVED PIPE

POLYVINYL CHLORIDE (PVC) PIPE shall conform to the requirements of AWWA designation C900 for Class 150 (DR18).

1.3 PIPE COUPLING

POLYVINYL CHLORIDE PIPE COUPLING shall be integral bell and spigot with elastomeric gasket seals, and shall be "Ring-Tite" as manufactured by Johns-Manville, or an approved equal.

1.4 INSTALLATION

Pipe shall be installed in accordance with the manufacturer's specifications for the type of approved pipe used. The Contractor shall construct the pipeline in accordance with the requirements of Standard Specifications 7-10 and 7-11 as herein modified.

1.5 TRENCH EXCAVATION AND BACKFILL

Trench excavation for water line construction shall be in accordance with Standard Specification 7-10.3(7) and shall provide a minimum of 42 inches of cover material over the top of the finished pipe grade. Trench backfill material shall be compacted by means approved by the Engineer, as required to preclude future settlement and to achieve a minimum of 95 percent maximum density when tested in accordance with Standard Specification 7-10.3(11). Hand operated jumping jacks or shoe type mechanical tampers will not be approved.

Trench excavation shall be unclassified unless rock excavation is listed as a separate pay item.

WATERLINE SPECIFICATIONS

1.6 PIPE LOCATOR RIBBON

Pipe locator ribbon is required by City of Mabton at a depth of 18 inches below ground surface.

1.7 TRACER WIRE

The Contractor shall install a tracer wire over all nonmetallic water mains. The tracer wire shall be #14 gauge copper wire with UF insulation, colored blue. The tracer wire shall be installed as shown on the detail included herein. Access points shall be provided at valve boxes, air release and blow-off installations.

1.8 DISINFECTION

The disinfection of new water lines, including all connections and appurtenances, shall be in accordance with Standard Specification 7-11.3(12) as herein modified. Water test points shall be at typical intervals of 500 to 800 feet or as approved by the Engineer. Sanitation test samples can be taken at fire hydrants and temporary blow-offs when available. When not available, a corp stop shall be installed by the Contractor at the nearest service location. The Engineer shall submit written notification to the City indicating the results of the sanitation tests to the City, including copies of the test results from a certified laboratory.

1.9 PRESSURE TESTING

The pressure testing of new water lines, including all connections and appurtenances, shall be in accordance with Standard Specification 7-11.3(11) as herein modified. The hydrostatic test pressure for all types of pipe to be tested shall be 150 psi. The Engineer shall submit written results of the pressure testing to the City. The results shall include the section of pipe tested, the length of the test and beginning and ending pressures.

1.10 TRENCH SAFETY SYSTEMS

All trench excavation which will exceed a depth of four feet shall have adequate safety systems for the trench excavation that meet the requirements of the Washington Industrial Safety and Health Act, Chapter 49.17 RCW. The Contractor shall be fully responsible for providing the necessary back sloping, cribbing, trench boxes, etc., as required to meet the specified safety requirements for the trench.

1.11 MEASUREMENT AND PAYMENT

The unit contract price for each size of "Water Line," per linear foot when measured continuously along the pipe centerline, including the distances through structures, valves, and fittings, shall be full compensation for furnishing all labor, equipment, and materials, to trench, dewater, compact and backfill, lay and joint the pipe, make connections to existing stub lines, specified or required

salvage, test, disinfect, and all other incidentals required to perform the work in accordance with the plans and specifications or as directed by the Engineer.

Cost for Trench Safety Systems, if required, shall be paid for as a separate bid item.

2 ROCK EXCAVATION

2.1 GENERAL

When provided for in the bid proposal, a separate measurement and payment will be made for rock excavation. Rock excavation shall include solid rock formations requiring systematic drilling and blasting with explosives and any boulders or broken rock larger than one-half cubic yard in volume. Hardpan or cemented gravel, even though it may be advantageous to use explosives in its removal, shall not be classified as solid rock excavation. The bottom of the trench shall be brought up to grade by backfilling with selected backfill material and be compacted to the satisfaction of the Engineer.

The Contractor shall notify the Engineer at least 24 hours prior to any blasting. All blasting shall be done in accordance with local, county, and state regulations governing this class of work. Any damage to persons or property resulting from blasting operations shall be the sole responsibility of the Contractor and his surety.

2.2 MEASUREMENT

The measurement for "Rock Excavation" shall be made as follows:

2.2.A. LENGTH

Length will be the entire horizontal distance where rock is encountered measured on a linear foot basis along centerline of trench.

All water line structures; i.e., valve pits, transmission line blow-offs, pressure reducing stations, etc., will be excluded and will be measured separately. Measurement will commence at the first location where rock is encountered and continue to the point where the rock terminates.

2.2.B. WIDTH

The trench width for payment of rock excavation shall be as follows:

Size of Pipe	Pay Width of Trench

WATERLINE SPECIFICATIONS

4" - 15"	2.5 feet
18" - 36"	Outside pipe diameter plus 12"
42" & larger	Outside pipe diameter plus 24"

2.2.C. DEPTH

Measurement for depth will be the vertical distance from six inches (6") below the pipe invert to the top of the solid rock strata. Depth will be measured at intervals of 25 feet along centerline of trench, beginning at the first location that solid rock is encountered, and the average depth between measuring points will be the depth used for computing depth of rock.

2.2.D. ROCK EXCAVATION FOR STRUCTURES

Rock excavation quantities for water line structures; i.e., valve pits, transmission line blow-offs, pressure reducing stations, etc., shall be computed on a cubic yard basis from the actual profile depth as noted above, multiplied by the area within a line parallel to and one foot (1') outside of the actual dimensions of the structure base.

2.3. PAYMENT

The unit contract price for "Rock Excavation," per cubic yard, shall be paid in addition to the payment for "Water Line Pipe," per linear foot. Payment for rock excavation shall be full compensation for all work necessary to excavate and dispose of the rock material. No payment will be made for rock excavated below required grade or outside the widths mentioned above.

3 PIPE BEDDING

3.1 GENERAL

It is the intent of these specifications to use select native material from the site for backfill around the water main pipe. When unsuitable native material exists or is encountered during trench excavation, imported bedding material may be required by the Engineer, depending on the type of pipe being installed and the type of materials encountered. Where directed by the Engineer, the Contractor shall furnish and place imported pipe bedding.

3.2 NATIVE BEDDING MATERIALS

Select native material used for bedding pipes shall meet the requirements of Standard Specification 9-03.12 as herein modified. The minimum sand equivalent shall be 50. Select native material shall be free of organic materials, lumps, rocks and pavement chunks and shall meet the approval of the Engineer.

WATERLINE SPECIFICATIONS

3.3 IMPORTED BEDDING MATERIALS

Imported pipe bedding for pipes shall be in accordance with Standard Specification 9-03.12 as herein modified. The minimum sand equivalent shall be 50.

3.4 COMPACTION

The bedding material shall be placed and compacted in lifts not to exceed six inches (6"). The pipe bedding shall be compacted to not less than 95 percent of maximum density. Compaction shall be done in such a manner as to preclude future settlement.

3.5 MEASUREMENT

Measurement for payment shall be by the linear foot for imported bedding material incorporated in the project.

3.6 PAYMENT

The unit contract price for "Imported Pipe Bedding," per linear foot, shall be full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary to the installation of bedding material in accordance with the plans and specifications or as directed by the Engineer.

Select native materials, which are acceptable as bedding and utilized as bedding, shall be considered as incidental to the pipe installation and no additional payment will be made for its use as imported pipe bedding.

WATERLINE SPECIFICATIONS

4 FIRE HYDRANT ASSEMBLIES

4.1 GENERAL

Installation of fire hydrants shall conform to the requirements of the detail included herein and Standard Specification 7-14 as herein modified. Hydrants shall be three (3) port fire hydrants, as described in Section 4.2 of these specifications.

4.2 MATERIALS

Fire hydrants shall meet AWWA C502 and be dry top, break-away type. The hydrants shall allow for three (3) feet of cover over the inlet pipe and be traffic yellow in color. The main valve opening shall be five and one-quarter (5-1/4) inches. The shoe inlet shall be six (6) inches, MJ connection. Hydrants shall be equipped with two (2) two and one-half (2-1/2) inch hose nozzles and one (1) four and one-half (4-1/2) inch pumper nozzle with threads conforming to national standard thread. The operating nut shall be one and one-half (1-1/2) inch pentagon nut that opens left. Hydrants shall be equipped with bronze upper valve plate, bronze seat ring, and bronze drain ring. They shall have a self lubricating oil reservoir, sealed by dual "O" rings and equipped with an anti-friction washer and weather cap. Nozzle caps shall be attached to upper barrel with individual non-kinking chains. Bonnet and lower barrel flanges shall be concealed. The breakaway safety stem shall be recessed within hydrant barrel. The hydrants shall be Mueller Centurion A-423 or an approved equal. Any vertical adjustment shall be manufactured specifically for the hydrant used. When not protected by a curb, hydrants shall be protected by guard posts.

Fire hydrants shall be painted OSHA Safety Yellow above ground line. The hydrant waste orifice at the base of the hydrant shall be bronze and connected to the hydrant by means of a bronze on bronze fitting to prevent rust and normal soil corrosion from plugging or interfering with its operation. Hydrants shall be of standard manufacture and of a pattern approved by the Owner. The name or mark of the manufacture, size of the valve opening, and year made shall be plainly cast in raised letters and so placed on the hydrant barrel as to be visible after the hydrant has been installed.

The vertical adjustment assemblies shall be complete, including the flanged riser, stem and all required components to provide a complete adjustment kit.

All associated valves, valve boxes, fittings and thrust blocks installed under the "Fire Hydrant Assembly" shall be in conformance with Section 7 of these specifications.

4.3 INSTALLATION

Fire hydrants shall be installed according to Standard Specification 7-14 as herein modified, and the detail included herein. Fire hydrants shall be located as shown on the plans. Where conflicts

or conditions require deeper than standard bury, the Contractor shall provide an extra deep hydrant or add an adjustment to the standard hydrant. The following requirements shall prevail for the installation of the fire hydrant:

4.3.A The bottom of the lowest port shall be a minimum of eighteen inches (18") above the top of the finished surface of existing or future sidewalk.

4.3.B Hydrants are to be free of vegetation and barriers for a three foot (3') radius circle measured from the operating nut.

4.3.C Fire hydrants are to be hooded until operable and accepted.

4.3.D Valves on mains to hydrants shall be bolted directly to the tee serving the hydrant.

4.3.E Valves servicing fire hydrants on any fire line shall be installed as per fire hydrant installation detail included herein.

4.3.F Guard post shall be installed if the hydrant is not protected by a curb.

4.3.G Salvage shall be completed per these specifications, Section 19.

4.4 MEASUREMENT

Measurement for fire hydrant assembly shall be per each assembly. An assembly includes: the main line tee with flanged coupling adapters (when required), blocking for tee and hydrant, six inch (6") gate valve and valve box, six inch (6") connecting pipe, shackles, tie rods, pier blocks, coarse gravel, painting, and any other items that are required for the complete installation of the hydrant as specified. Measurement for a 6-inch or 12-inch hydrant vertical adjustment assembly installed when directed by the Engineer, shall be per each assembly complete in place, or in lieu of, the Contractor may at his option, provide an extra depth bury hydrant as the location requires. Measurement will be made for the hydrant bury greater than the standard 4'-0" bury, only when made necessary by conflicting utilities or by the grade of the ground at the hydrant location. Measurement will be made per each for "Fire Hydrant Guard Post" when required.

4.5 PAYMENT

The unit contract price for 6-inch or 12-inch hydrant vertical adjustment assembly, "Fire Hydrant Guard Post," "Fire Hydrant Assembly," per each, shall be full compensation for all necessary labor, materials, tools, and equipment to install the adjustment or the fire hydrant assembly in place, complete, including adjusting of the valve box to the finished grade in accordance with the plans and specifications or as directed by the Engineer.

WATERLINE SPECIFICATIONS

5 BLOW-OFF ASSEMBLY

5.1 GENERAL

This specification covers the construction and installation of a two inch (2") blow-off assembly to allow for the controlled flushing of water from the water distribution system.

5.2 MATERIALS AND CONSTRUCTION

With the exception of temporary installations, all materials used shall be new and assembled in accordance to the requirements of the detail included herein and the following requirements:

5.2.A Pipe shall be galvanized steel, Schedule 40, threaded by couple ends, and shall meet the requirements of ASTM designation A 120.

5.2.B Fittings shall be standard dimension, galvanized, malleable iron, manufactured in accordance with the requirements of ASTM 197, and capable of withstanding a working pressure at 150 psi.

5.2.C Gate valve shall be flanged with a nonrising two-inch square operating nut, counter-clockwise opening, similar or equal to the M&H Style 67-02.

5.2.D Valve boxes shall be as specified in Section 7.2.D of these specifications.

5.2.E Tapping saddle shall be a double strap saddle similar and equal to the Rockwell Model 313.

5.3 MEASUREMENT AND PAYMENT

The unit contract price for "Two-Inch Blow-Off Assembly," or "Temporary Two-Inch Blow-Off Assembly," per each, shall be full compensation for furnishing all labor, materials, equipment, trenching and backfill, valves, fittings, thrust blocks, adjusting the valve boxes to finished grade, all other incidentals required to install the complete blow-off assembly in place, including tapping into the water main and removal of the temporary installations.

6 AIR AND VACUUM RELEASE ASSEMBLY

6.1 GENERAL

This specification covers the construction and installation of an air and vacuum release assembly to allow for the automatic venting of air into and out of a water line during times when the line is being emptied or filled with water.

WATERLINE SPECIFICATIONS

6.2 MATERIALS AND CONSTRUCTION

All materials used shall be new and assembled in accordance to the requirements of the detail included herein and the following requirements:

6.2.A Pipe shall be galvanized steel, Schedule 40, threaded by couple ends, and shall meet the requirements of ASTM designation A120.

6.2.B Street elbows shall be standard dimension, galvanized, malleable iron, manufactured in accordance with the requirements of ASTM 197, and capable of withstanding a working pressure of 150 psi.

6.2.C Tapping saddle shall be a stainless steel, double strap saddle similar and equal to the Smith Blair 331.

6.2.D Gate valve shall be flanged with nonrising two-inch (2") square operating nut, counter-clockwise opening similar and equal to the M&H Style 67-02.

6.2.E Pipe coupling device shall be similar and equal to the Dresser Style 38.

6.2.F Air and vacuum valve shall have a cast iron body, cover and baffle with a stainless steel float and a Buna N seat. All internal parts such as float guides, bushings, and baffle retaining screws shall be either stainless steel or bronze. The valve shall be similar and equal to APCO No. 144, and shall be capable of handling operating pressures of 150 psi.

6.3 MEASUREMENT AND PAYMENT

The unit contract price for "Air and Vacuum Release Assembly," per each, shall be full compensation for furnishing all labor, materials, equipment, trenching and backfill, valves, fittings, valve chamber, and all other incidentals required to install the complete air and vacuum assembly in place, including tapping into the water main.

7 VALVES, VALVE BOXES AND FITTINGS

7.1 GENERAL

This specification covers all valves, valve boxes, and water line fittings (tees, elbows, crosses, blocks, etc.) necessary as indicated on constuction plans. All valves shall be bolted to tees and fittings unless otherwise specified.

7.2 MATERIALS

WATERLINE SPECIFICATIONS

7.2.A BUTTERFLY VALVES: Valves larger than twelve inches (12") shall be butterfly valves.

All butterfly valves shall conform to the AWWA Standard for "Rubber Seated Butterfly Valves," (AWWA C504), and shall meet the following requirements:

7.2.A.1 Valves shall be Class 150-B and shall open counter-clockwise with a standard two inch (2") square nonrising operator nut.

7.2.A.2 Flanged valves shall be furnished with flanges faced and drilled to 150 pound American Standard dimensions and, unless otherwise specified or shown on the drawings, may be either short-bodied or long-bodied.

7.2.A.3 Shaft seals shall be designed for use with standard split V type packing.

7.2.A.4 Valve discs shall be manufactured from material listed in 7.2 of the above referenced AWWA Standard.

Prior to the installation of all rubber seated valves, the Contractor shall lubricate the seat with Molykote Valve Seal, Catalog No. 98750-56, as manufactured by Dow-Corning, or approved equal.

7.2.B RESILIENT SEATED GATE VALVES

All valves twelve inches (12") and smaller shall be resilient seated gate valves.

The resilient seated gate valves shall conform to the requirements of AWWA C509. The valve shall open counter-clockwise with a two-inch (2") square nonrising operator nut. The ductile iron gate valve wedge or gate member shall be fully encapsulated in synthetic rubber. All seating surfaces within the valve body shall be inclined to the vertical, the valve stem shall be sealed by a minimum of two (2) O-rings and all stem seals shall be replaceable with the valve wide open and subjected to full rated pressure.

The valve body and bonnet shall be epoxy coated inside and out. The waterway shall be smooth and shall have no depressions or cavities in the gate seating area.

Resilient seated gate valves shall meet the above specifications and shall be Clow R/W, Waterous Series 500, Kennedy Ken-Seal, Mueller, Dresser M&H Style 3067, unless otherwise specified in the contract Special Provisions.

7.2.C TAPPING VALVES

The Contractor shall be required to install resilient seated gate valves when making 4-

inch to 12-inch live taps on mains. The resilient seated gate valves shall be in accordance with the requirements of Section 7.2.B of these specifications and shall be installed in a manner meeting the Engineer's approval.

7.2.D VALVE BOXES

Cast iron sliding type adjustable valve boxes with covers shall be provided for all buried valves. Valve boxes shall consist of top and bottom section with slide type extensions and large bottom base where specified. Drop type cover shall be marked "WATER." In unpaved areas, valve boxes shall be provided with a six-inch (6") thick concrete collar, 30 inches square at the ground surface. Valve boxes and covers shall be "Tyler No. 6855" series, or a foreign-made clone equal in all dimensions and weight. The cover shall have a skirt length of 1-1/2 inches minimum, a total lid depth of 3-1/2 inches minimum, and a lid weight of minimum 13 pounds. Valve boxes shall be installed as shown on the detail included herein.

7.2.E FITTINGS

Fittings for ductile iron and PVC pipe shall be cast or ductile iron. Cast iron fittings shall conform to the quality and wall thickness specified in the American Standard for "Gray Iron and Ductile Iron Fittings, 3 inch through 48 inch for Water and Other Liquid" (AWWA C110), for "Fluid-Tite" joints specified in Section 1. All cast iron fittings, twelve inches (12") in diameter or larger, shall be lined with cement mortar in accordance with the requirements of the American Standard for "Cement Mortar Lining for Cast Iron and ductile Iron Pipe and Fittings for Water" (AWWA C104).

Ductile iron fittings shall be compact or standard bell and spigot, mechanical joint, or flanged as required on the plans. Standard fittings shall be in accordance with AWWA C110, "Gray Iron and Ductile Iron Fittings, 3 inch through 48 inch for Water and Other Liquids." Ductile iron compact fittings may be used in sizes through 12-inches. The fittings shall conform to all requirements of AWWA Standard C153 for ductile iron compact fittings 3-inch through 12-inch. The bell and spigot joints shall be rubber gasket sealed joints in accordance with AWWA C111. Ductile iron fittings, twelve inches (12") inside diameter or greater, shall be mortar lined in accordance with AWWA C104.

Cut-in tees and live tap tapping sleeves shall be as directed by the Engineer.

7.2.F THRUST BLOCKING

Concrete blocking shall be installed in accordance with the detail included herein and shall bear against solid undisturbed earth at the sides and bottom of the trench excavation and shall be shaped so as not to obstruct access to the joints of pipe or fitting. An 8 mil polyethylene sheet, or two layers of 4 mil, shall be placed between the fitting and the

thrust block.

7.3 INSTALLATION

Installation of valves, boxes, and fittings shall be in accordance with Standard Specifications 7-11 and 7-12 as herein modified.

7.3.A All valves are to be bolted directly to the tees or crosses as indicated in the plan. The flanges on valves and tees (or crosses) shall be plain faced. Flanges shall be faced and drilled to 150 pound American Standard dimensions.

7.3.B All other connections between pipe and fittings, or pipe and valve shall be flexible coupling, "Ring-Tite," "Fluid Tite," or approved equal, except as noted otherwise for installation of a cut-in tee where flanged coupling adaptors shall be used to connect the tee to the existing main.

7.4 MEASUREMENT

Valves and associated valve boxes, including their adjustment to finished grade, shall be considered as one item and shall be measured per each according to size of valve. All fittings shall be measured per each according to size and type. All valves, thrust blocks and fittings which are included in the unit items for "Fire Hydrant Assembly," "Blow-off Assembly," etc., shall be measured and paid as incidental to those unit items and no additional payment will be made for them.

7.5 PAYMENT

The unit contract price for each size of "Valve," per each, and each type and size of "Fitting," per each, shall be full compensation for furnishing all necessary labor, equipment, and materials, concrete thrust blocks, and all other incidentals required to install all valves and fittings in place in accordance with construction plans and these specifications or as directed by the Engineer.

When constructed in conjunction with a paving project, a separate measurement and payment will be made for adjusting to grade, after completion of paving, as per Section 8 of these specifications.

WATERLINE SPECIFICATIONS

8 ADJUST EXISTING AND NEW CASTING TO GRADE

8.1 GENERAL

When constructed in conjunction with a street construction project or pavement overlay, existing and new water valve boxes, air release and blow-off assembly castings, which are required to be adjusted to finished grade, shall be adjusted in accordance with the local street authority.

Where the new water valve boxes fall outside of the pavement restoration limits, in unpaved areas, the box shall be adjusted to conform to the adjoining grade and set in a 30" X 30" X 8" - thick concrete collar.

8.2 MEASUREMENT AND PAYMENT

All costs for the specified adjustments shall be considered incidental to the water line installation pay items provided in the bid proposal.

9 SALVAGE

9.1 GENERAL

All existing tees, valves, boxes, fire hydrants and miscellaneous fittings to be abandoned during construction, shall be removed by the Contractor for City salvage.

9.2 MEASUREMENT AND PAYMENT

Salvage of existing water line appurtenances shall be considered incidental to the unit contract price for "Water Line" and no additional compensation shall be allowed.

10 SCHEDULED WATER LINE SHUT DOWN

10.1 GENERAL

The Contractor shall give the City a 72-hour notice of required water line shut down. The Contractor shall verify that all required fittings necessary for connection are secured and in hand prior to scheduling shut downs. The Contractor shall be billed for cancelled shut downs, unless circumstances beyond the Contractor's control (as determined by the Engineer), have caused the Contractor to cancel the shutdown.

11 VALVE OPEN/CLOSE POLICY

WATERLINE SPECIFICATIONS

11.1 GENERAL

The City shall open/close all existing water line valves and new valves connected to existing water line at the Contractor's request. When a water line valve connected to the existing system is open, the Contractor shall, at all times, keep at least one downstream flow open to prevent back draw. Prior to the Contractor shutting down all of the downstream flows, the water line valve connected to the existing system must be closed. The Contractor shall provide reasonable notice to the Owner of the water system of the need for opening and closing valves.

12 TIE-IN TO EXISTING WATER LINES

12.1 GENERAL

Tie-in to the existing water lines and the installation of the required fittings and water line shall be under the direct observation of the Owner and the Engineer. Work shall not be started until all the materials, equipment, an labor necessary to properly complete the work are assembled on site. Extreme care shall be taken by the Contractor to keep the existing water lines and new fittings and water line clean and free from contaminates. The inside surfaces of the valve, pipe and fittings shall be thoroughly swabbed with, or filled with, a 75-parts per million chlorine solution 24 hours prior to the installation of all fittings. The fittings and water line shall be kept in a clean environment and delivered to the site within a protective covering. The fittings and waterline shall be swabbed again with the 75-parts per million chlorine solution just prior to their installation.

12.2 MEASUREMENT AND PAYMENT

All necessary labor, tools, dewatering, chlorine swabbing and incidentals as required to cut into existing water mains or remove existing fittings and valves as called for on the plans, shall be considered incidental to the unit contract price for water line, per linear foot, or fittings as allowed in the bid proposal.

13 COUPLINGS AND FLANGE COUPLING ADAPTERS

13.1 GENERAL

Couplings and flange coupling adapters shall be manufactured from cast iron and rated at a minimum of 150 psi. The minimum overall length shall be nine (9) inches and the minimum middle ring length shall be five (5) inches. Bolts shall be galvanized steel or cast-iron protected.

14 DIG AND VERIFY

WATERLINE SPECIFICATIONS

14.1 GENERAL

At the connection with existing water lines where shown and directed on the plans and as otherwise directed by the Engineer, the contractor shall expose and verify the exact pipe location, type, size and fittings required prior to ordering the fittings. After digging and verifying, the Contractor shall backfill, compact and cold patch the surfacing. Contractor shall provide the necessary traffic control and safety measures.

14.2 MEASUREMENT AND PAYMENT

The unit contract price for "Digging and Verifying," per each, shall be full compensation for all labor, materials, equipment and incidentals necessary to dig, verify, backfill, compact, provide traffic control and cold patch in accordance with construction plans and these specifications or as directed by the Engineer.

15 ADDITIONAL/ALTERNATE FITTINGS

15.1 GENERAL

Where a standard or specified fitting cannot be obtained or is not readily available, and the Contractor is required to add an MJ adapter to the fitting, the MJ adapter shall be separately paid for under the bid items for "Flange Adapter."

Elbows where noted on the plan sheet are indicated to the degree of bend that appears to fit best. The Contractor shall have the same diameter elbows of various degrees available for installation. If actual field conditions dictate that a degree of bend other than the one noted should be installed, the Contractor shall install the required fitting. Measurement and payment for "**-inch Elbow," per each, shall be full compensation for the actual degree of elbow installed as specified.

If fittings specified for an installation are not readily available, and involve revisions other than the addition of an MJ adapter, the Contractor may, when approved by the Engineer, install alternate fittings that complete the installation in the same manner. Alternate fittings, if used, will be measured and paid for by the unit bid price for the fittings that were specified for the installation.

WATERLINE SPECIFICATIONS

16 PRESSURE CAPS

16.1 GENERAL

Where specified on the construction plans or where directed by the Engineer as required by construction, the Contractor shall pressure cap and thrust block existing water lines. All work and materials shall be in accordance with these specifications.

16.2 MEASUREMENT AND PAYMENT

The unit contract price for "1-Inch to 4-Inch Pressure Cap," or "6-Inch to 8-Inch Pressure Cap," or "10-Inch to 16-Inch Pressure Cap," per each, shall be full compensation for all labor, equipment, materials and incidentals necessary to complete the pressure cap in accordance with construction plans and these specifications or as directed by the Engineer.

17 SIDE SEWER REPAIR

17.1 GENERAL

Although every effort has been made to show potential conflict with sewer services, the exact depth and location of sewer services are not known. The Contractor shall make every effort to prevent damage to sewer services. When sewer services are inadvertently broken or damaged, the Contractor shall repair the side sewer by installing a section of Schedule 40 ABS sewer pipe. The repair section of pipe shall be placed a minimum one foot into the trench walls to provide a solid foundation for the crossing of the new trench. The pipe ends shall be connected using repair clamps. Repair clamps shall be a flexible coupling with stainless steel clamps and shall be Fernco flexible couplings or approved equal. The area under the side service connection shall be bedded with compacted 5/8-inch minus top course rock. When directed by the Engineer or where rocky soils, unstable soils, or other conditions exist, where it may be difficult to detect a damaged side service, water shall be run from the home toilet or other source, to insure that all of the side services are undamaged, prior to beginning backfill operations.

17.2 MEASUREMENT AND PAYMENT

The unit contract price for "Sewer Service Repair," per each, shall be full compensation for all necessary labor, tools, equipment, excavation, backfill and incidentals necessary to make and complete the sewer service repair.

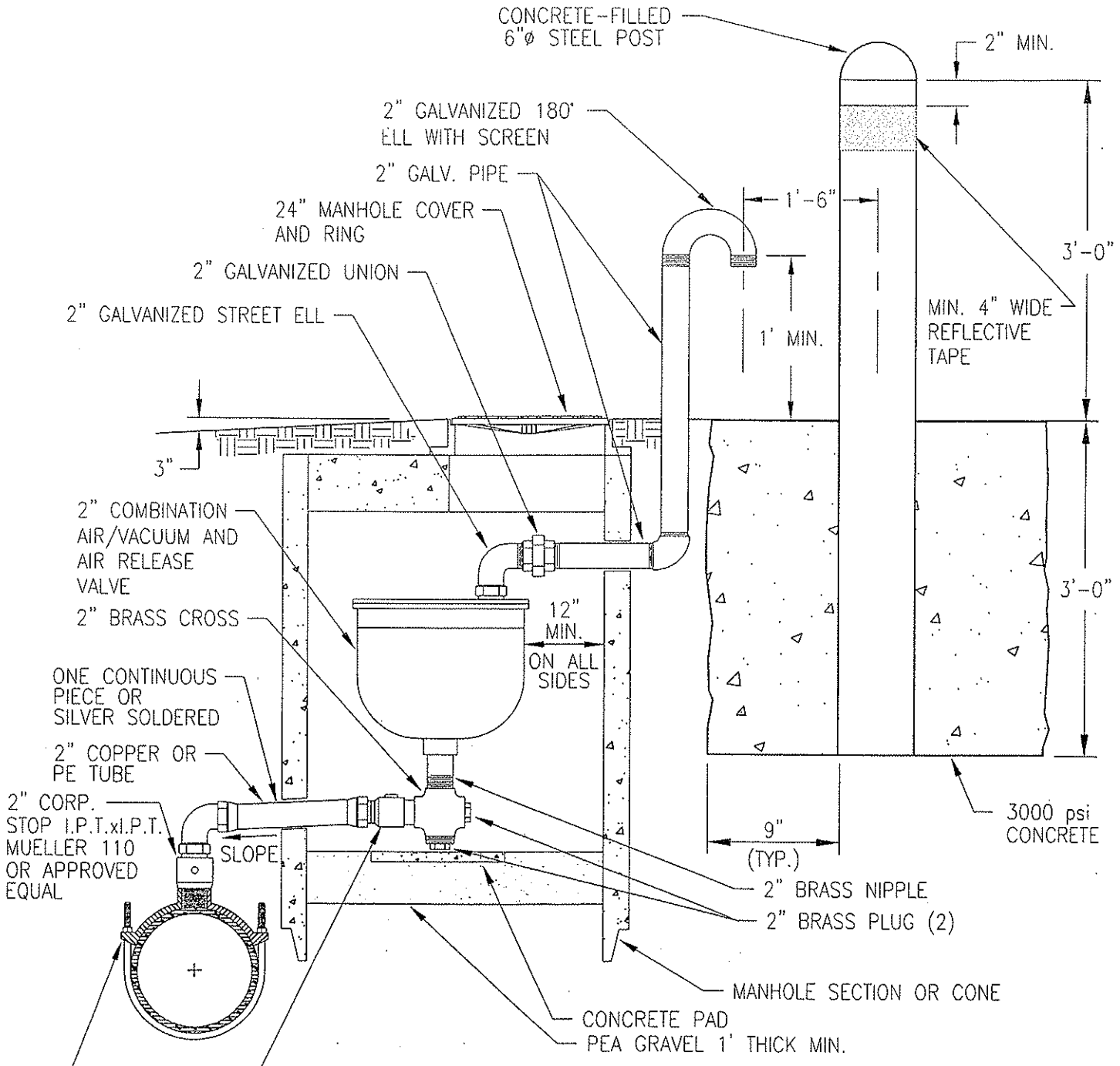
WATERLINE SPECIFICATIONS

18 ABANDONED CONDUITS

All pipes, conduits and other openings determined to be abandoned, which are cut or opened during the water line installation, shall be capped or concrete plugged prior to backfilling of the trench. Measurement and payment for required pipe cuts, labor, equipment, work and materials required to complete the specified plug shall be incidental to the pipe installation pay items.

19 ABANDONED FIRE HYDRANT REMOVAL

All fire hydrants connected to water mains scheduled for abandonment shall be removed by the Contractor and delivered to the City's storage yard for City salvage. Fire hydrants shall be removed intact, including the shoe. A separate measurement and payment will not be made for fire hydrant removal and all costs for removal and delivery shall be incidental to other bid items provided in the bid proposal.



ELEVATION

NOTES:

1. VALVE SIZE AND TYPE TO BE SPECIFIED BY THE DESIGN ENGINEER AND APPROVED BY THE CITY ENGINEER.
2. RISER SHALL BE PROTECTED FROM VEHICULAR OR PEDESTRIAN TRAFFIC AS APPROVED BY THE CITY ENGINEER.
3. PAINT GUARD POST(S) SAFETY YELLOW.
4. EXACT LOCATION OF GUARD POST(S) TO BE DETERMINED IN FIELD BY THE CITY ENGINEER.

SPINK ENGINEERING DWG FILE: 02134ARV.DWG

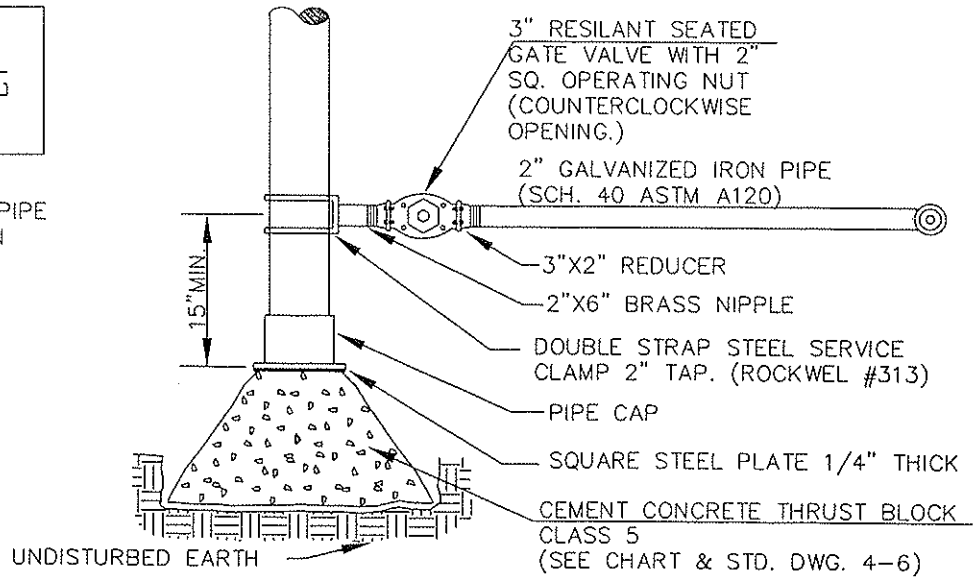
CITY OF MABTON

WATERLINE SPECIFICATIONS
AUGUST 2004

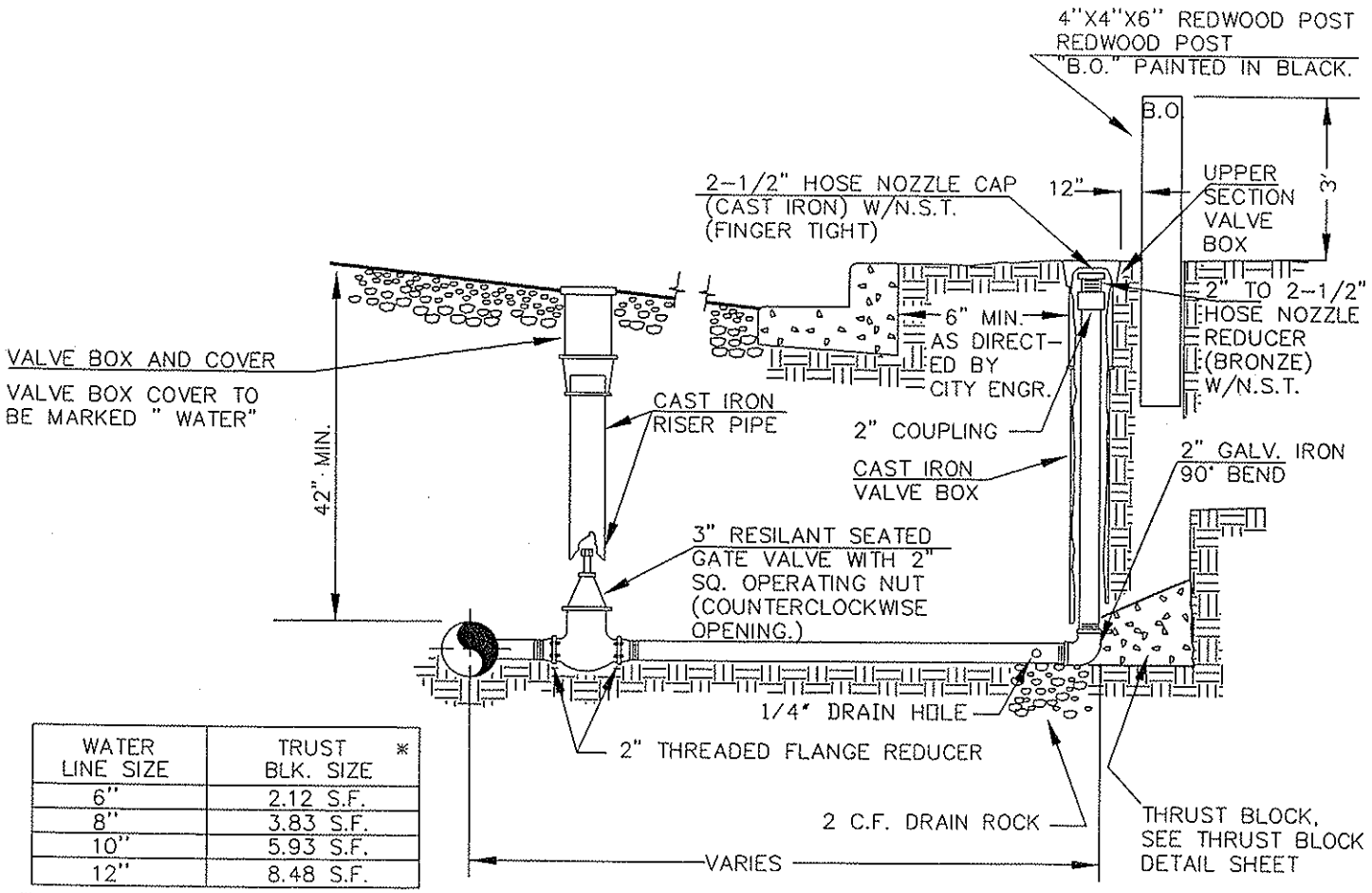
AIR RELEASE VALVE

CALL 48 HOURS
BEFORE YOU DIG
1-800-424-5555

NOTE:
TAP MAY BE OFF END OF PIPE FOR 4" AND SMALLER MAIN (SEE STD. DWG. # 4-1)



PLAN VIEW



WATER LINE SIZE	TRUST BLK. SIZE *
6"	2.12 S.F.
8"	3.83 S.F.
10"	5.93 S.F.
12"	8.48 S.F.

* BEARING AREA AGAINST TRENCH WALL.

ELEVATION

SPINK ENGINEERING DWG FILE: 0213415BO.DWG

CITY OF MABTON

WATERLINE SPECIFICATIONS
JULY 2003

BLOW-OFF DETAIL

CITY OF MABTON

WATERLINE SPECIFICATIONS
JULY 2003

FIRE HYDRANT DETAIL

CALL 48 HOURS
BEFORE YOU DIG
1-800-424-5555

NOTES:

1) HYDRANTS SHALL BE 3 PORTS.
2) HYDRANTS SHALL BE PER SECTION 4 OF THESE SPECIFICATIONS.
3) 2 EA. 3/4" SHACKLE RODS MAY BE REQUIRED IN SPECIAL CIRCUMSTANCES AS DIRECTED BY THE ENGINEER.
4) HUB & FLANGE CASTING. (SEE NOTE 2)
5) HYDRANTS SHALL BE HOODED UNTIL OPERATIONAL.

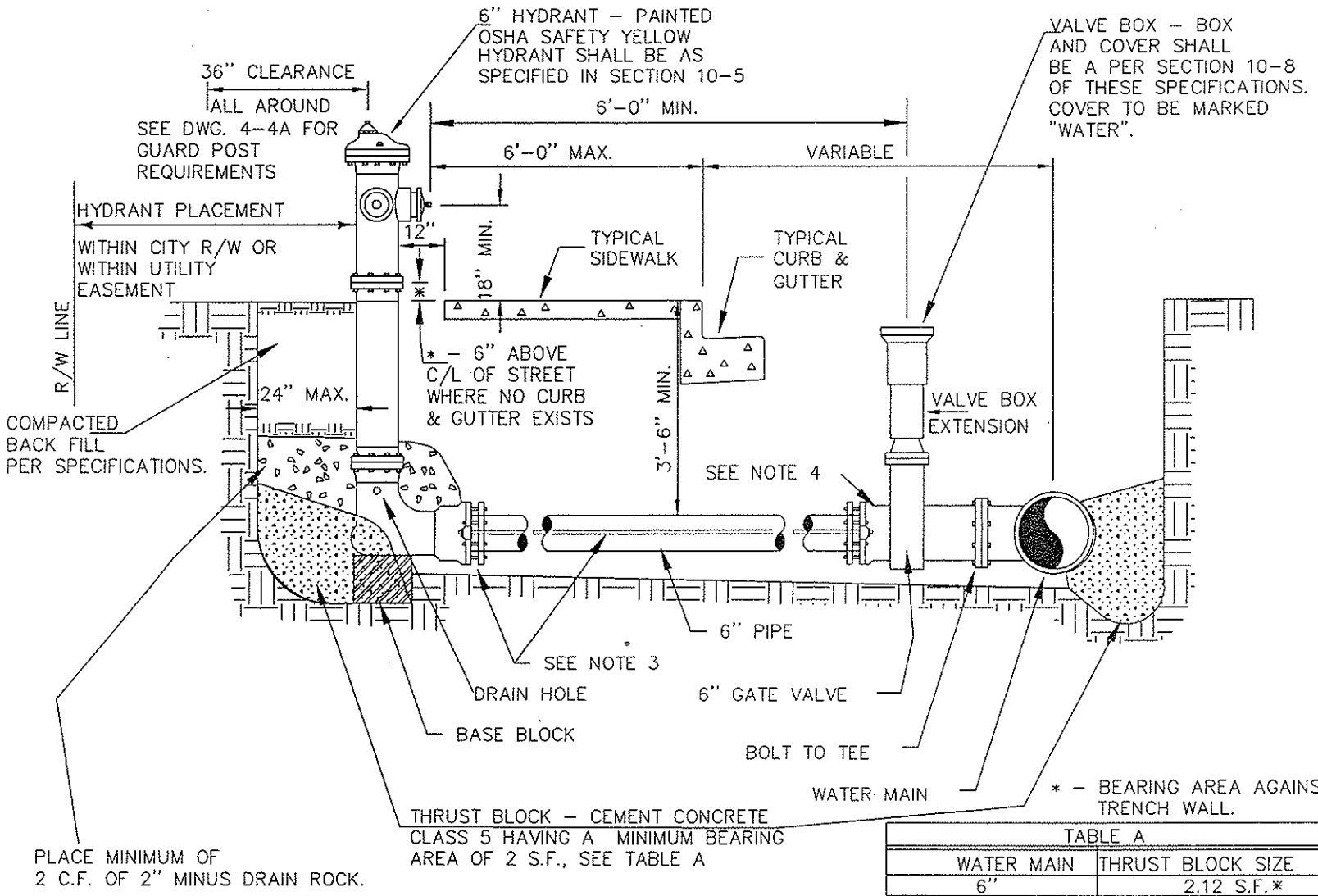
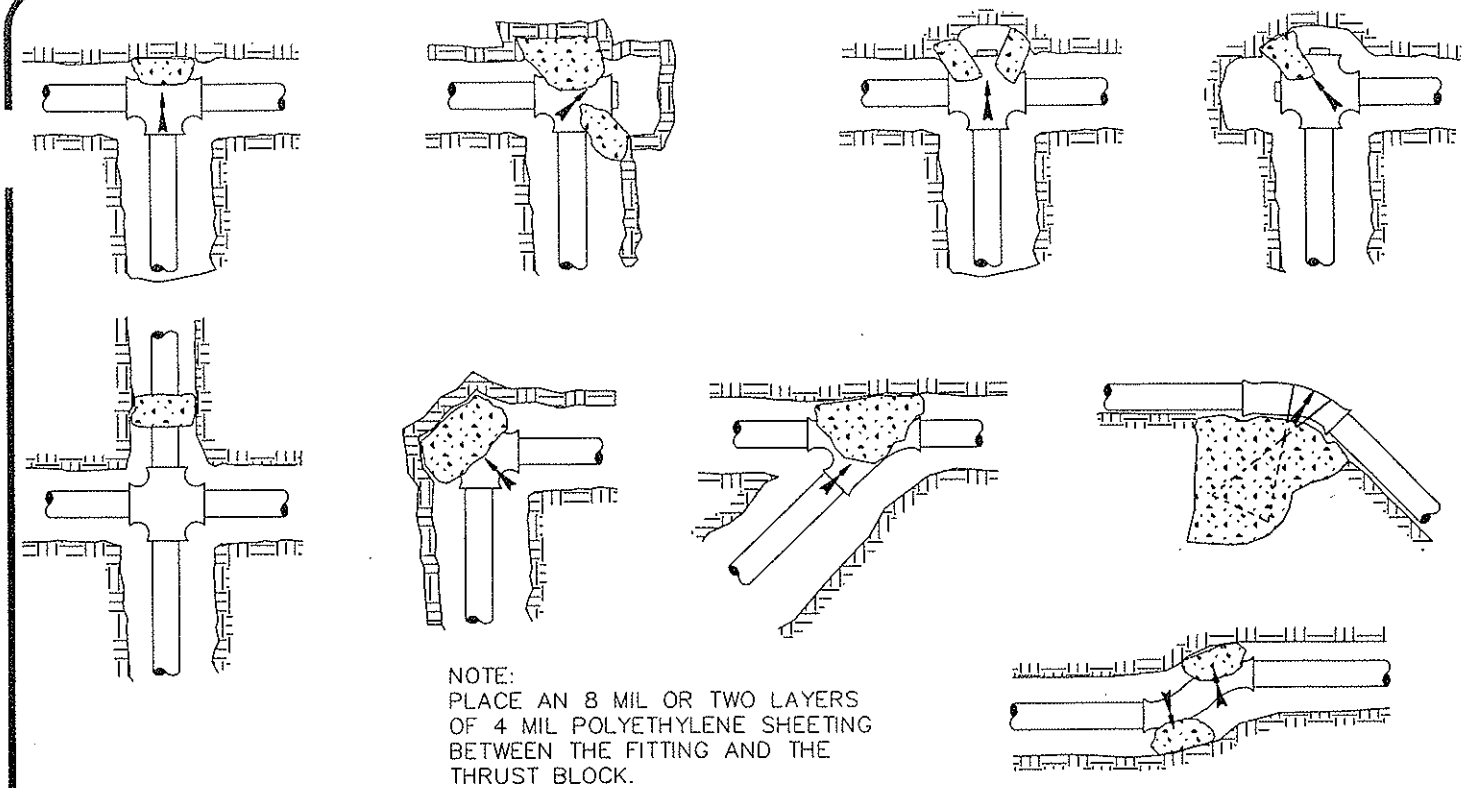


TABLE A	
WATER MAIN	THRUST BLOCK SIZE
6"	2.12 S.F.*
8"	3.83 S.F.*
10"	5.93 S.F.*
12"	8.48 S.F.*

SPINK ENGINEERING DWG FILE: 02134FH.DWG



NOTE:
PLACE AN 8 MIL OR TWO LAYERS OF 4 MIL POLYETHYLENE SHEETING BETWEEN THE FITTING AND THE THRUST BLOCK.

PVC & DUCTILE IRON PIPE
150 PSI TEST PRESSURE

TABLE FOR BEARING AREAS OF THRUST BLOCKS IN SQUARE FEET
HANGING THRUST BLOCKS ARE IN CUBIC YARDS OF CONCRETE

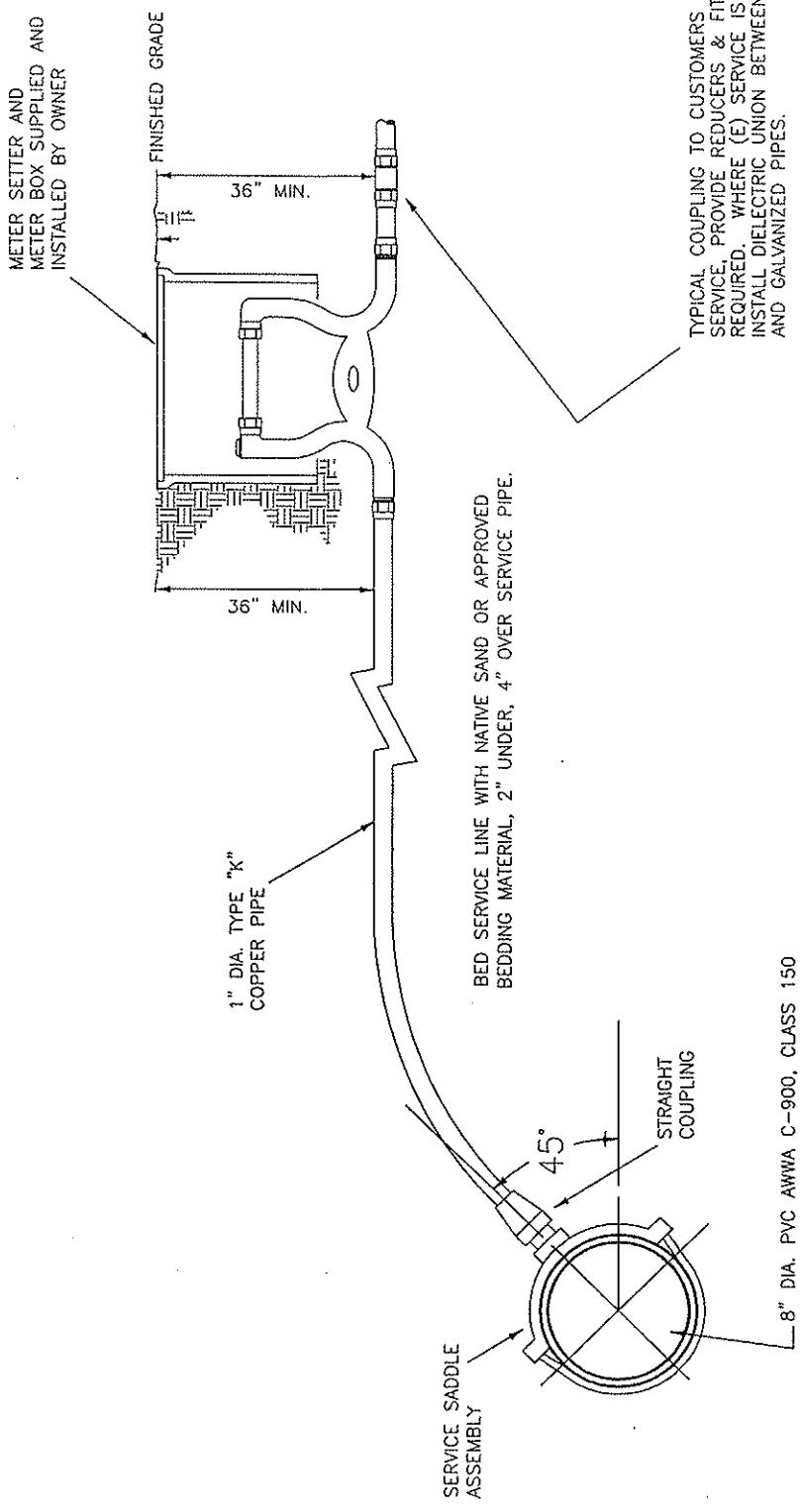
PIPE SIZE	TEES AND DEAD ENDS	90 DEGREE BEND	45 DEGREE BEND	11 1/4 DEGREE 22 1/2 DEGREE BEND
4" & LESS	0.94	1.33	0.76	0.38
	HANGING THRUST BLOCK		0.38 CY	0.19 CY
6"	2.12	3.01	1.71	0.86
	HANGING THRUST BLOCK		0.84 CY	0.42 CY
8"	3.83	5.40	3.08	1.54
	HANGING THRUST BLOCK		1.52 CY	0.76 CY
10"	5.93	8.40	4.73	2.39
	HANGING THRUST BLOCK		2.34 CY	1.18 CY
12"	8.48	12.00	6.83	3.46
	HANGING THRUST BLOCK		3.37 CY	1.70 CY
14"	11.55	16.40	9.30	4.68
	HANGING THRUST BLOCK		4.59 CY	2.31 CY
16"	15.08	21.41	12.14	6.10
	HANGING THRUST BLOCK		6.00 CY	3.00 CY

NOTES:
1. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH AND SHALL BE CLASS 5 CONCRETE.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. BEARING LOAD IS CALCULATED AT 2,000 LB. PER SQ. FT.
4. FOR 200 PSI PRESSURE TEST FOR FIRE LINES MULTIPLY BY 1.34.

SPINK ENGINEERING DWG FILE: 02134TR.DWG

CITY OF MABTON
WATERLINE SPECIFICATIONS
JULY 2003

THRUST BLOCK DETAIL



WATER SERVICE DETAIL

SPINK ENGINEERING DWG FILE: 02134WS.DWG

CITY OF MABTON

WATERLINE SPECIFICATIONS
JULY 2003

WATER SERVICE DETAIL

APPENDIX O

PLANNING LEVEL COST ESTIMATES

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

REPAIR OF WELL NO. 4

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$5,000	$5,000
2	Well Cleaning, Video, Testing	1	LS	$24,000	$24,000
3	New Pump (Installed)[1]	1	LS	$50,000	$50,000
4	New Water Meter	1	LS	$8,000	$8,000
				Subtotal:	$87,000
				Washington State Sales Tax (7.9%):	$6,873
				Total Construction Cost (rounded):	$94,000
				Contingency (25%):	$23,500
				Total Estimated Construction Cost:	**$117,500**
				Admin. Fiscal, Legal and Engineering (5%):	$5,875
				Total Estimated Project Cost (rounded):	**$130,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WELL NO. 6 Plus Well Improvements

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$80,000	$80,000
2	Surface Seal	1	LS	$20,000	$20,000
3	Drilling for 20-in Surface Seal	100	FT	$200	$20,000
4	Drilling for 16-in Surface Seal	700	FT	$150	$105,000
5	Casing	1	LS	$70,000	$70,000
6	Alignment, Pump Test, Video, Grouting etc.	1	LS	$50,000	$50,000
7	Sitework	1	LS	$150,000	$150,000
8	Wellhouse	1	LS	$200,000	$200,000
9	Pump and Motor	1	LS	$120,000	$120,000
10	Flow Meter and Level Sensors[1]	2	LS	$10,000	$20,000
11	Generator	1	LS	$60,000	$60,000
12	Piping, Valves and Appurtenances	1	LS	$60,000	$60,000
13	Electrical	1	LS	$140,000	$140,000
				Subtotal:	$1,095,000
				Washington State Sales Tax (7.9%):	$86,505
				Total Construction Cost (rounded):	$1,182,000
				Contingency (25%):	$295,500
				Total Estimated Construction Cost:	**$1,477,500**
				Admin. Fiscal, Legal and Engineering (25%):	$369,375
				Total Estimated Project Cost (rounded):	**$1,850,000**

(1) An additional flow meter for Well No. 4, and level sensors for Well No. 4 and Well No. 5 are included.

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

1 Mgal. Reservoir

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	1 Mgal. Welded Steel Reservoir[1]	1	LS	$750,000	$750,000
				Subtotal:	$750,000
				Washington State Sales Tax (7.9%):	$59,250
				Total Construction Cost (rounded):	$809,000
				Contingency (25%):	$202,250
				Total Estimated Construction Cost:	**$1,011,250**
				Admin. Fiscal, Legal and Engineering (25%):	$252,813
				Total Estimated Project Cost (rounded):	**$1,300,000**

(1) This work will also include the investigation of the feasibility of extending the height of the existing standpipe reservoir in lieu of the new reservoir. If it is determined that the existing reservoir can be modified to meet the City's needs, the City may elect to modify the existing tank instead of constructing the new reservoir. This rework would include increasing the height of the reservoir and bringing the reservoir up to current seismic standards. These modifications to the existing steel tank are likely to be less costly than constructing a new reservoir.

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER RIGHTS - 150 AC-FT.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Water Rights	150	LS	$4,000	$600,000
				Subtotal:	$600,000
				Washington State Sales Tax (7.9%):	$47,400
				Total Estimated Construction Cost:	**$647,400**
				Admin. Fiscal, Legal and Engineering (5%):	$32,370
				Total Estimated Project Cost (rounded):	**$700,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", SOUTH STREET, RESERVATION ST. TO ALLEY 170 FT. WEST OF MAIN ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$13,000	$13,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	140	CY	$25	$3,500
4	PVC Pipe for Water Main, 8-In. Dia.	1,050	LF	$42	$44,100
5	8-Inch Gate Valve and Valve Box	3	EA	$1,200	$3,600
6	Hydrant Assembly	3	EA	$4,000	$12,000
7	Concrete Encasement	5	EA	$150	$750
8	Water Main Fittings	1	LS	$9,000	$9,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	8	EA	$400	$3,200
11	Asphalt Concrete Pavement Repair, Class B	700	SY	$50	$35,000
12	Gravel Repair	40	SY	$15	$600
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$6,000	$6,000
				Subtotal:	$137,750
				Washington State Sales Tax (7.9%):	$10,882
				Total Construction Cost (rounded):	$149,000
				Contingency (25%):	$37,250
				Total Estimated Construction Cost:	**$186,250**
				Admin. Fiscal, Legal and Engineering (25%):	$46,563
				Total Estimated Project Cost (rounded):	**$240,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", MONROE STREET, FROM SEVENTH AVE TO ALLEY EAST OF FIRST AVE.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$21,000	$21,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	240	CY	$25	$6,000
4	PVC Pipe for Water Main, 8-In. Dia.	1,850	LF	$42	$77,700
5	8-Inch Gate Valve and Valve Box	4	EA	$1,200	$4,800
6	Hydrant Assembly	4	EA	$4,000	$16,000
7	Concrete Encasement	9	EA	$150	$1,350
8	Water Main Fittings	1	LS	$16,000	$16,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	20	EA	$400	$8,000
11	Asphalt Concrete Pavement Repair, Class B	1,240	SY	$50	$62,000
12	Gravel Repair	40	SY	$15	$600
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$10,000	$10,000
				Subtotal:	$230,450
				Washington State Sales Tax (7.9%):	$18,206
				Total Construction Cost (rounded):	$249,000
				Contingency (25%):	$62,250
				Total Estimated Construction Cost:	**$311,250**
				Admin. Fiscal, Legal and Engineering (25%):	$77,813
				Total Estimated Project Cost (rounded):	**$390,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", ALLEY EAST OF 1st AVE., FROM WASHINGTON ST. TO MONROE ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$15,000	$15,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	190	CY	$25	$4,750
4	PVC Pipe for Water Main, 8-In. Dia.	1,400	LF	$42	$58,800
5	8-Inch Gate Valve and Valve Box	3	EA	$1,200	$3,600
6	Hydrant Assembly	3	EA	$4,000	$12,000
7	Concrete Encasement	7	EA	$150	$1,050
8	Water Main Fittings	1	LS	$12,000	$12,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	36	EA	$400	$14,400
11	Asphalt Concrete Pavement Repair, Class B	40	SY	$50	$2,000
12	Gravel Repair	1,250	SY	$15	$18,750
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$7,000	$7,000
				Subtotal:	$156,350
				Washington State Sales Tax (7.9%):	$12,352
				Total Construction Cost (rounded):	$169,000
				Contingency (25%):	$42,250
				Total Estimated Construction Cost:	**$211,250**
				Admin. Fiscal, Legal and Engineering (25%):	$52,813
				Total Estimated Project Cost (rounded):	**$270,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", IN ALLEY EAST OF 3RD AVE. FROM WASHINGTON ST. TO MONROE ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$14,000	$14,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	190	CY	$25	$4,750
4	PVC Pipe for Water Main, 8-In. Dia.	1,400	LF	$42	$58,800
5	8-Inch Gate Valve and Valve Box	3	EA	$1,200	$3,600
6	Hydrant Assembly	3	EA	$4,000	$12,000
7	Concrete Encasement	7	EA	$150	$1,050
8	Water Main Fittings	1	LS	$12,000	$12,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	36	EA	$400	$14,400
11	Asphalt Concrete Pavement Repair, Class B	70	SY	$50	$3,500
12	Gravel Repair	870	SY	$15	$13,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$7,000	$7,000
				Subtotal:	$151,150
				Washington State Sales Tax (7.9%):	$11,941
				Total Construction Cost (rounded):	$163,000
				Contingency (25%):	$40,750
				Total Estimated Construction Cost:	**$203,750**
				Admin. Fiscal, Legal and Engineering (25%):	$50,938
				Total Estimated Project Cost (rounded):	**$260,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", IN ALLEY EAST OF 5TH AVE. FROM WASHINGTON ST. TO MONROE ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$14,000	$14,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	190	CY	$25	$4,750
4	PVC Pipe for Water Main, 8-In. Dia.	1,400	LF	$42	$58,800
5	8-Inch Gate Valve and Valve Box	3	EA	$1,200	$3,600
6	Hydrant Assembly	3	EA	$4,000	$12,000
7	Concrete Encasement	7	EA	$150	$1,050
8	Water Main Fittings	1	LS	$12,000	$12,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	36	EA	$400	$14,400
11	Asphalt Concrete Pavement Repair, Class B	70	SY	$50	$3,500
12	Gravel Repair	870	SY	$15	$13,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$7,000	$7,000
				Subtotal:	$151,150
				Washington State Sales Tax (7.9%):	$11,941
				Total Construction Cost (rounded):	$163,000
				Contingency (25%):	$40,750
				Total Estimated Construction Cost:	**$203,750**
				Admin. Fiscal, Legal and Engineering (25%):	$50,938
				Total Estimated Project Cost (rounded):	**$260,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", MONROE ST. FROM 7TH AVE. TO VANCE RD.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$9,000	$9,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	100	CY	$25	$2,500
4	PVC Pipe for Water Main, 8-In. Dia.	700	LF	$42	$29,400
5	8-Inch Gate Valve and Valve Box	2	EA	$1,200	$2,400
6	Hydrant Assembly	2	EA	$4,000	$8,000
7	Concrete Encasement	4	EA	$150	$600
8	Water Main Fittings	1	LS	$6,000	$6,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	2	EA	$400	$800
11	Asphalt Concrete Pavement Repair, Class B	470	SY	$50	$23,500
12	Gravel Repair	70	SY	$15	$1,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$4,000	$4,000
				Subtotal:	$94,250
				Washington State Sales Tax (7.9%):	$7,446
				Total Construction Cost (rounded):	$102,000
				Contingency (25%):	$25,500
				Total Estimated Construction Cost:	**$127,500**
				Admin. Fiscal, Legal and Engineering (25%):	$31,875
				Total Estimated Project Cost (rounded):	**$160,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", N. 6TH ST. FROM B ST. TO WASHINGTON ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$10,000	$10,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	110	CY	$25	$2,750
4	PVC Pipe for Water Main, 8-In. Dia.	800	LF	$42	$33,600
5	8-Inch Gate Valve and Valve Box	2	EA	$1,200	$2,400
6	Hydrant Assembly	2	EA	$4,000	$8,000
7	Concrete Encasement	4	EA	$150	$600
8	Water Main Fittings	1	LS	$7,000	$7,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	8	EA	$400	$3,200
11	Asphalt Concrete Pavement Repair, Class B	530	SY	$50	$26,500
12	Gravel Repair	70	SY	$15	$1,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$5,000	$5,000
				Subtotal:	$107,100
				Washington State Sales Tax (7.9%):	$8,461
				Total Construction Cost (rounded):	$116,000
				Contingency (25%):	$29,000
				Total Estimated Construction Cost:	**$145,000**
				Admin. Fiscal, Legal and Engineering (25%):	$36,250
				Total Estimated Project Cost (rounded):	**$190,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", IN ALLEY NORTH OF MAPLE ST. FROM 6TH ST. TO MAIN ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$12,000	$12,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	160	CY	$25	$4,000
4	PVC Pipe for Water Main, 8-In. Dia.	1,200	LF	$42	$50,400
5	8-Inch Gate Valve and Valve Box	3	EA	$1,200	$3,600
6	Hydrant Assembly	3	EA	$4,000	$12,000
7	Concrete Encasement	6	EA	$150	$900
8	Water Main Fittings	1	LS	$10,000	$10,000
9	Connection to Existing System	3	EA	$2,500	$7,500
10	Reconnect Existing Side Services	16	EA	$400	$6,400
11	Asphalt Concrete Pavement Repair, Class B	70	SY	$50	$3,500
12	Gravel Repair	740	SY	$15	$11,100
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$6,000	$6,000
				Subtotal:	$129,400
				Washington State Sales Tax (7.9%):	$10,223
				Total Construction Cost (rounded):	$140,000
				Contingency (25%):	$35,000
				Total Estimated Construction Cost:	**$175,000**
				Admin. Fiscal, Legal and Engineering (25%):	$43,750
				Total Estimated Project Cost (rounded):	**$220,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", PINE ST. FROM MAIN ST. TO 2ND ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$17,000	$17,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	190	CY	$25	$4,750
4	PVC Pipe for Water Main, 8-In. Dia.	1,400	LF	$42	$58,800
5	8-Inch Gate Valve and Valve Box	3	EA	$1,200	$3,600
6	Hydrant Assembly	3	EA	$4,000	$12,000
7	Concrete Encasement	7	EA	$150	$1,050
8	Water Main Fittings	1	LS	$12,000	$12,000
9	Connection to Existing System	3	EA	$2,500	$7,500
10	Reconnect Existing Side Services	26	EA	$400	$10,400
11	Asphalt Concrete Pavement Repair, Class B	930	SY	$50	$46,500
12	Gravel Repair	70	SY	$15	$1,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$8,000	$8,000
				Subtotal:	$184,650
				Washington State Sales Tax (7.9%):	$14,587
				Total Construction Cost (rounded):	$199,000
				Contingency (25%):	$49,750
				Total Estimated Construction Cost:	**$248,750**
				Admin. Fiscal, Legal and Engineering (25%):	$62,188
				Total Estimated Project Cost (rounded):	**$320,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", IN ALLEY EAST OF 2ND AVE. FROM WASHINGTON ST. TO MONROE ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$14,000	$14,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	190	CY	$25	$4,750
4	PVC Pipe for Water Main, 8-In. Dia.	1,400	LF	$42	$58,800
5	8-Inch Gate Valve and Valve Box	3	EA	$1,200	$3,600
6	Hydrant Assembly	3	EA	$4,000	$12,000
7	Concrete Encasement	7	EA	$150	$1,050
8	Water Main Fittings	1	LS	$12,000	$12,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	36	EA	$400	$14,400
11	Asphalt Concrete Pavement Repair, Class B	70	SY	$50	$3,500
12	Gravel Repair	870	SY	$15	$13,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$7,000	$7,000
				Subtotal:	$151,150
				Washington State Sales Tax (7.9%):	$11,941
				Total Construction Cost (rounded):	$163,000
				Contingency (25%):	$40,750
				Total Estimated Construction Cost:	**$203,750**
				Admin. Fiscal, Legal and Engineering (25%):	$50,938
				Total Estimated Project Cost (rounded):	**$260,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", IN ALLEY EAST OF 4TH AVE. FROM WASHINGTON ST. TO MONROE ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$14,000	$14,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	190	CY	$25	$4,750
4	PVC Pipe for Water Main, 8-In. Dia.	1,400	LF	$42	$58,800
5	8-Inch Gate Valve and Valve Box	3	EA	$1,200	$3,600
6	Hydrant Assembly	3	EA	$4,000	$12,000
7	Concrete Encasement	7	EA	$150	$1,050
8	Water Main Fittings	1	LS	$12,000	$12,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	36	EA	$400	$14,400
11	Asphalt Concrete Pavement Repair, Class B	70	SY	$50	$3,500
12	Gravel Repair	870	SY	$15	$13,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$7,000	$7,000
				Subtotal:	$151,150
				Washington State Sales Tax (7.9%):	$11,941
				Total Construction Cost (rounded):	$163,000
				Contingency (25%):	$40,750
				Total Estimated Construction Cost:	**$203,750**
				Admin. Fiscal, Legal and Engineering (25%):	$50,938
				Total Estimated Project Cost (rounded):	**$260,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", IN ALLEY EAST OF 6TH AVE. FROM WASHINGTON ST. TO MONROE ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$14,000	$14,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	190	CY	$25	$4,750
4	PVC Pipe for Water Main, 8-In. Dia.	1,400	LF	$42	$58,800
5	8-Inch Gate Valve and Valve Box	3	EA	$1,200	$3,600
6	Hydrant Assembly	3	EA	$4,000	$12,000
7	Concrete Encasement	7	EA	$150	$1,050
8	Water Main Fittings	1	LS	$12,000	$12,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	36	EA	$400	$14,400
11	Asphalt Concrete Pavement Repair, Class B	70	SY	$50	$3,500
12	Gravel Repair	870	SY	$15	$13,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$7,000	$7,000
				Subtotal:	$151,150
				Washington State Sales Tax (7.9%):	$11,941
				Total Construction Cost (rounded):	$163,000
				Contingency (25%):	$40,750
				Total Estimated Construction Cost:	**$203,750**
				Admin. Fiscal, Legal and Engineering (25%):	$50,938
				Total Estimated Project Cost (rounded):	**$260,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", C ST. FROM 6TH AVE. TO MAIN ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$12,000	$12,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	130	CY	$25	$3,250
4	PVC Pipe for Water Main, 8-In. Dia.	1,000	LF	$42	$42,000
5	8-Inch Gate Valve and Valve Box	2	EA	$1,200	$2,400
6	Hydrant Assembly	2	EA	$4,000	$8,000
7	Concrete Encasement	5	EA	$150	$750
8	Water Main Fittings	1	LS	$8,000	$8,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	10	EA	$400	$4,000
11	Asphalt Concrete Pavement Repair, Class B	670	SY	$50	$33,500
12	Gravel Repair	70	SY	$15	$1,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$5,000	$5,000
				Subtotal:	$126,950
				Washington State Sales Tax (7.9%):	$10,029
				Total Construction Cost (rounded):	$137,000
				Contingency (25%):	$34,250
				Total Estimated Construction Cost:	**$171,250**
				Admin. Fiscal, Legal and Engineering (25%):	$42,813
				Total Estimated Project Cost (rounded):	**$220,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", B ST. FROM ALLISON ST. TO BOUNDARY RD.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$24,000	$24,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	280	CY	$25	$7,000
4	PVC Pipe for Water Main, 8-In. Dia.	2,100	LF	$42	$88,200
5	8-Inch Gate Valve and Valve Box	5	EA	$1,200	$6,000
6	Hydrant Assembly	5	EA	$4,000	$20,000
7	Concrete Encasement	11	EA	$150	$1,650
8	Water Main Fittings	1	LS	$18,000	$18,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	22	EA	$400	$8,800
11	Asphalt Concrete Pavement Repair, Class B	1,400	SY	$50	$70,000
12	Gravel Repair	70	SY	$15	$1,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$11,000	$11,000
				Subtotal:	$262,700
				Washington State Sales Tax (7.9%):	$20,753
				Total Construction Cost (rounded):	$283,000
				Contingency (25%):	$70,750
				Total Estimated Construction Cost:	**$353,750**
				Admin. Fiscal, Legal and Engineering (25%):	$88,438
				Total Estimated Project Cost (rounded):	**$450,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", NORTH ST. FROM 6th AVE. TO BOUNDARY RD.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$20,000	$20,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	240	CY	$25	$6,000
4	PVC Pipe for Water Main, 8-In. Dia.	1,800	LF	$42	$75,600
5	8-Inch Gate Valve and Valve Box	4	EA	$1,200	$4,800
6	Hydrant Assembly	4	EA	$4,000	$16,000
7	Concrete Encasement	9	EA	$150	$1,350
8	Water Main Fittings	1	LS	$15,000	$15,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	12	EA	$400	$4,800
11	Asphalt Concrete Pavement Repair, Class B	1,000	SY	$50	$50,000
12	Gravel Repair	200	SY	$15	$3,000
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$9,000	$9,000
				Subtotal:	$212,550
				Washington State Sales Tax (7.9%):	$16,791
				Total Construction Cost (rounded):	$229,000
				Contingency (25%):	$57,250
				Total Estimated Construction Cost:	**$286,250**
				Admin. Fiscal, Legal and Engineering (25%):	$71,563
				Total Estimated Project Cost (rounded):	**$360,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", FERN ST. FROM MAIN ST. TO BOUNDARY RD.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$16,000	$16,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	170	CY	$25	$4,250
4	PVC Pipe for Water Main, 8-In. Dia.	1,300	LF	$42	$54,600
5	8-Inch Gate Valve and Valve Box	3	EA	$1,200	$3,600
6	Hydrant Assembly	3	EA	$4,000	$12,000
7	Concrete Encasement	7	EA	$150	$1,050
8	Water Main Fittings	1	LS	$11,000	$11,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	24	EA	$400	$9,600
11	Asphalt Concrete Pavement Repair, Class B	870	SY	$50	$43,500
12	Gravel Repair	70	SY	$15	$1,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$7,000	$7,000
				Subtotal:	$170,650
				Washington State Sales Tax (7.9%):	$13,481
				Total Construction Cost (rounded):	$184,000
				Contingency (25%):	$46,000
				Total Estimated Construction Cost:	**$230,000**
				Admin. Fiscal, Legal and Engineering (25%):	$57,500
				Total Estimated Project Cost (rounded):	**$290,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", ROSE ST. FROM 6TH AVE. TO MAIN ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$12,000	$12,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	130	CY	$25	$3,250
4	PVC Pipe for Water Main, 8-In. Dia.	1,000	LF	$42	$42,000
5	8-Inch Gate Valve and Valve Box	2	EA	$1,200	$2,400
6	Hydrant Assembly	2	EA	$4,000	$8,000
7	Concrete Encasement	5	EA	$150	$750
8	Water Main Fittings	1	LS	$8,000	$8,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	18	EA	$400	$7,200
11	Asphalt Concrete Pavement Repair, Class B	670	SY	$50	$33,500
12	Gravel Repair	70	SY	$15	$1,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$6,000	$6,000
				Subtotal:	$131,150
				Washington State Sales Tax (7.9%):	$10,361
				Total Construction Cost (rounded):	$142,000
				Contingency (25%):	$35,500
				Total Estimated Construction Cost:	**$177,500**
				Admin. Fiscal, Legal and Engineering (25%):	$44,375
				Total Estimated Project Cost (rounded):	**$230,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", CEDAR ST. FROM 6TH AVE. TO 2ND ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$23,000	$23,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	250	CY	$25	$6,250
4	PVC Pipe for Water Main, 8-In. Dia.	1,900	LF	$42	$79,800
5	8-Inch Gate Valve and Valve Box	4	EA	$1,200	$4,800
6	Hydrant Assembly	4	EA	$4,000	$16,000
7	Concrete Encasement	10	EA	$150	$1,500
8	Water Main Fittings	1	LS	$16,000	$16,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	40	EA	$400	$16,000
11	Asphalt Concrete Pavement Repair, Class B	1,270	SY	$50	$63,500
12	Gravel Repair	70	SY	$15	$1,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$11,000	$11,000
				Subtotal:	$245,900
				Washington State Sales Tax (7.9%):	$19,426
				Total Construction Cost (rounded):	$265,000
				Contingency (25%):	$66,250
				Total Estimated Construction Cost:	**$331,250**
				Admin. Fiscal, Legal and Engineering (25%):	$82,813
				Total Estimated Project Cost (rounded):	**$420,000**

CITY OF MABTON
ENGINEER'S ESTIMATE
(ENR NATIONAL CONSTRUCTION COST INDEX: 9437, JANUARY 2013)

WATER MAIN, 8", 5TH ST. FROM MAPLE ST. TO CEDAR ST.

NO.	ITEM	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$9,000	$9,000
2	Trench Excavation Safety Systems	1	LS	$1,000	$1,000
3	Bank Run Gravel for Trench Backfill	100	CY	$25	$2,500
4	PVC Pipe for Water Main, 8-In. Dia.	700	LF	$42	$29,400
5	8-Inch Gate Valve and Valve Box	2	EA	$1,200	$2,400
6	Hydrant Assembly	2	EA	$4,000	$8,000
7	Concrete Encasement	4	EA	$150	$600
8	Water Main Fittings	1	LS	$6,000	$6,000
9	Connection to Existing System	2	EA	$2,500	$5,000
10	Reconnect Existing Side Services	8	EA	$400	$3,200
11	Asphalt Concrete Pavement Repair, Class B	470	SY	$50	$23,500
12	Gravel Repair	70	SY	$15	$1,050
13	Temporary Water Pollution/Erosion Control	1	LS	$1,000	$1,000
14	Project Temporary Traffic Control	1	LS	$4,000	$4,000
				Subtotal:	$96,650
				Washington State Sales Tax (7.9%):	$7,635
				Total Construction Cost (rounded):	$104,000
				Contingency (25%):	$26,000
				Total Estimated Construction Cost:	**$130,000**
				Admin. Fiscal, Legal and Engineering (25%):	$32,500
				Total Estimated Project Cost (rounded):	**$170,000**

APPENDIX P

WATER AND SEWER CODE

Title 13

PUBLIC SERVICES*

Chapters:

Chapter 13.04

WATER AND SEWERS

Sections:

I. GENERAL PROVISIONS

II. WATER SERVICE

III. SEWER SERVICE

* Editor's Note: Current water and sewer charges are on file in the clerk-treasurer's office.

Sections: (Continued)

Sections: (Continued)

I. GENERAL PROVISIONS

13.04.010 Definitions.

As used in this chapter, the following definitions shall apply:

"Commercial sewer user" means any user of the city sewer system which is not a residential unit or vegetation nursery.

"Consumer" means the person or business concern using the service.

"Property owner" means the person owning the real property according to the records of the county treasurer and/or having responsibility for payment of taxes thereon.

"Sewer service" means the activities described in this chapter incident to the removal and disposal of sewage and waste fluids from buildings on real property and that constitute the sanitary sewerage system of the city.

"Water service" means the activities described in this chapter incident to the supplying of domestic water to the consumers and/or real property. (Ord. 891 § 1, 2008; Ord. 507 § 1, 1978; Ord. 489 § 1, 1977: Ord. 475-4B § 1, 1976)

13.04.020 Administration.

The mayor shall appoint some competent person who shall act as water and sewer superintendent for the city and shall supervise the operation of said utilities. (Ord. 475-B § 42, 1976)

13.04.030 Application for water and sewer service.

A. All property within the city limits of the city shall be required to apply for and use the domestic water and/or sewer provided for in this chapter.

B. All applications for water and/or sewer service shall be made to the city clerk by the property owner or his agent on forms supplied by the clerk. (Ord. 475-B § 2, 1976)

II. WATER SERVICE

13.04.040 Installation - - Required. A. A separate meter and service connection shall be installed to serve each single-family dwelling unit supplied with water service; provided, multiple dwellings (including duplexes and apartment houses), mobile home parks, co-ops, condomiums and similar dwelling unit complexes, under single or common ownership or management, may be served by either a single meter and service connection or multiple meters and service connections at the option of the owner or manager thereof, regardless of whether the dwelling units therein are individual consumers for the purpose of computing water service charges as provided in this chapter.

B. In the event of the sale of other transfer of title of any one-family dwelling unit constituting a portion of a multiple dwelling, mobile home park, co-op, condominium, or other similar dwelling unit complex so that such sold or otherwise transferred dwelling unit is separately owned, a separate meter and service connection shall be installed to serve each such separately owned dwelling unit.

C. In the event a separate meter and service connection is required by this section, the town may discontinue water service to the meter that supplies water to the premises required to be separately served. Said discontinuance of service shall continue until such time as a separate meter and service connection is installed pursuant to this chapter. (Ord. 475-B Sec. 3, 1976).

13.04.050 Installation - - Pipes. The installation of water service pipes extending from the main to the water meter box line, together with the necessary labor and materials for such construction, shall be made by the water department. (Ord. 475-B Sec. 24, 1976).

13.04.060 Installation - - Depth of connections. All pipes leading to or from the town water meter shall be laid not less than thirty-six inches below ground level. (Ord. 475-B Sec. 7, 1976).

13.04.070 Installation - - Freezing precautions. All service and household installations shall be placed at such a depth as to avoid all probability of freezing. The water department shall not be responsible for any services frozen between the water meter and the premises to be served and the owner shall pay the cost of thawing wherever the same is necessary. (Ord. 475-B Sec. 32, 1976).

13.04.080 Installation - - Valves. The water department shall have the right to order the installation of check valves, pressure relief valves and/or other approved backflow prevention devices, on services where this is deemed necessary to protect the city's water from the water, or in cases where contaminated or stagnant water may back into the city's water mains. The number, location and type of check valves or pressure relief valve, or both, to be used shall be fixed and approved by the water department. The water department shall discontinue water service to the premises if the installation of such valve or backflow prevention device has not been completed within ten days after written notice has been served. (Ord. 475-B, Sec. 27, 1976).

similar dwelling unit complexes, under single or common ownership or management, may be served by either a single meter and service connection or multiple meters and service connections at the option of the owner or manager thereof, regardless of whether the dwelling units therein are individual consumers for the purpose of computing water service charges as provided in this chapter.

B. In the event of the sale of other transfer of title of any one-family dwelling unit constituting a portion of a multiple dwelling, mobile home park, co-op, condominium, or other similar dwelling unit complex so that such sold or otherwise transferred dwelling unit is separately owned, a separate meter and service connection shall be installed to serve each such separately owned dwelling unit.

C. In the event a separate meter and service connection is required by this section, the town may discontinue water service to the meter that supplies water to the premises required to be separately served. Said discontinuance of service shall continue until such time as a separate meter and service connection is installed pursuant to this chapter. (Ord. 475-B §3, 1976).

13.04.050 Installation--Pipes. The installation of water service pipes extending from the main to the water meter box line, together with the necessary labor and materials for such construction, shall be made by the water department. (Ord. 475-B §24, 1976).

13.04.060 Installation--Depth of connections. All pipes leading to or from the town water meter shall be laid not less than thirty-six inches below ground level. (Ord. 475-B §7, 1976).

13.04.070 Installation--Freezing precautions. All service and household installations shall be placed at such a depth as to avoid all probability of freezing. The water department shall not be responsible for any services frozen between the water meter and the premises to be served and the owner shall pay the cost of thawing wherever the same is necessary. (Ord. 475-B §32, 1976).

13.04.080 Installation--Valves. The water department shall have the right to order the installation of check valves, pressure relief valves and/or other approved backflow prevention devices, on services where this is deemed necessary to protect the city's water from the water, or in cases where contaminated or stagnant water may back into the city's water mains. The number, location and type of check valves or pressure relief valve, or both, to be used shall be fixed and approved by the water department. The water department shall discontinue water service to the

premises if the installation of such valve or backflow prevention device has not been completed within ten days after written notice has been served. (Ord. 475-B §27, 1976).

13.04.090 Water meter--Access. Authorized town employees shall have free access to stopcocks and water meters and no other person shall alter, operate or remove meters or stopcocks. Any person violating the provisions of this section shall be subject to a minimum fine of fifty dollars, which shall not be suspended. (Ord. 475-B §9, 1976).*

13.04.100 Water meter--Failure. In the event of meter failure, the consumer or property owner shall be charged the minimum charge until the meter is repaired. (Ord. 475-B §11, 1976).

13.04.110 Service--Commencement. After the applicant has complied with all the prescribed requirements relating to the application for service connection and has paid all charges, the water department shall cause the property described to be connected with the municipal water system. Where practicable the service connection shall be made in the street in front of the property to be served. Each service shall consist of a tap and connection to the main pipe, a length of service pipe extending to the property line and a curb cock and water meter installed, together with the necessary fittings and meter box for same. The water department shall have the right to install a single service pipe from the main to the property line of sufficient size to supply two separate properties, connecting two branches leading to the right and left with individual curb cocks for the separate properties. (Ord. 475-B §25, 1976).

13.04.120 Service--Changes. Any change made in a water or sewer service installation at the request of the property owner or water user, after such installation has been made, shall be made solely at the expense of the applicant who shall pay the entire cost thereof. (Ord. 475-B §26, 1976).

13.04.130 Ownership of equipment. The ownership of all main extensions, service pipes and appurtenant equipment maintained by the water and sewer departments shall be vested in the town, and in no case shall the owner of any premises have the right to claim or reclaim any part thereof. (Ord. 475-B §29, 1976).

*Editor's Note: There are two sections numbered 9 in Ordinance 475-B.

13.04.140 Responsibility for leaks. Owners of services are responsible for all leaks or damage on account of leaks from the service pipes leading from the city's water meter to the premises served. (Ord. 475-B §28, 1976).

13.04.150 Shutoff. The water may, at any time, be shut off from the mains without notice for repairs, extensions or other necessary purposes. Persons having boilers supplied by direct pressure from the mains are cautioned against danger of explosion or collapse and where meters are in use on such service, a safety valve shall be placed between the boiler and the meter at the property owner's expense and the property owner shall be responsible for all damage caused to the meter by hot water. The town shall not be responsible for the failure to supply water. The town shall make a reasonable effort to notify the consumer or property owner when the water is to be shut off for repair. (Ord. 475-B §9, 1976).*

13.04.160 Disconnection and reconnection. At the request of the property owner, water service may be disconnected at a charge of five dollars. (Ord. 475-B §19, 1976).

13.04.170 Use limitation. The town may through its administrative officials regulate the use of water and may limit the use of water in the event of shortage. The town shall not be responsible for any damages caused to property, property owners or consumers by reason of decreased water supply. (Ord. 475-B §10, 1976).

13.04.180 Wastage. It is unlawful for any person to waste water or allow it to be wasted by imperfect or leaking stops, valves, pipes, closets, faucets or other fixtures, or to use water closets without self-closing valves, or to use it in violation of the town's ordinances regulating said use of water. The wilful wasting of water shall be a misdemeanor, punishable under the provisions of Section 13.04-.650. If such waste of water continues after notice from the water department to make repairs and to desist from the waste of water, the water department shall shut off the supply of water from such premises until the necessary repairs have been made and a five dollar fee for shutting off and turning on the service shall be made, said fees to be paid prior to resumption of service. (Ord. 475-B §31, 1976).

III. SEWER SERVICE

13.04.190 Connection required. The owner of a lot or parcel of real property within two hundred feet of the

*Editor's Note: There are two sections numbered 9 in Ordinance 475-B.

sanitary sewerage system of the town, as it now exists and as it may be improved and extended in the future, upon which there shall be situated any building for human occupation, or for use for any other purpose which shall require sewer service, shall cause a connection to be made between each of said buildings or structures and said sewerage system; provided, that where more than one such building is located on a lot and all such buildings may be served by one sewer connection, only one connection for such building need be made. (Ord. 489 §4(part), 1977: Ord. 475-B §37(A), 1976).

13.04.200 Permit--Required. No unauthorized person shall uncover, make any connection with or opening into, use, alter or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the water and sewer superintendent. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.210 Permit--Classes--Application--Fee. There shall be two classes of building sewer permits:

A. For residential and commercial service; and

B. For service to establishments producing industrial wastes.

In either case, the owner or his agent shall make application on a special form furnished by the town. The permit application shall be supplemented by any plans, specifications or other information considered pertinent in the judgment of the water and sewer superintendent. A permit and inspection fee of twenty-five dollars for a residential or commercial building sewer permit and twenty-five dollars for an industrial building sewer permit shall be paid to the town at the time the application is filed. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.220 Separate connection required when. A separate and independent building sewer shall be provided for every building; except, where one building stands at the rear of another on an interior lot and no private sewer is available or can be constructed to the rear building through an adjoining alley, court, yard or driveway, the building sewer from the front building may be extended to the rear building and the whole considered as one building sewer. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.230 Excavations. All excavations for building sewer installation shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the town. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.240 Use of old sewers. Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the water and sewer superintendent, to meet all requirements of this chapter. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.250 Construction specifications. The size, slope, alignment, materials of construction of a building sewer, and the methods to be used in excavating, placing of the pipe, jointing, testing and backfilling the trench, shall all conform to the requirements of the building and plumbing code or other applicable rules and regulations of the town. In the absence of code provisions or in amplification thereof, the materials and procedures set forth in appropriate specifications of the A.S.T.M. and the W.P.C.F. Manual of Practice No. 9 shall apply. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.260 Elevation. Whenever possible, the building sewer shall be brought to the building at an elevation below the basement floor. In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such building drain shall be lifted by an approved means and discharged to the building sewer. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.270 Connection--Restrictions. No person shall make connection of roof downspouts, exterior foundation drains, areaway drains, or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly to a public sanitary sewer. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.280 Connection--Specifications. The connection of the building sewer into the public sewer shall conform to the requirements of the building and plumbing code or other applicable rules and regulations of the town, or the procedures set forth in appropriate specifications of the A.S.T.M. and the W.P.C.F. Manual of Practice No. 9. All such connections shall be made gastight and watertight. Any deviation from the prescribed procedures and materials must be approved by the water and sewer superintendent or his representative. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.290 Connection--Compliance with Uniform Plumbing Code. All connections shall be made to said sewerage system in a permanent and sanitary manner, in accordance with the specifications as set by the Unifrom Plumbing Code as now written or as hereafter amended. All connections shall be

made before any use or occupation of any building not now used or occupied shall be made. (Ord. 489 §§3, 4(part), 1977: Ord. 475-B §37(B), 1976).

13.04.300 Connection--Completion by town. If any such connection is not made within the time provided, the water and sewer superintendent of the town, or such other employee of the town as the council may hereafter designate, is authorized to direct to cause the same to be made and to file a statement of the cost thereof with the town clerk-treasurer, and whereupon such amount together with a penalty of twenty percent thereof plus interest at the rate of eight percent per year upon the total amount of such cost and penalty, shall be assessed against the property upon which said building or structure is situated, and shall become a lien thereon as provided in this chapter. (Ord. 489 §4(part), 1977: Ord. 475-B §37(C), 1976).

13.04.310 Costs--Indemnification. All costs and expenses incident to the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the town from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer. (Ord. 489 §4(part), 1977: Ord. 475-B §37 (D)(part), 1976).

13.04.320 Discharges--Prohibited to sanitary sewer when. No person shall discharge or cause to be discharged any stormwater, surface water, groundwater, roof runoff, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process waters to any sanitary sewer. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.330 Discharges--Unpolluted drainage. Stormwater and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as combined sewers or storm sewers, or to a natural outlet approved by the water and sewer superintendent. Industrial cooling water or unpolluted process waters may be discharged, on approval of the water and sewer superintendent, to a storm sewer, combined sewer or natural outlet. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.340 Discharges--Prohibited. No person shall discharge or cause to be discharged any of the following described waters or wastes to any public sewers:

A. Any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid or gas;

B. Any waters or wastes containing toxic or poisonous solids, liquids or gases in sufficient quantity, either singly or by interaction with other wastes to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance, or create any hazard in the receiving waters of the sewage treatment plant, including but not limited to cyanides in excess of two mg/l as CN in the wastes as discharged to the public sewer;

C. Any waters or wastes having a pH lower than 5.5, or having any other corrosive property capable of causing damage or hazard to structures, equipment and personnel of the sewage works;

D. Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the sewage works such as, but not limited to, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails and paper dishes, cups, milk containers, etc., either whole or ground by garbage grinders. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.350 Discharges--Designated as harmful. No person shall discharge or cause to be discharged the following described substances, materials, waters or wastes if it appears likely in the opinion of the water and sewer superintendent that such wastes can harm either the sewers, sewage treatment process, or equipment, have an adverse effect on the receiving stream or can otherwise endanger life, limb, public property, or constitute a nuisance. In forming his opinion as to the acceptability of these wastes, the water and sewer superintendent will give consideration to such factors as to quantities of subject wastes in relation to flows and velocities in the sewers, materials of construction of the sewers, nature of the sewage treatment process, capacity of the sewage treatment plant, degree of treatability of wastes in the sewage treatment plant, and other pertinent factors. The substances prohibited are:

A. Any liquid or vapor having a temperature higher than one hundred fifty degrees Fahrenheit (sixty-five degrees Celsius);

B. Any water or waste containing fats, gas, grease or oils, whether emulsified or not, in excess of one hundred mg/l or containing substances which may solidify or become viscous at temperatures between thirty-two and one hundred fifty degrees Fahrenheit (zero and sixty-five degrees Celsius);

C. Any garbage that has not been properly shredded. The installation and operation of any garbage grinder equipped with a motor of three-fourths horsepower (0.76 hp metric) or greater shall be subject to the review and approval of the water and sewer superintendent;

D. Any waters or wastes containing strong acid iron pickling wastes, or concentrated plating solutions whether neutralized or not;

E. Any waters or wastes containing iron, chromium, copper, zinc and similar objectionable or toxic substances; or wastes exerting an excessive chlorine requirement, to such degree that any such material received in the composite sewage at the sewage treatment works exceeds the limits established by the water and sewer superintendent for such materials;

F. Any waters or wastes containing phenols or other taste-producing or odor-producing substances, in such concentrations exceeding limits which may be established by the water and sewer superintendent as necessary, after treatment of the composite sewage, to meet the requirements of the state, federal, or other public agencies of jurisdiction for such discharge to the receiving waters;

G. Any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the water and sewer superintendent in compliance with applicable state or federal regulations;

H. Any waters or wastes having a pH in excess of 9.5;

I. Materials which exert or cause:

1. Unusual concentration of inert suspended solids (such as, but not limited to, fuller's earth, lime slurries, and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate),

2. Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions),

3. Unusual BOD, chemical oxygen demand, or chlorine requirements in such quantities as to constitute a significant load on the sewage treatment works,

4. Unusual volume of flow or concentration of wastes constituting "slugs" as defined in this chapter;

J. Waters or wastes containing substances which are not amenable to treatment or reduction by the sewage treatment processes employed, or are amenable to treatment only to such a degree that the sewage treatment plant effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving waters. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.360 Discharges--Superintendent's powers. If any waters or wastes are discharges, or are proposed to be discharged to the public sewers, which waters contain the substances or possess the characteristics enumerated in this article, and which in the judgment of the water and sewer

superintendent may have a deleterious effect upon the sewage works, processes, equipment or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the water and sewer superintendent may:

A. Reject the wastes;

B. Require a pretreatment to an acceptable condition for discharge to the public sewers;

C. Require control over the quantities and rates of discharge; and/or

D. Require payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges under the provisions of this chapter. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.370 Discharges--Special agreements. No statement contained in this article shall be construed as preventing any special agreement or arrangement between the town and any industrial concern whereby an industrial waste of unusual strength or character may be accepted by the town for treatment, subject to payment therefor, by the industrial concern. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.380 Grease, oil and sand interceptors. Grease, oil and sand interceptors shall be provided when, in the opinion of the water and sewer superintendent, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, sand, or other harmful ingredients; except, that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the water and sewer superintendent, and shall be located as to be readily and easily accessible for cleaning and inspection. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.390 Pretreatment facilities--Installation. If the water and sewer superintendent permits the pretreatment or equalization of waste flows, the design and installation of the plants and equipment shall be subject to the review and approval of the water and sewer superintendent, and subject to the requirements of all applicable codes, ordinances and laws. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.400 Pretreatment facilities--Maintenance. Where preliminary treatment or flow-equalizing facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976).

13.04.410 Control manhole. When required by the water and sewer superintendent, the owner of any property serviced by a building sewer carrying industrial wastes shall install a suitable control manhole together with such necessary meters and other appurtenances in the building sewer to facilitate observation, sampling and measurement of the wastes. Such manhole, when required, shall be accessibly and safely located, and shall be constructed in accordance with plans approved by the water and sewer superintendent. The manhole shall be installed by the owner at his expense, and shall be maintained by him so as to be safe and accessible at all times. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976)

13.04.420 Measurements, tests and analyses. All measurements, tests and analyses of the characteristics of waters and wastes to which reference is made in this chapter shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater," published by the American Public Health Association, and shall be determined at the control manhole provided, or upon suitable samples taken at said control manhole. In the event that no special manhole has been required, the control manhole shall be considered to be nearest downstream manhole in the public sewer to the point at which the building sewer is connected. Sampling shall be carried out by customarily accepted methods to reflect the effect of constituents upon the sewage works and to determine the existence of hazards to life, limb and property. The particular analyses involved will determine whether a twenty-four-hour composite of all outfalls of a premises is appropriate or whether a grab sample or samples should be taken. Normally, but not always, BOD and suspended solids analyses are obtained from twenty-four-hour composites of all outfalls whereas pH is determined from periodic grab samples. (Ord. 489 §4(part), 1977: Ord. 475-B §37(D)(part), 1976)

IV. RATES AND CHARGES

13.04.430 Water--Connection and meter installation. A. Water meters shall be owned by the city. Prior to the installation of the initial water meter the clerk shall collect an installation charge as set forth below. Subsequent repairs or replacements of water meters due to failure or wear shall be the responsibility of the city.

Size of Meter	Water Service Installation Charge
3/4 inch meter	
1 inch meter	

1 1/4 inch meter	Cost of labor and material plus ten percent
1 1/2 inch meter	
2 inch meter	

B. Installation of meters larger than specified shall be upon the payment of costs and materials and labor for installation as determined by the clerk-treasurer.

C. The property owner shall bear all expense for construction of water service from water mains to building outlets.

D. Commencing with the billing year January, 1999, a water system connection fee of two hundred dollars shall be added to the basic cost of labor and material plus ten percent. Commencing with the bill year January, 2000, this fee shall increase to three hundred dollars. (Ord. 807 §1, 1998: Ord. 475-B §12, 1976)

13.04.440 Water--More than one premises supplied through one meter.

Where more than one individual consumer is supplied with water through one meter, the bill shall be computed as though there were a separate metered service for each individual consumer and each used an equal quantity of water consumed. There shall be no deductions for vacant premises unless service for that premises has been previously disconnected pursuant to Section 13.04.480. For purposes of this section, each one-family dwelling unit and each dwelling unit in a two-family dwelling or in a multiple dwelling shall constitute one individual consumer. Further, for purposes of this section, each separate mobile home site within a mobile home court, park, or other mobile home complex shall constitute one individual consumer; provided, an automobile trailer court, rather than each separate trailer site therein, shall constitute an individual consumer for purposes of this section. For purposes of this section, each dwelling unit existing on a labor camp shall constitute one individual consumer and shall be charged no less than the minimum charge for each unit. (Ord. 475-B §4, 1976)

13.04.450 Water--Service rates.

A. Water rates within the corporate city limits of Mabton shall be as follows:

Meter Size	Consumption	Minimum	Overage per 134 c.f.
3/4" or smaller	First 536 c.f.	$23.35/$15.35 Senior Rate	
	Next 402 c.f.		$1.24
	Over 938 c.f.		$1.28
1"	First 536 c.f.	$24.59/$16.59 Senior Rate	
	Next 402 c.f.		$1.24
	Over 938 c.f.		$1.28
1 1/4" to 1 1/2"	First 536 c.f.	$31.11/$23.11 Senior Rate	
	Next 402 c.f.		$1.24
	Over 938 c.f.		$1.28
2"	First 938 c.f.	$33.21/$25.21 Senior Rate	
	Next 4,020 c.f.		$.98
	Over 4,958 c.f.		$1.08
3"	First 938 c.f.	$56.29/$48.29 Senior Rate	
	Next 4,020 c.f.		$.98
	Over 4,958 c.f.		$1.08
4"	First 938 c.f.	$96.26/$88.26 Senior Rate	
	Next 4,020 c.f.		$.98
	Over 4,958 c.f.		$1.08

Meter Size	Consumption	Minimum	Overage per 134 c.f.
6"	First 938 c.f.	$189.51/ $181.51 Senior Rate	
	Next 4,020 c.f.		$.98
	Over 4,958 c.f.		$1.08

B. Outside the corporate limits: one hundred fifty percent of the rate within corporate limits;

C. Bulk water consumers shall be served at the convenience of the city and shall pay the sum of two dollars and fifty cents per one thousand gallon units with no proration for fractions thereof;

D. Commencing with the billing year January, 2009, a water system connection fee of five hundred dollars shall be charged for a water connection. This fee may be amended by resolution of the city council from time to time, and, upon passage, shall be on file at the office of the city clerk. (Ord. 870 §2, 2005; Ord. 849 §2, 2002; Ord. 840 §2, 2001; Ord. 835 §2, 2000; Ord. 809 §1, 1998; Ord. 704 §2, 1990; Ord. 686 §2, 1988; Ord. 669 §2, 1986; Ord. 654 §2, 1986; Ord. 642 §2, 1984; Ord. 475-B §23, 1976)
(Ord. No. 895, § 1, 12-30-2008; Ord. NO. 942, §§ 1, 2, 9-28-2010; Ord. No. 945, §§ 1, 2, 11-23-2010)

13.04.460 Water--Charges for public customers.

The city or Yakima County Fire Protection District No. 5 shall pay to the water department from its current expense fund the following amounts:

A. For all fire hydrants connected to the water mains, one hundred dollars per year;

B. For street sprinkling and flushing, per one hundred to one thousand gallon tank, two dollars;

C. For one thousand to two thousand five hundred gallon tank, four dollars;

D. For all water used in public buildings and parks, an amount figured at regular rates for each service installed. (Ord. 475-B §34, 1976)

13.04.470 Water--Building construction charge.

During the construction of a building or buildings following application for water use, the minimum charge shall be charged to the property owner for periods prior to occupancy. "Occupancy" shall include any use or occupancy of the property or building during any metered month. (Ord. 475-B §21, 1976)

13.04.480 Water--Unoccupied building or unit.

Even though property served may be unoccupied for more than one metered month, a minimum charge shall be owing unless a request from the property owner or consumer for disconnection together with the fee therefor has been received prior to the first month. (Ord. 475-B §20, 1976)

13.04.490 Water--Occupied property not receiving water service.

Any occupied property or building shall pay the minimum charge for water service whether or not connected to the municipal water supply where the service is available. (Ord. 475-B §22, 1976)

13.04.500 Sewer--Connection charge.

A. Commencing with the utility billing period January, 2009, the charge for each tap or connection to the sewer system shall be the sum of five hundred dollars. This charge is for tapping only and property owner shall bear all expense for construction of the sewer service from the main sewer line to the building outlet. This fee may be amended from time to time by resolution of the city council and, upon passage, said resolution shall be on file at the office of the city clerk.

B. All property owners within two hundred feet of public sewer line will be required to make connection for sewage disposal.

C. Where feasible, and where involving a multiple-unit dwelling only, several owners may combine and construct one main connection to reduce cost; however, the regular monthly service fee will be charged for each unit so connected.

D. All house service sewers shall be a minimum of six inches in diameter and constructed in accordance with city sewer specifications. No sewer shall be backfilled until

inspected and approved by the water and sewer superintendent. (Ord. 808 § 1, 1998; Ord. 475-B § 38, 1976)
(Ord. No. 897, § 1, 12-30-2008)

13.04.510 Sewer--Service charge--Single-family dwelling unit.

For the utility billing period commencing on May 2011, there is hereby charged to each single-family dwelling unit serviced with city water service and for each dwelling unit that is connected to the city sewer system a monthly sewer service charge in the amount of thirty-seven dollars and six cents. Senior citizens will be charged a monthly sewer service charge in the amount of thirty-two dollars and six cents. (Ord. 868 § 1, 2005: Ord. 848 § 1, 2002: Ord. 841 § 1, 2001: Ord. 810 § 1, 1998: Ord. 763 § 1, 1994: Ord. 704 § 1, 1990: Ord. 686 § 1, 1988: Ord. 669 § 1, 1986: Ord. 654 § 1, 1986; Ord. 642 § 1, 1984; Ord. No. 939, § 1, 9-28-2010; Ord. No. 957, § 1, 4-26-2011)

13.04.520 Sewer--Service charge--Commercial users.

For the utility billing period commencing on May 2011, and thereafter, the commercial users shall be charged a flat rate for sewer service of thirty-seven dollars and six cents per month, or four dollars and twenty-eight cents per one thousand gallons of water used by said user per month, whichever is higher, vegetation nurseries shall be charged as residential consumer. (Ord. 875 § 1, 2006: Ord. 869 § 1, 2005: Ord. 842 § 1, 2001: Ord. 811 § 1, 1998: Ord. 797 § 1, 1997: Ord. 766 § 1, 1995: Ord. 705 § 1, 1990: Ord. 687 § 1, 1988: Ord. 670 § 1, 1986: Ord. 655 § 1, 1986; Ord. 643 § 1, 1984)
(Ord. No. 940, § 1, 9-28-2010; Ord. No. 941, § 1, 9-28-2010; Ord. No. 958, § 1, 4-26-2011; Ord. No. 959, § 1, 5-26-2011)

13.04.530 Sewer--Service charge--Applicability.

The sewer service charges provided in this article shall be applicable to all premises served regardless of whether or not the sewer is actually used for the benefit or facilities located thereon. (Ord. 475-B §13(F), 1976)

13.04.540 Accounts--Billing.

All accounts for water shall be kept in the name of the property owner who shall be responsible for payment of

all charges set forth in this chapter. At the request of the property owner, the clerk-treasurer may bill the consumer or consumers, but the charge shall ultimately be the responsibility of the property and property owner. (Ord. 475-B §5, 1976)

13.04.550 Delinquency--Notice--Shut-off as method of enforcement.

A. 1. All charges for water and sewer service shall be due and payable to the city clerk/treasurer on or before the fifteenth day of the month succeeding the date the bill was rendered. Water bills shall be filled monthly for water services delivered in the metered month prior to the bill. A late payment charge of ten dollars shall be imposed on all delinquent accounts for each month they are delinquent. The due date shall be close of business at city hall on the fifteenth day of each month (or the next succeeding business day). Unpaid accounts become delinquent thereafter. If payment is not received on or before close of business on the fifteenth day of such month, the late payment shall be charged on the unpaid balance of each delinquent account until the total of such charges and penalty have been paid in full. Payment for water service shall not be accepted unless the payment of the sewer service charge is made at the same time.

2. If any charges remain unpaid by the fifteenth day of the next succeeding month, the clerk/treasurer shall notify the property owner or consumer in the next billing of the delinquency and the intent to disconnect service. Said notice shall inform the customer that he has the right to request a hearing before the city council, to contest the validity of the bill the nonpayment of which has resulted in the pending suspension, by submitting a written request to city hall. The written request must be received by city hall no later than ten calendar days after the date of the delinquency notice. In the event of failure to pay the delinquent payment together with the service charges appearing on the bill and no hearing is requested prior to the due date, the water service shall be disconnected. In the event the customer has requested a hearing, the clerk/treasurer has authority to prorate the bill based upon prior usage, pending the outcome of the hearing before the city council.

B. In the event of disconnection of water service for delinquencies, the property owner or consumer shall be charged ten dollars for the service of disconnecting the water service. The property owner or consumer shall also be charged ten dollars for the service of reconnecting the water service. Service to any property disconnected for delinquencies shall not be reinstated until all delinquencies, disconnection charges and reconnection charges have been paid to the clerk.

C. Delinquent charges, including connection charges, shall bear interest at the rate of eight percent per year from the date of delinquency until paid. Any delinquent water, sewer or connection charges provided for in this chapter shall immediately become a lien upon the premises. Such liens shall be superior to all other liens and encumbrances except general taxes and local and special assessments.
(Ord. 764, 1994; Ord. 629 §1(A), 1984: Ord. 475-B §§13(A), (B), (C), 1976)
(Ord. No. 914, 12-22-2009; Ord. No. 929, 3-9-2010; Ord. No. 930, 3-23-2010)

V. ADDITIONAL PROVISIONS

13.04.560 Extensions of mains.

A. All extensions of water and sewer mains outside the city limits shall be made either by the water and sewer departments at the expense of the owners of the property to be served thereby, or by the owners of said property under the supervision of the water and sewer departments and in accordance with the plans and specifications therefor prepared by the water and sewer departments, in which latter case the property owners shall pay the water and sewer departments in advance an amount equal to seventy-five percent of the estimated cost of such extension to cover the cost of plans, specifications, supervision and overhead expense.

B. All extensions shall be and remain the property of the city after said extensions have been tested and accepted by said departments. Said extensions shall be maintained by the city and operated by the water and sewer departments as part of the distribution system. The water and sewer departments shall exercise complete control over said extensions and the persons, or person, responsible for the construction of the extension shall relinquish all right to

or interest in the ownership of such extension. (Ord. 475-B §40, 1976)

13.04.580 Fire hydrants and flush tanks.

The water department shall install, maintain and keep in repair all city fire hydrants and the water connections to all sewer flush tanks and shall regulate the amount of water to be used by each such flush tank. No person other than an employee of the water department shall change or interfere in any manner with the adjustment of valves or other water regulations attached to any sewer flush tank. (Ord. 475-B §35, 1976)

13.04.590 Interference with system--Notice required.

All persons, contractors, corporations or any city department handling street work, such as grading, regrading, filling, trenching or paving, etc., shall give the water and sewer department three days' notice in writing in case it becomes necessary during the work to remove, displace or change any water or sewer mains, pipes, fittings, gates, or other water or sewer works appurtenances that may interfere

with the prosecution of such work, and the failure to furnish said notice shall make the contractor, corporation or person, or other city department liable to the water and sewer departments in case damages should result from such failure. (Ord. 475-B §41, 1976).

13.04.600 Interference with system--Prohibited when. No person other than an employee of the water department or the fire department, or any employee of the street department who is engaged in sprinkling or washing the public streets, shall open or interfere in any way with any fire hydrant, stand pipe or hose connection connected with the city water system without first obtaining authority to do so from the water department. (Ord. 475-B §36, 1976).

13.04.610 Right of entry for inspection. Employees of the water and sewer departments, properly identified, shall have free access at proper hours of the day to all parts of the buildings to which water and sewerage service may be delivered from the city mains, for the purpose of inspecting the conditions of the pipes and fixtures and the manner in which the water is used. (Ord. 475-B §33, 1976).

13.04.620 Plumbers--Penalty for unsatisfactory work. Plumbers or other persons failing to perform their work according to established rules and regulations or executing it unskillfully, or to the damage of the water and sewer departments, may be debarred temporarily or permanently from making connections or doing any work on fixtures or pipes leading from the city's mains. (Ord. 475-B §30, 1976).

13.04.630 Sale or gift of water prohibited. It is unlawful for any property owner or consumer to sell or give away water furnished by the town. (Ord. 475-B §6, 1976).

13.04.640 Unauthorized water connection prohibited. Any person or business concern making any connection with or any alteration to any pipe allowing water to be withdrawn without first applying for water shall be subject to the penalties of this chapter. (Ord. 475-B §8, 1976).

13.04.650 Violation--Penalty. Persons violating the provisions of this chapter shall be subject to a fine not to exceed five hundred dollars, or confinement in jail not to exceed six months. (Ord. 475-B §45, 1976).

13.04.660 Water/sewer hookups outside city limits--Prohibited. No water or sewer hookups will be allowed for property lying outside the corporate limits of the city of Mabton, on or after the effective date of the ordinance codified in this section January 12th, 1982. (Ord. 575 §1, 1982)

VI. CONSUMER DEPOSITS

13.04.670 Refund. All deposits held by the city shall be refunded after any application thereof toward unpaid charges for water, sewer and/or garbage. No interest shall be paid on any such refunded deposits. Any funds remaining after such refunds which cannot be identified or whose owner cannot be located shall be disposed of in accordance with the laws of the state of Washington dealing the unclaimed funds. (Ord. 649 §2, 1985; Ord. 548, 1980)

VII. PAYMENT PLAN OPTIONS

13.04.680 Eligibility. City utility service for residential customers shall provide for the option of a budget billing or equal payment plan. (Ord. 733 §1, 1993)

13.04.690 Accounts--Billing. A. All accounts shall be kept in the name of the property owner who shall be responsible for payment of all utility charges set forth in this title. At the request of the property owner, the clerk-treasurer may bill the customer or customers, but the charge shall ultimately be the responsibility of the property owner.

B. The property owner and the customer, if applicable, must agree to a payment plan and further agree to maintain the payment plan. The plan will be designed both to pay any past due bills (not to exceed the limitations imposed in Section 13.04.550), as well as to pay for continued utility service. If any delinquencies occur during the life of the budget plan, the residential utility customer or property owner shall not be eligible for the protections under the plan until all delinquencies are paid.

C. Quarterly adjustments are to be calculated into the plan to account for rate changes or changes in average monthly consumptions for the quarter. The outstanding balance of service charges are due upon transfer of ownership or the last billing for a customer or consumer. (Ord. 733 §2, 1993)

13.04.700 Equal payment plan. The clerk-treasurer may compute a twelve-month schedule of payments based upon the consumption for the residential unit for the previous twelve months. Utility service charges for residents of the city in newly constructed housing units shall be based upon an estimate of an average service charge for a similar residential unit to be determined by the clerk-treasurer. (Ord. 733 §3, 1993)

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Chapter 13.05

CROSS-CONNECTION CONTROL

Sections:

13.05.005 Authority.

Pursuant to WAC 246-290-490, or as amended, it is the responsibility of the city of Mabton to protect its drinking water by instituting and enforcing a cross-connection control program. Now, therefore, the city of Mabton stipulates as follows in this chapter. (Ord. 865 §1(part), 2005)

13.05.010 Definitions.

Except where specifically designated herein, all words used in this document shall carry their customary meanings. Words used in the present tense include the future and plural words include the singular. The word "shall" is always mandatory, and the word "may" denotes a use of discretion in making a decision. Any definition not found in this section will take its meaning from Chapter 246-290 WAC, or as amended, or in the most recent edition of the "Manual of Cross-Connection Control" published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California.

"Air gap" means a physical separation between the free-flowing end of a potable water supply pipeline and the overflow rim of an open or nonpressure-receiving vessel. To be an "approved air gap," the separation must be at least twice the diameter of the inlet piping (supply pipe) measured vertically, and never be less than one inch.

"Approved backflow prevention assembly" or "backflow assembly" or "assembly" means an assembly to counteract backpressures or prevent backsiphonage. This assembly must appear on the list of approved assemblies issued by the Washington State Department of Health. The assembly must be purchased and installed as a complete unit including two shut-off valves and test cocks.

"Auxiliary supply" means any water source or system other than the city of Mabton's.

"Backflow" means the flow of water or other liquids, gases or solids from any source back into the distribution system. The flow of water in the opposite direction of its intended flow.

"Backflow assembly tester" means a person holding a valid BAT certificate issued in accordance with WAC 246-290-490 and Chapters 18.27, 18.106 and 70.119 RCW.

"Backpressure" means backflow due to water pressure on the downstream side of the meter which exceeds the operating pressure of the public potable water supply.

"Backsiphonage" means backflow due to a negative or reduced pressure within the public potable water.

"Building inspector" means the building inspector for the city of Mabton.

"City" means the city of Mabton.

"Closed system" means any water system or portion of a water system in which water is closed.

"Contamination" means the entry into or presence in a public water supply system of any substance which may be harmful to health and/or quality of the water.

"Cross-connection" means any physical arrangement where a public water system is connected, directly or indirectly (actual or potential), with any other non-drinkable water system or auxiliary system, wells, sewer, drain conduit, swimming pool, storage reservoir, plumbing fixture, swamp coolers, or any device which may be capable of imparting contamination or pollution to the public water system as a result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or change-over devices, or other temporary or permanent devices through which, or because of which, backflow may occur are considered to be cross-connections.

"Cross-connection specialist" or "CCS" means a person holding a valid CCS certificate issued in accordance with the Washington Administrative Code.

"Degree of hazard" means the low or high hazard classification that shall be attached to all actual or potential cross-connections.

"Director" means the public works director or his/her designee.

"DOH" means the department of health.

"Double check detector assembly" or "DCDA" means an assembly which consists of two independently operating check valves which are spring-loaded or weighted. The assembly comes complete with a shut-off valve on each side of the checks, as well as test cocks to test the checks for tightness. It shall also be provided with a factory bypass arrangement with a meter and a minimum of an approved double check assembly.

"Double check valve backflow prevention assembly" or "double check assembly" or "double check" or "DCVA" or

"DC" means an assembly which consists of two independently operating check valves which are spring-loaded or weighted. The assembly comes complete with a shut-off valve on each side of the checks, as well as test cocks.

"Health hazard" means an actual or potential threat of contamination of a physical, toxic or biological nature that would be a danger to health.

"High hazard" means the classification assigned to an actual or potential cross-connection that potentially could allow a substance that may cause illness or death to backflow into the potable water supply.

"In-premises protection" means a method of protecting the health of consumers served by the customer's plumbing system (i.e., located within the property lines of the customer's premises) by the installation of an approved air gap, backflow prevention assembly or device at the point of hazard.

"Inspector," "surveyor" or "specialist" means a person holding a valid CCS certificate issued in accordance with the Washington Administrative Code, who meets the stipulations in this chapter.

"Local administrative authority" means the local official, board, department or agency authorized to administer and enforce the provisions of the Uniform Plumbing Code and all other plumbing codes recognized by the state of Washington.

"Low hazard" means the classification assigned to an actual or potential cross-connection that could allow a substance that may be objectionable, but not hazardous to one's health, to backflow into the potable water supply.

"Mobile unit" means units connecting to the water system through a hydrant, hose bibb, or other appurtenance of a permanent nature that is part of the city water system or a permanent water service to a premises. Examples can include, but are not limited to, the following: water trucks, pesticide applicator vehicles, chemical mixing units or tanks, waste or septage hauler trucks or units, sewer cleaning equipment, carpet or steam cleaning equipment, rock quarry or asphalt/concrete batch plants, or any other mobile equipment or vessel. Uses that are excluded from this definition are recreational vehicles at assigned sites or parked in accordance with other city ordinances pertaining to recreational vehicles, and homeowner devices that are used by the property owner in accordance with

other provisions of this, or other, city of Mabton ordinances pertaining to provision of water to premises.

"Person" means a natural person (individual), corporation, company, association, partnership, firm, limited liability company, joint venture company or association, and other such entity.

"Potable water supply" means any system of water supply intended or used for human consumption or other domestic use and meets all requirements established by the Safe Drinking Water Act and the DOH regulations.

"Premises" means any piece of property to which water is provided including, but not limited to, all improvements, mobile structures and structures located on it.

"Premises isolation" means a method of protecting a public water system by installation of an approved air gap or approved backflow prevention assembly at the point of service (end of purveyor's service pipe) to separate the customer's plumbing system from the purveyor's distribution system.

"Reduced pressure detector assembly" or "RPDA" means an approved assembly consisting of two approved reduced pressure backflow assemblies, set in parallel, equipped with a meter on the bypass line to detect small amounts of water leakage or use.

"Reduced pressure principle backflow prevention assembly" or "reduced pressure principle assembly" or "RP assembly" means an assembly containing two independently acting approved check valves together with a hydraulically operated, mechanically independent pressure differential relief valve located between the check valves. The assembly shall include properly located test cocks and tightly closing shut-off valves at each end of the assembly.

"SOP" means the most recent edition of the city of Mabton's standard operating procedures.

"Thermal expansion" means the pressure created by the expansion of heated water.

"Used water" means any water supplied by the city to a customer's property after it has passed through the service connection and is no longer under the control of the city.

"WAC" means the most recent edition of the Washington Administrative Code. (Ord. 865 §1(part), 2005)

13.05.020 Purpose.

The purpose of this chapter is to protect the water system of the city of Mabton from contamination or pollution due to any existing or potential cross-connections as defined in WAC 246-290-010, or as amended, and this chapter. (Ord. 865 §1(part), 2005)

13.05.030 Cross-connections.

A. No cross-connections shall be created, installed, used or maintained within the territory served by the city, except in accordance with this chapter.

B. The CCS for the city shall carry out or cause inspections to be carried out to determine if any actual or potential cross-connections exist. If found necessary, an assembly commensurate with the degree of hazard will be required to be installed at the service connection.

C. The owner, occupant or person in control of the property is responsible for all cross-connection control within the premises. (Ord. 865 §1(part), 2005)

13.05.040 Application and responsibilities.

This chapter applies throughout the city and to every premises and property served by the city water system. It applies to any premises, public or private, regardless of date of connection to the city water. Every owner, occupant and/or person in control of any concerned premises is responsible for compliance with the terms and provisions contained herein. (Ord. 865 §1(part), 2005)

13.05.050 Backflow prevention assembly requirements.

A CCS employed by or under contract with the city shall determine the type of backflow assembly to be installed within the area served by the city. All assemblies shall be installed at the service connection unless it is determined by the CCS to install the assembly at an alternate location for premises protection or at the point of use. The cross-connection shall be eliminated or an assembly shall be required to be installed in each of the following circumstances, but the CCS is in no way limited to the following circumstances:

A. The nature and extent of any activity on the premises, or the materials used in connection with any activity on the premises, or materials stored on the premises, could contaminate or pollute the potable water supply;

B. Premises having any one or more cross-connections or potential cross-connections as that term are defined in this chapter and the WAC;

C. When a cross-connection survey report form is required by the city to be filled out and returned and it has not been received;

D. Internal cross-connections are present that are not correctable;

E. Intricate plumbing arrangements exist or plumbing subject to frequent changes are present that make it impractical to ascertain whether or not cross-connections exist;

F. There is a repeated history of cross-connections being established or re-established;

G. There is unduly restricted entry so that inspections for cross-connections cannot be made with sufficient frequency to assure that cross-connections do not exist;

H. Materials, chemicals or any substance or apparatus is being used that if backflow occurred contamination would result;

I. Installation of an approved backflow prevention assembly is deemed to be necessary in the judgment of the CCS to accomplish the purpose of these regulations;

J. Any premises having auxiliary water supply which is not in compliance with WAC 248-54-30 and is not acceptable to the city;

K. In the event of a point-of-use assembly has not been tested or repaired as required by WAC 246-290-490, or as amended, and this chapter;

L. If it is determined that additions or rearrangements have been made to the plumbing system without obtaining proper permits as required by the city code enforcement division;

M. All high health hazard premises which are defined in Table 9 of WAC 246-290-490, or as amended, are required to have premises isolation by installing a reduced pressure principle assembly in accordance with this chapter;

N. When a garden hose attachment is connected to the premises plumbing, including, but not limited to, fertilizer applicators, pesticide applicators and radiator flush kits;

O. Where reclaimed or reused water systems are installed;

P. Premises on which any substance is handled under pressure so as to permit entry into the public water system. (Ord. 865 §1(part), 2005)

13.05.060 Irrigation.

All irrigation systems shall be protected in accordance with the plumbing code regulations. In the event any system is equipped with an injector system, or has submerged heads, a reduced pressure principle assembly will be required. (Ord. 865 §1(part), 2005)

13.05.070 Fire sprinkler systems.

An approved double check detector backflow prevention assembly shall be the minimum protection on all new fire sprinkler systems using piping material that is not approved for potable water use, and/or that does not provide for periodic flow-through. A reduced pressure principle detector backflow prevention assembly must be installed, if any solution other than the potable water can be introduced into the sprinkler system. Retrofitting on fire sprinkler systems will be required in each of the following circumstances:

A. Where improper maintenance has occurred;

B. On all high hazard locations;

C. Where a CCS deems necessary;

D. Wherever required by the WAC.

(Ord. 865 §1(part), 2005)

13.05.080 Temporary meters and hydrant valves.

Backflow protection will be required on temporary meters and all hydrant valves. The type of assembly will be commensurate with the degree of hazard and will be determined on a case-by-case basis by the city's CCS. (Ord. 865 §1(part), 2005)

13.05.090 Mobile units.

Any mobile unit or apparatus as defined in Section 13.05.010 of this chapter which uses the city's water from any premises or piping within the distribution system shall first obtain a permit from the city. The mobile unit will be inspected to assure appropriate backflow protection is installed in accordance with this chapter. (Ord. 865 §1(part), 2005)

13.05.100 Right-of-way encroachment.

A. No person shall install or maintain a backflow prevention assembly upon or within any city right-of-way except as provided in this section.

B. The city reserves the right to have an assembly installed in the right-of-way.

C. A backflow prevention assembly required by the city may be installed upon or within any city right-of-way only if the owner proves to the city that there is no other feasible location for installing the assembly, and installing it in the right-of-way will not interfere with traffic or utilities. The city retains the right to approve the location, height, depth, enclosure, and other requisites of the assembly prior to its installation.

D. All permits required by the city code to perform work in the right-of-way.

E. A property owner shall, at the request of the city and at the owner's expense, relocate a backflow prevention assembly which encroaches upon any city right-of-way, when such relocation is necessary for street or utility construction or repairs for purposes of public safety. (Ord. 865 §1(part), 2005)

13.05.110 Plumbing code.

As a condition of water service, customers shall install, maintain, and operate their piping and plumbing systems in accordance with all Washington State plumbing codes. (Ord. 865 §1(part), 2005)

13.05.120 Access to commercial and industrial premises.

Authorized employees of the city, with proper identification, shall have access during the hours of eight a.m. to five p.m. to all parts of commercial and industrial premises and within the buildings to which water is supplied. If access to the premises or to the interior of a structure during these hours are denied, a reduced pressure principle assembly shall be required to be installed at the service connection to that premises. (Ord. 865 §1(part), 2005)

13.05.130 Access to residential property.

Permission to perform a cross-connection inspection at a residential property must be requested by the city at least seventy-two hours prior to the time of inspection.

If permission is denied, the property owner shall contact a CCS to perform the inspection and provide a report to the city. The report must reach the city within twenty-one days of the request for permission from the city. Failure to comply may result in the city installing an RP assembly at the meter in compliance with this chapter. (Ord. 865 §1(part), 2005)

13.05.140 Testing.

Backflow prevention assemblies shall be tested and repaired in accordance with the requirements set out in the WAC, this chapter and the most recent edition of the city's SOP manual. (Ord. 865 §1(part), 2005)

13.05.150 Certification of backflow prevention assembly.

All backflow assembly testers operating within the city shall be certified in accordance with all applicable regulations and shall comply with all stipulations in this chapter and the most recent edition of the city's SOP manual. (Ord. 865 §1(part), 2005)

13.05.160 Maintenance of backflow prevention assembly.

Backflow prevention assemblies shall be maintained in accordance with the requirements set out in the WAC, or as amended, and the most recent edition of the city's SOP manual. (Ord. 865 §1(part), 2005)

13.05.170 Installation requirements and specifications.

Backflow prevention assemblies shall be installed in accordance with the requirements in the WAC and the most recent edition of the city's SOP manual. In the event the CCS allows a premises isolation assembly to be installed at an alternate location, there shall be no connections between the meter and the premises isolation assembly. (Ord. 865 §1(part), 2005)

13.05.180 Thermal expansion.

If a closed system has been created by the installation of a backflow prevention assembly, it is the responsibility of the property owner to eliminate the possibility of thermal expansion. (Ord. 865 §1(part), 2005)

13.05.190 Pressure.

Any reduction in water pressure caused by the installation of a backflow assembly is not the responsibility of the city. The city will give reasonable assistance to the owner regarding information on adequate sizing of assemblies and proper plumbing practices to provide for required pressure and flows for fire protection. (Ord. 865 §1(part), 2005)

13.05.200 Parallel installation.

Premises where noninterruption of water supply is critical shall have two assemblies of the same type installed in parallel. They shall be sized in such a manner that either assembly will provide the minimum water requirements while the two together will provide the maximum water requirements. (Ord. 865 §1(part), 2005)

13.05.210 New construction.

A. On all new nonresidential construction, an approved backflow assembly shall be installed at the service connection. The type of the assembly will be commensurate with the degree of hazard as determined by a CCS.

B. When a building is constructed on commercial premises, and the end use of the building is not determined or could change, a reduced pressure principle backflow prevention assembly shall be installed at the service connection to provide protection of the public water supply in the event of the most hazardous use of the building. (Ord. 865 §1(part), 2005)

13.05.220 Residential service connections.

Any residential property which has been determined to have an actual or potential cross-connection and/or has violated the plumbing code or this chapter in any way shall be required to install an approved backflow prevention assembly in accordance with this chapter. (Ord. 865 §1(part), 2005)

13.05.230 Rental properties.

The property owner is responsible for the installation, testing and repair of all backflow assemblies on their property. When the tenants change, or, if the plumbing is altered in any way, it is the responsibility

of the owner to notify the city. (Ord. 865 §1(part), 2005)

13.05.240 Retrofitting.

Retrofitting shall be required on all service connections where an actual or potential cross-connection exists, and wherever else the city deems retrofitting necessary. (Ord. 865 §1(part), 2005)

13.05.250 Costs of compliance.

All costs associated with the purchase, installation, inspections, testing, replacement, maintenance, parts, and repairs of the backflow assembly are the financial responsibility of the property owner. All costs associated with any disconnect fees associated with the enforcement of this chapter are the sole responsibility of the water user and/or property owner. On residential irrigation systems, the city may purchase, install, test, and maintain the backflow assemblies. The cost for these services will be passed on to the end user and/or property owner on their water bill and may be amortized over a period of time upon request. (Ord. 865 §1(part), 2005)

13.05.260 Recovery of costs.

Any water customer violating any of the provisions of this chapter and who causes damage to or impairs the city's water system, including, but not limited to, allowing contamination, pollution, any other solution or used water to enter the city's water system, shall be liable to the city for any expense, loss or damage caused by such violation. The city shall collect from the violator for the cost incurred by the city for any cleaning, purifying, repair or replacement work or any other expenses caused by the violation. Refusal to pay the assessed costs shall constitute a violation of this chapter and shall result in the termination of service. (Ord. 865 §1(part), 2005)

13.05.270 Emergency suspension of service.

The director or his/her designee may, without prior notice, suspend water service to any premises when such suspension is necessary to stop the eminent threat of any actual or potential cross-connection as defined in this chapter and the most recent edition of the city's SOP manual. (Ord. 865 §1(part), 2005)

13.05.280 Nonemergency suspension of service.

The director or his/her designee may, with twenty-four-hour prior notice, suspend water service to any premises where the conditions as defined in this chapter and the most recent edition of the city's SOP manual have been violated. (Ord. 865 §1(part), 2005)

13.05.290 Penalties.

Any person, property owner, firm, corporation or business entity violating (a) this chapter, or (b) any regulation, rule or permit of the city issued pursuant to this chapter, shall be liable to the city for civil penalty. The amount of such civil penalty shall be two thousand dollars per violation. Each continuing day's violation under this chapter shall constitute a separate offense. The penal provisions imposed under this chapter shall not preclude the city from filing suit to enjoin the violation. The city of Mabton retains all legal rights and remedies available to it pursuant to local, state and federal law. (Ord. 865 §1(part), 2005)

13.05.300 Falsifying information.

Any person who knowingly makes any false statement, representation, record, report or other document filed or required to be maintained pursuant to this chapter, or who falsifies, tampers with, or knowingly renders inaccurate any backflow assembly, device or method required under this chapter shall, in addition to civil and/or criminal penalties provided by state law, be guilty of a misdemeanor subject to the penalty clause of the Mabton Municipal Code. (Ord. 865 §1(part), 2005)

Title 14

(RESERVED)

APPENDIX Q

WATER SERVICE APPLICATION GUIDELINES

CITY OF MABTON
WATER SERVICE APPLICATION GUIDELINES

The applicant applying to the City of Mabton for a new water service connection shall be the owner of the property or authorized agent of the owner. Determination of ability to serve said property will be made by the staff of the City of Mabton for an individual connection to the water system.

An application to the City of Mabton requesting service for four (4) or more shall be reviewed by staff to determine if an environmental review will be required or if review by the engineering firm shall be sufficient to determine ability to serve.

ESTABLISHMENT OF NEW WATER OR GARBAGE SERVICE
OR CHANGE TO EXISTING SERVICE

PROPERTY ADDRESS_____ACCOUNT #_____

PROPERTY OWNER_____

RENTER'S NAME_____
(IF PROPERTY IS BEING RENTED)

AS THE PROPERTY OWNER, I EITHER RESIDE AT THIS ADDRESS OR I AM AUTHORIZING THE ABOVE NAMED INDIVIDUAL TO ESTABLISH A NEW WATER AND /OR GARBAGE ACCOUNT AT THIS ADDRESS. THE PERSON NAMED ON THIS ACCOUNT WILL HAVE (IN ADDITION TO THE OWNER) THE ABILITY TO REQUEST SERVICES BE TURNED/ON OR TURNED/OFF.

I UNDERSTAND THAT, AS THE PROPERTY OWNER, I AM ULTIMATELY RESPONSIBLE FOR THE PAYMENT OF ANY SERVICES PROVIDED TO THIS ADDRESS.

MAILING INFORMATION:

OWNER	**RENTER**
_____ MAILING ADDRESS	_____ MAILING ADDRESS
_____ CITY/STATE/ZIP CODE	_____ CITY/STATE/ZIP CODE
_____ HOME PHONE	_____ HOME PHONE
_____ WORK PHONE	_____ WORK PHONE

MONTHLY INVOICE SHOULD BE SENT TO:_____

DELINQUENT NOTICES ARE SENT TO BOTH OWNER AND RENTER.

FOR GARBAGE SERVICE:

RESIDENTIAL:_____CAN/S COMMERCIAL:_____CAN/BIN

SENIOR CITIZEN: YES/NO 62 YEARS OR OLDER

SIGNATURE OF PROPERTY OWNER:_____DATE:_____

SIGNATURE OF RENTER:_____DATE:_____

A NEW FORM MUST BE COMPLETED EACH TIME A NEW RENTER MOVES IN. WATER WILL NOT BE TURNED BACK ON UNLESS BILL IS PAID IN FULL.

APPENDIX R

WATER RATES

PATES

P. O. Box 655
Mabton, Washington 98935
Phone: 509-894-4096
Fax: 509-894-4813

FAX COVER
City of Mabton

To: Jim
From: Yolanda
Fax:
Date: 6/19/12
Phone:
Pages: 8

Re:
CC:

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

COPY

ORDINANCE NO. 988

AN ORDINANCE OF THE CITY OF MABTON, WASHINGTON, AMENDING SECTION I OF ORDINANCE NUMBER 970 REGARDING SEWER CHARGES FOR VEGETATION NURSERIES

WHEREAS, ORDINANCE NUMBER 970 WAS PASSED BY THE CITY COUNCIL ON NOVEMBER 2011 AMENDING SEWER RATES, AND

WHEREAS, SAID ORDINANCE INADVERTENTLY ELIMINATED A PROVISION WHEREBY VEGETATION NURSERIES WERE CHARGED AS RESIDENTIAL, AND

WHEREAS, WHILE SUCH NURSERIES USE A LARGE VOLUME OF WATER, SAID WATER DOES NOT GO INTO SEWER SYSTEM, AND IT WAS INTENT OF THE COUNCIL TO EXEMPT THEM FROM THE COMMERICIAL RATES ON SEWER USAGE,

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MABTON, WASHINGTON, AS FOLLOWS;

ORDINANCE NUMBER 970, SECTION I WHICH READS AS FOLLOWS:

SECTION I. FOR THE UTILITY BILLING PERIOD COMMENCING ON NOVEMBER 2011, AND THEREAFTER, THE COMMERCIAL USERS SHALL BE CHARGED A FLAT RATE FOR SEWER SERVICE OF $43.06 PER MONTH, OR $4.28 PER 1,000 GALLONS OF WATER USED BY SAID USER PER MONTH, WHICHEVER IS HIGHER, VEGETATION NURSERIES SHALL BE CHARGED AS RESIDENTIAL CONSUMERS.

BE AND IS HEREBY AMENDED TO READ AS FOLLOWS:

SECTION I. FOR THE UTILITY BILLING PERIOD COMMENCING ON MAY 2012, AND THEREAFTER, THE COMMERICIAL USERS SHALL BE CHARGED A FLAT RATE FOR SEWER SERVICE OF $43.06 PER MONTH, OR $4.28 PER 1,000 GALLONS OF WATER USED BY SAID USER PER MONTH, WHICHEVER IS HIGHER, VEGETATION NURSERIES SHALL BE CHARGED AS RESIDENTIAL CONSUMER.

SECTION II. THIS ORDINANCE SHALL TAKE EFFECT AND BE IN FORCED FIVE (5) DAYS FROM AND AFTER ITS PASSAGE, APPROVAL, AND PUBLICATION, AS PROVIDED BY LAW.

PASSED BY THE **CITY COUNCIL** OF THE **CITY OF MABTON, WASHINGTON** AND **APPROVED** BY THE **MAYOR** THIS **22 ND** DAY OF **MAY 2012.**

MAYOR:

ANGEL REYNA

APPROVED AS TO FORM:

PHIL LAMB, CITY ATTORNEY

ATTEST:

RET STEWART, CLERK TREASURER

COPY

ORDINANCE NO. 987

AN ORDINANCE OF THE CITY OF MANTON, WASHINGTON, AMENDING SECTION 1 OF ORDINANCE NUMBER 969 FIXING NEW SEWER RATES FOR COMMERICAL CONSUMERS FOR THE CITY OF MABTON

WHEREAS, The City Council of the City of Mabton reviewed commercial sewer rates for the City of Mabton during the budget process for year 2012; and

WHEREAS, It is determined that rates must be increased to maintain operations,

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Mabton, Washington, as follows;

Ordinance Number 969, Section 1 which reads as follows:

Section I. For the utility billing period commencing November 2011 and thereafter, the commercial users shall be charged a flat rate for sewer service of $40.06 per month, or $4.28 per 1,000 gallons of water used by said user per month, whichever is higher.

BE AND IS HEREBY AMENDED TO READ AS FOLLOWS:

Section I. For the utility billing period commencing May 2012, and thereafter, the commercial users shall be charged a flat rate for sewer service of $43.06 per month, or $4.28 per 1,000 gallons of water used by said user per month, whichever is higher.

Section II. This ordinance shall take effect and be in force five (5) days from and after its passage, approval, and publication, as provided by law.

PASSED by the **CITY COUNCIL** of the **CITY OF MABTON, WASHINGTON** and **APPROVED** by the **MAYOR** this 22th day of **May 2012.**

MAYOR:

ANGEL REYNA

APPROVED AS TO FORM:

PHIL LAMB, CITY ATTORNEY

ATTEST:

RET STEWART, CLERK-TREASURER

COPY

ORDINANCE NO. 986

AN ORDINANCE OF THE CITY OF MABTON, WASHINGTON, AMENDING SECTION I OF ORDINANCE NUMBER 968 ESTABLISHING NEW SEWER RATES FOR RESIDENTIAL CONSUMERS FOR THE CITY OF MABTON

WHEREAS, THE CITY COUNCIL OF THE CITY OF MABTON REVIEWED RESIDENTIAL SEWER RATES FOR THE CITY OF MABTON DURING THE BUDGET PROCESS FOR YEAR 2012; AND

WHEREAS, IT IS DETERMINED THAT RATES WOULD BE RAISED THREE DOLLARS;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MABTON, WASHINGTON, AS FOLLOWS;

ORDINANCE NUMBER 968, SECTION I WHICH READS AS FOLLOWS:

SECTION I. FOR THE UTILITY BILLING PERIOD COMMENCING ON NOVEMBER 2011, THERE IS HEREBY CHARGED TO EACH SINGLE-FAMILY DWELLING UNIT SERVICED WITH CITY WATER SERVICE AND FOR EACH DWELLING UNITY THAT IS CONNECTED TO THE CITY SEWER SYSTEM SERVICE CHARGE IN THE AMOUNT OF$ 40.06. SENIOR CITIZENS WILL BE CHARGED A MONTHLY SEWER CHARGE IN THE AMOUNT OF $35.06

BE AND IS HEREBY AMENDED TO READ AS FOLLOWS:

SECTION I. FOR THE UTILITY BILLING PERIOD COMMENCING ON MAY 2012, THERE IS HEREBY CHARGED TO EACH SINGLE --FAMILY DWELLING UNIT SERVICED WITH CITY WATER SERVICE AND FOR EACH DWELLING UNIT THAT IS CONNECTED TO THE CITY SEWER SYSTEM WILL BE CHARGED A MONTHLY SEWER SERVICE CHARGE IN THE AMOUNT OF $43.06. SENIOR CITIZENS WILL BE CHARGED A MONTHLY SEWER CHARGE IN THE AMOUNT OF $38.06.

SECTION II. THIS ORDINANCE SHALL TAKE EFFECT AND BE IN FORCED FIVE(5) DAYS FROM AND AFTER ITS PASSAGE, APPROVAL, AND PUBLICATION, AS PROVIDED BY LAW.

PASSED BY THE **CITY COUNCIL** OF THE **CITY OF MABTON, WASHINGTON** AND **APPROVED** BY THE **MAYOR** THIS **22 ND** DAY **MAY 2012**.

MAYOR:

ANGEL REYNA

APPROVED AS TO FORM:

PHIL LAMB, CITY ATTORNEY

ATTEST:

RET STEWART, CLERK TREASURER

ORDINANCE NO. 977

AN ORDINANCE OF THE CITY OF MABTON, WASHINGTON, AMENDING SECTION II A.2 OF ORDINANCE NUMBER 945 INCREASING THE WATER RATES BY $3 IN THE CITY OF MABTON EFFECTIVE JANUARY 31, 2012.

WHEREAS, the City Council has been reviewing water rates for the City of Mabton during the budget process for year 2012; and

WHEREAS, the City Council held a public hearing on January 24, 2012 to hear comments on the proposed rate increase, and

WHEREAS, after listening to all comments, it was determined that rates will be increased effective January 31, 2012

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Mabton, Washington as follows:

Section I. Ordinance Number 945, Section II A.2 that reads as follows:

Meter Size	Consumption	Minimum	Overage per 134 c.f.
¾" or smaller	First 536 c.f.	$23.35/$15.35 Senior Rate	
	Next 402 c.f.		$1.24
	Over 938 c.f.		$1.28
1"	First 536 c.f.	$24.59/$16.59 Senior Rate	
	Next 402 c.f.		$1.24
	Over 938 c.f.		$1.28
1 ¼" to 1 1/2"	First 536 c.f.	$31.11/$23.11 Senior Rate	
	Next 402 c.f.		$1.24
	Over 938 c.f.		$1.28
2"	First 938 c.f.	$33.21/$25.21 Senior Rate	
	Next 4,020 c.f.		$ .98
	Over 4,958 c.f.		$1.08
3"	First 938 c.f.	$56.29/$48.29 Senior Rate	
	Next 4,020 c.f.		$ .98
	Over 4,958 c.f.		$1.08
4"	First 938 c.f.	$96.26/$88.26 Senior Rate	
	Next 4,020 c.f.		$ .98
	Over 4,958 c.f.		$1.08
6"	First 938 c.f.	$189.51/$181.51 Senior Rate	
	Next 4,020 c.f.		$ .98
	Over 4,958 c.f.		$1.08

BE AND IS HEREBY AMENDED TO READ AS FOLLOWS:

Section II. **A.2:** Water rates within the corporate city limits of Mabton shall be as follows:

Meter Size	Consumption	Minimum	Overage per 134 c.f.
¾" or smaller	First 536 c.f.	$26.35/$18.35 Senior Rate	
	Next 402 c.f.		$1.24
	Over 938 c.f.		$1.28
1"	First 536 c.f.	$27.59/$19.59 Senior Rate	
	Next 402 c.f.		$1.24
	Over 938 c.f.		$1.28
1 ¼" to 1 1/2"	First 536 c.f.	$34.11/$26.11 Senior Rate	
	Next 402 c.f.		$1.24
	Over 938 c.f.		$1.28
2"	First 938 c.f.	$36.21/$28.21 Senior Rate	
	Next 4,020 c.f.		$ .98
	Over 4,958 c.f.		$1.08
3"	First 938 c.f.	$59.29/$51.29 Senior Rate	
	Next 4,020 c.f.		$ .98
	Over 4,958 c.f.		$1.08
4"	First 938 c.f.	$99.26/$91.26 Senior Rate	
	Next 4,020 c.f.		$ .98
	Over 4,958 c.f.		$1.08
6"	First 938 c.f.	$192.51/$184.51 Senior Rate	
	Next 4,020 c.f.		$ .98
	Over 4,958 c.f.		$1.08

Section II. This Ordinance shall take effect and be in force five (5) days from and after its passage, approval, and publication, as provided by law.

PASSED by the **CITY COUNCIL** of the **CITY OF MABTON, WASHINGTON** and **APPROVED** by the **MAYOR** this 24th day of January, 2012

MAYOR:

ANGEL REYNA

APPROVED AS TO FORM:

PHIL LAMB, CITY ATTORNEY

ATTEST:

RET STEWART, CLERK-TREASURER

APPENDIX S

WATER USE EFFICIENCY REPORT

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

Date Submitted: 6/27/2012

Water Use Efficiency
Annual Performance Report - 2011

WS Name: MABTON, CITY OF Water System ID# : 49650 WS County: YAKIMA

Report submitted by: *christopher morris*

Meter Installation Information:

Estimate the percentage of metered connections: *More Than 75%*

If not fully metered - Current status of meter installation:

Need to get 2 city parks metered and one source meter is currently being installed

Production, Authorized Consumption, and Distribution System Leakage Information:

12-Month WUE Reporting Period: *01/01/2011* To *12/31/2011*

Incomplete or missing data for the year? *Yes*

If yes, explain:

with the changes of employees most of the information is not available at this time. However, we will continue to gather information for next years report.

Distribution System Leakage Summary:

Total Water Produced and Purchased (TP) – Annual Volume	gallons
Authorized Consumption (AC) – Annual Volume	gallons
Distribution System Leakage – Annual Volume TP – AC	gallons
Distribution System Leakage – Percent DSL = [(TP – AC) / TP] x 100	*0.0* %
3-year annual average	%

Goal-Setting Information:

Date of Most Recent Public Forum: *01/01/2012* Has goal been changed since last performance report? *No*

Note: Customer goal must be re-established every 6 years through a public process

WUE Goals:

Customer Goal (Demand Side):

Currently our only goal is to get a full years information so that next years report can be completed

Describe Progress in Reaching Goals:

Customer (Demand Side) Goal Progress:

Information for WUE was included in this year's annual water quality report.

Additional Information Regarding Supply and Demand Side WUE Efforts

Include any other information that describes how you and your customers use water efficiently:

Possibly set up a new irrigation rule where customers water every other day. Example, if the homeowner has an even numbered house, they only water on the even numbered days, and the same for odd numbered homes. The city will also start a new water meter replacement program to better account for water usage. Check for leaks, in a timely matter, for those customers who show high water usage that month. Meter hydrant usage and flushing

VALLEY Environmental Laboratory

Washington State Certified Lab #153 - DOE Accredited Lab C345

Lead

Lab/Sample No: Below	Date Collected: 02/28/12	
Date Received: 03/02/12	Date Reported: 03/14/12	Supervisor: BKO
	Sampled By: Jim Bricel	
Sample Location: Paint		Invoice#: 21411

Send Report To:	Sample Information	Matrix: Solids
Jim Bricel PO Box 2069 Yakima, WA 98907		

Lead

VEL Sample Number:	15330204	15330205	15330206	15330207				
Sample ID/Location:	East 1 Int.	Middle #2 Int	West #3Int.	Outside Mix				
Analyte	Units	Results	Results	Results	Results	MRL	Method	Date Analyzed	Analyst
Lead	%	1.04	1.36	<0.1	2.68	0.01	SM 3113B	03/08/12	BKO

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (always >MDL).

Trigger: DOH Drinking Water response level.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL.

Approved By:

30204-pb

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

Date Submitted: 12/21/2011

Water Use Efficiency
Annual Performance Report - 2010

WS Name: MABTON, CITY OF Water System ID# : 49650 WS County: YAKIMA

Report submitted by: *Angel Reyna*

Meter Installation Information:

Estimate the percentage of metered connections: *100%*

If not fully metered - Current status of meter installation:

N/A

Production, Authorized Consumption, and Distribution System Leakage Information:

12-Month WUE Reporting Period: *01/01/2010* To *12/31/2010*

Incomplete or missing data for the year? *Yes*

If yes, explain:

With the changes of employees most of the information is not available at this time; however, we will continue to gather information and amend the report as needed. We will also attempt to gather data from 2008 and 2009 and report that information as well.

Distribution System Leakage Summary:

Total Water Produced and Purchased (TP) – Annual Volume	gallons
Authorized Consumption (AC) – Annual Volume	gallons
Distribution System Leakage – Annual Volume TP – AC	gallons
Distribution System Leakage – Percent DSL = [(TP – AC) / TP] x 100	*0.0* %
3-year annual average	%

Goal-Setting Information:

Date of Most Recent Public Forum: _____ Has goal been changed since last performance report? *No*

Note: Customer goal must be re-established every 6 years through a public process

WUE Goals:

Customer Goal (Demand Side):

Information is not available at this time; however, goals will be established in 2012.

Describe Progress in Reaching Goals:

Customer (Demand Side) Goal Progress:

Currently we do not have any goals but are working towards comliance in 2012.

Additional Information Regarding Supply and Demand Side WUE Efforts

Include any other information that describes how you and your customers use water efficiently:

For 2012 we will implement a goal to reduce water usage by at least 5%. The following two measures will be implemented in order to achieve the 5% water reduction; 1. A new irrigation ordinance where customers can only water every other day; for example if the homeowner has an even numbered home they can only water on an even numbered day and the same for the odd numbered homes. 2. The city will start a new water metere replacement program in order to better account for water usage.

Do not mail, fax, or email this report to DOH

APPENDIX T

CONSUMER CONFIDENCE REPORT

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

Consumer Confidence Report Certification Form

For calendar year 2010 Consumer Confidence Reports are due before July 1, 2011

You need to complete the following:

1. Mail or deliver copies of your 2010 Consumer Confidence Report (CCR) to your water system customers **before July 1, 2011**. Keep a copy for your records.

2. Submit a copy of your CCR to the regional office for your county (address on back) **before July 1, 2011.**

3. Complete and submit this certification form to the regional office for your county **by October 1, 2011.**

Note: You can send the copy of your 2010 CCR and this certification form to the regional office at the same time. We are better able to identify and properly credit your water system when both documents are received together.

Certification for:

Water System Name CITY OF MABTON

Water System ID Number 49650R

Water System County YAKIMA

In compliance with the CCR requirements (WAC 246-290-72001 through 246-290-72012), I confirm that this CCR has been distributed to customers who use this water system, (and appropriate notice of availability has been given). I confirm that all information contained in this report is correct. I confirm that the CCR contains compliance monitoring data previously submitted to the Washington State Department of Health, Office of Drinking Water.

Certified by:

Signature Francisco Tijerina

Printed Name Francisco Tijerina

Phone 509-894-4096

Date 6/30/2011

Department of Health Office of Drinking Water
Regional Office Addresses

For water systems located in the following counties: **Adams, Asotin, Benton, Chelan, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Kittitas, Klickitat, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman, and Yakima**, send to:

Attn: Consumer Confidence Report
Washington State Department of Health
Office of Drinking Water
Eastern Regional Office
16201 E Indiana Ave Ste 1500
Spokane Valley WA 99216

Phone: (509) 329-2100
Fax: (509) 329-2104

For water systems located in the following counties: **Island, King, Pierce, San Juan, Skagit, Snohomish, and Whatcom**, send to:

Attn: Consumer Confidence Report
Washington State Department of Health
Office of Drinking Water
Northwest Regional Office
20435 - 72nd Ave S Ste 200
Kent WA 98032

Phone: (253) 395-6750
Fax: (253) 395-6760

For water systems located in the following counties: **Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Kitsap, Lewis, Mason, Pacific, Skamania, Thurston, and Wahkiakum**, send to:

Attn: Consumer Confidence Report
Washington State Department of Health
Office of Drinking Water
Southwest Regional Office
PO Box 47823
Olympia WA 98504-7823

Phone: (360) 236-3030
Fax: (360) 664-8058

If you need this publication in an alternate format, call (800) 525-0127. For TTY/TDD, call (800) 833-6388.

2010 CITY OF MABTON ANNUAL WATER QUALITY REPORT

Spanish (Espanol)

Este informe contiene informacion muy importante sobre la calidad de su agua potable. Por favor lea este informe o comuniquese con alguien que pueda traducir la informacion.

Is my water safe? YES

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions? NO

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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Your water comes from two municipal wells sunk approximately 700 to 1100 feet into an under ground aquifier.Both wells are on the south side of town:One at the govenors park corner of 6th and south street.Second is located at the corner of South Street and Boundary Road.The water is treated with chlorine prior to releasing into the main distribution system.

Source water assessment and its availability

Customers may obtain copies at city hall during business hours-8am-4:30pm Monday-Friday

Why are there contaminants in my drinking water?

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 (EPA) Safe Drinking Water Hotline (800-426-4791).

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: microbial contaminants, such as viruses and bacteria, that 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; and 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, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

Citizens may get involved by attending City Council Meetings,which are held 2nd and 4th Tuesdays of each month.

Description of Water Treatment Process

Your water is treated by disinfection. Disinfection involves the addition of chlorine or other disinfectant to kill dangerous bacteria and microorganisims that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference – try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few

minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.

- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Cross Connection Control Survey

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. We are responsible for enforcing cross-connection control regulations and insuring that no contaminants can, under any flow conditions, enter the distribution system. If you have any of the devices listed below please contact us so that we can discuss the issue, and if needed, survey your connection and assist you in isolating it if that is necessary.

- Boiler/ Radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property
- Decorative pond
- Watering trough

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Monitoring and reporting of compliance data violations

None

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. CITY OF MABTON WATER SYSTEM ID # 49650R is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Unit Descriptions

Term	Definition
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions

Term	Definition
MCLG	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	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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

For more information please contact:

Contact Name: FRANK TIJERINA
Address:
P.O. BOX 655
MABTON, WA 98935
Phone: (509)894-4096

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

CONSUMER CONFIDENCE REPORT CERTIFICATION FORM

For Calendar Year 2008 Reports due before July 1, 2009

You need to complete the following:

1. Mail or deliver copies of your 2008 CCR to your water system users **before July 1, 2009**. File a copy for your records.

2. Submit a copy of your CCR to the regional office for your county (addresses on back) **before July 1, 2009.**

3. Submit this completed certification form to the regional office **by October 1, 2009.**

Note: You can send both the copy of your 2008 CCR and this certification form to the regional office at the same time. We are better able to identify and properly credit your system when both documents are received together. However, the certification form must be received no later than **October 1, 2009.**

CERTIFICATION FOR:

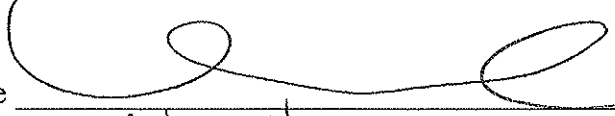
Water System Name City of Mabton

Water System ID Number 49650R

Water System County YAKIMA

In compliance with the state Consumer Confidence Reporting regulations, I confirm that this CCR has been distributed to customers who use this water system, (and appropriate notice of availability has been given). I confirm that all information contained in this report is correct. I confirm that the CCR contains compliance monitoring data previously submitted to the Washington State Department of Health, Office of Drinking Water.

CERTIFIED BY:

Signature 

Printed Name Velva Herrera

Phone 509-894-4096

Date 10-4-09

2009 CITY OF MABTON
ANNUAL WATER QUALITY REPORT

MABTON MEETS THE STANDARDS FOR SAFE DRINKING WATER IN YEAR 2009

The City of Mabton's water distribution system Reported **no violations** in meeting the standards for safe, clean water during 2009. It is a requirement that the water is teased monthly for contaminants and the city was in compliance all twelve months. In addition to the monthly testing, the Department Of Health requires that the water is tested for more Than 80 possible contaminants. These tests were last Performed in 1998 and 6 contaminants were detected And none exceeded acceptable levels as defined by the Environmental protection Agency (EPA) and Washington State. This test will be performed this year and any Violations will be posted in the Daily Sun newspaper.

SAFE WATER

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 indicated that water poses a health risk. To Ensure that tap water is safe to drink, the EPA"s regulations. The Food and Drug Administration regulations establish Limits for contaminants in bottled water, which must Provide the same protection for Public Health. For more Information about contaminants and potential health effects Call the Environmental Protection Agency's Safe Drinking Water Hotline. (800-426-4791).

Este informe contiene informacion muy importante.
Traduscalo o hable con alquien que to entienda bien.

WATER SOURS

the sources for drinking water included 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 radioactive material, and it picks up substances that result from animal and/or human activity.

WATER ORIGINS

Your water comes from two municipal wells sunk approximately 700 to 1100 feet into an under ground aquifer. Both wells are on the south side of town: one at the governors Park corner of 6th and South Street. Second is located at the corner of South Street and Boundary Road. The water is treated with chlorine prior to Releasing into the main distribution system.

INFORMATION

Citizens can obtain additional in Formation by attending City Council meetings, which are held 2nd & 4th Tuesdays of each month.

2009 CITY OF MABTON
ANNUAL WATER QUALITY REPORT

The following table lists all the drinking water contaminants that were detected during the 2006 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to ear. These tests will be performed again this year.

RADIOACTIVE CONTAMINANTS	MCL	MCLG	DETECTED	SOURCE OF CONTAMINANT
Beta/photon emitters (pCi/L)	50	0	9	Decay of natural & man made Deposits
Alpha emitters (pCi/L)	15	0	8	Erosion of natural deposits
INORGANIC CONTAMINANTS				
Fluoride	4	4	0.39	Erosion of natural deposits/water Additive to promote strong teeth
Lead (ppb)	**n/a**	0	< 0.0005	Corrosion of household Plumbing
Nitrate (ppm)	10	10	0	Runoff from fertilizer use Erosion of natural deposits

TERMS & ABBREVIATIONS USED ABOVE:

Nd = Not Detected AL – Action Level ppm = part per million
Ppb = parts per billion pCi/L = picocuries per liter (measure of radiation)
MCLG = Maximum Contaminant Level Goal: the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
MCL = Maximun Contaminant Level: the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLs as feasible using the best available treatment technology.

SOME INDIVIDUALS 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 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** and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791)

The state and EPA require us to test our water on a regular basis to ensure its safety. The results of these tests are forward to the State. The test results are available at City Hall for any residents who would like to review them.

L

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

received 7-1-08

CONSUMER CONFIDENCE REPORT CERTIFICATION FORM

For Calendar Year 2007 Reports due before July 1, 2008

You need to complete the following:

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3. Submit this completed certification form to the regional office **by October 1, 2008.**

Note: You can send both the copy of your 2007 CCR and this certification form to the regional office at the same time. We are better able to identify and properly credit your system when both documents are received together. However, the certification form must be received no later than **October 1, 2008.**

CERTIFICATION FOR:

Water System Name City of Mabton

Water System ID Number 49650 R

Water System County Yakima

In compliance with the state Consumer Confidence Reporting regulations, I confirm that this CCR has been distributed to customers who use this water system, (and appropriate notice of availability has been given). I confirm that all information contained in this report is correct. I confirm that the CCR contains compliance monitoring data previously submitted to the Washington State Department of Health, Office of Drinking Water.

CERTIFIED BY:

Signature

Printed Name Ubaldo Herrera

Phone 509-894-4096

Date 6-30-08

DOH Form #331-203 (Rev. 02/08)

Ref

2009

need to be done This Month

2007 CITY OF MABTON ANNUAL WATER QUALITY REPORT

MABTON MEETS THE STANDARDS FOR SATE DRINKING WATER IN YEAR 2007

The City of Mabton's water distribution system reported no violations in meeting the standards for safe, clean water during 2007. It is a requirement that the water is tested twice a month for contaminants. In addition to monthly testing for coliforms, the City of Mabton is testing monthly for nitrates as well three, which is naturally high in nitrates was taken off line this well is only going to be used for emergency only. State and federal regulations require quarterly testing but The city is testing monthly to assure compliance with the Environmental Protection Agency (EPA) regulations. If a Violation were detected in our water tests, it would be posted In the Daily Sun newspaper and at the post office.

SAFE WATER

Drinking water, including bottled water, may reasonably be expected to contain at least small amount of contaminants, The presence of contaminants does not necessarily indicate that water poses a health risk. To ensure that tap water is safe to drink, the EPA prescribes regulation, which limit the amount of certain contaminants in water provided by public water systems. We treat and test our water according to EPA's regulations. The Food and Drug Administration regulations establish limits for Contaminants in bottled water, which must provide the same Protection for public health. For more information about contaminants and potential Protection Agency's Safe Drinking Water Hotline. (800-426-4791).

Este informe contiene informacion muy Importante. Traduscalo o hable con alguien que To entienda bien.

WATER SOURCES

The sources for drinking 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 radioactive material, and it picks up substances that result from animal and/or human activity.

WATER ORIGINS

Your water comes from two municipal wells sunk approximately 700 to 1100 feet into an underground aquifer. The wells are on the south side of town: Well 5 is located on corner of 6th and south street Well 4 is located on boundary and south street. The water is

releasing into the main distribution system.

INFORMATION

Citizens can obtain additional information by attending City Council meetings, which are held on 2nd & 4th Tuesdays of each month.

2007 ~~2006~~ CITY OF MABTON
Annual Water Quality Report

The following table lists all the drinking water contaminants that were detected during the 2007 calendar year. We are required to test for the following contaminants every three years. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year.

RADIOACTIVE CONTAMINANTS	MCL	MCLG	DETECTED	SOURCE OF CONTAMINANT
Beta/photon emitters (pCi/L)	50	0	ND	Decay of natural & man made deposits
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INORGANIC CONTAMINANTS				
Fluoride	4	4	ND	Erosion of natural deposits/water Additive to promote strong teeth
Lead (ppb)	AL=15	0	ND	Corrosion of household Plumbing
Nitrate (ppm)	10	10	ND	Runoff from fertilizer use
Selenium (ppb)	50	50	ND	Erosion of natural deposits
Nitrate (ppm) YR 2006	10	10	ND	Runoff from fertilizer use

TERMS & ABBREVIATIONS USED ABOVE:

Nd = Not Detected AL = Action Level ppm = parts per million
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2007 CITY OF MABTON
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APPENDIX U

DOH BLENDING APPROVAL LETTER

WATERLINE SPECIFICATIONS

1 WATER PIPE

1.1 GENERAL

The work covered in this section shall include the furnishing, installation, and testing of the water piping, valves, tees, fittings, and other appurtenances and incidental work required to construct the water facility as shown on construction plans and in accordance with Washington State Standard Specifications 7-09 through 7-15, and as herein modified.

In case of discrepancies between the two different specifications, following is the order of procedure:

A. These City of Mabton Waterline Specifications.

B. Washington State Standard Specifications.

1.2 APPROVED PIPE

POLYVINYL CHLORIDE (PVC) PIPE shall conform to the requirements of AWWA designation C900 for Class 150 (DR18).

1.3 PIPE COUPLING

POLYVINYL CHLORIDE PIPE COUPLING shall be integral bell and spigot with elastomeric gasket seals, and shall be "Ring-Tite" as manufactured by Johns-Manville, or an approved equal.

1.4 INSTALLATION

Pipe shall be installed in accordance with the manufacturer's specifications for the type of approved pipe used. The Contractor shall construct the pipeline in accordance with the requirements of Standard Specifications 7-10 and 7-11 as herein modified.

1.5 TRENCH EXCAVATION AND BACKFILL

Trench excavation for water line construction shall be in accordance with Standard Specification 7-10.3(7) and shall provide a minimum of 42 inches of cover material over the top of the finished pipe grade. Trench backfill material shall be compacted by means approved by the Engineer, as required to preclude future settlement and to achieve a minimum of 95 percent maximum density when tested in accordance with Standard Specification 7-10.3(11). Hand operated jumping jacks or shoe type mechanical tampers will not be approved.

Trench excavation shall be unclassified unless rock excavation is listed as a separate pay item.

WATERLINE SPECIFICATIONS

1.6 PIPE LOCATOR RIBBON

Pipe locator ribbon is required by City of Mabton at a depth of 18 inches below ground surface.

1.7 TRACER WIRE

The Contractor shall install a tracer wire over all nonmetallic water mains. The tracer wire shall be #14 gauge copper wire with UF insulation, colored blue. The tracer wire shall be installed as shown on the detail included herein. Access points shall be provided at valve boxes, air release and blow-off installations.

1.8 DISINFECTION

The disinfection of new water lines, including all connections and appurtenances, shall be in accordance with Standard Specification 7-11.3(12) as herein modified. Water test points shall be at typical intervals of 500 to 800 feet or as approved by the Engineer. Sanitation test samples can be taken at fire hydrants and temporary blow-offs when available. When not available, a corp stop shall be installed by the Contractor at the nearest service location. The Engineer shall submit written notification to the City indicating the results of the sanitation tests to the City, including copies of the test results from a certified laboratory.

1.9 PRESSURE TESTING

The pressure testing of new water lines, including all connections and appurtenances, shall be in accordance with Standard Specification 7-11.3(11) as herein modified. The hydrostatic test pressure for all types of pipe to be tested shall be 150 psi. The Engineer shall submit written results of the pressure testing to the City. The results shall include the section of pipe tested, the length of the test and beginning and ending pressures.

1.10 TRENCH SAFETY SYSTEMS

All trench excavation which will exceed a depth of four feet shall have adequate safety systems for the trench excavation that meet the requirements of the Washington Industrial Safety and Health Act, Chapter 49.17 RCW. The Contractor shall be fully responsible for providing the necessary back sloping, cribbing, trench boxes, etc., as required to meet the specified safety requirements for the trench.

1.11 MEASUREMENT AND PAYMENT

The unit contract price for each size of "Water Line," per linear foot when measured continuously along the pipe centerline, including the distances through structures, valves, and fittings, shall be full compensation for furnishing all labor, equipment, and materials, to trench, dewater, compact and backfill, lay and joint the pipe, make connections to existing stub lines, specified or required

salvage, test, disinfect, and all other incidentals required to perform the work in accordance with the plans and specifications or as directed by the Engineer.

Cost for Trench Safety Systems, if required, shall be paid for as a separate bid item.

2 ROCK EXCAVATION

2.1 GENERAL

When provided for in the bid proposal, a separate measurement and payment will be made for rock excavation. Rock excavation shall include solid rock formations requiring systematic drilling and blasting with explosives and any boulders or broken rock larger than one-half cubic yard in volume. Hardpan or cemented gravel, even though it may be advantageous to use explosives in its removal, shall not be classified as solid rock excavation. The bottom of the trench shall be brought up to grade by backfilling with selected backfill material and be compacted to the satisfaction of the Engineer.

The Contractor shall notify the Engineer at least 24 hours prior to any blasting. All blasting shall be done in accordance with local, county, and state regulations governing this class of work. Any damage to persons or property resulting from blasting operations shall be the sole responsibility of the Contractor and his surety.

2.2 MEASUREMENT

The measurement for "Rock Excavation" shall be made as follows:

2.2.A. LENGTH

Length will be the entire horizontal distance where rock is encountered measured on a linear foot basis along centerline of trench.

All water line structures; i.e., valve pits, transmission line blow-offs, pressure reducing stations, etc., will be excluded and will be measured separately. Measurement will commence at the first location where rock is encountered and continue to the point where the rock terminates.

2.2.B. WIDTH

The trench width for payment of rock excavation shall be as follows:

Size of Pipe	Pay Width of Trench

WATERLINE SPECIFICATIONS

4" - 15"	2.5 feet
18" - 36"	Outside pipe diameter plus 12"
42" & larger	Outside pipe diameter plus 24"

2.2.C. DEPTH

Measurement for depth will be the vertical distance from six inches (6") below the pipe invert to the top of the solid rock strata. Depth will be measured at intervals of 25 feet along centerline of trench, beginning at the first location that solid rock is encountered, and the average depth between measuring points will be the depth used for computing depth of rock.

2.2.D. ROCK EXCAVATION FOR STRUCTURES

Rock excavation quantities for water line structures; i.e., valve pits, transmission line blow-offs, pressure reducing stations, etc., shall be computed on a cubic yard basis from the actual profile depth as noted above, multiplied by the area within a line parallel to and one foot (1') outside of the actual dimensions of the structure base.

2.3. PAYMENT

The unit contract price for "Rock Excavation," per cubic yard, shall be paid in addition to the payment for "Water Line Pipe," per linear foot. Payment for rock excavation shall be full compensation for all work necessary to excavate and dispose of the rock material. No payment will be made for rock excavated below required grade or outside the widths mentioned above.

3 PIPE BEDDING

3.1 GENERAL

It is the intent of these specifications to use select native material from the site for backfill around the water main pipe. When unsuitable native material exists or is encountered during trench excavation, imported bedding material may be required by the Engineer, depending on the type of pipe being installed and the type of materials encountered. Where directed by the Engineer, the Contractor shall furnish and place imported pipe bedding.

3.2 NATIVE BEDDING MATERIALS

Select native material used for bedding pipes shall meet the requirements of Standard Specification 9-03.12 as herein modified. The minimum sand equivalent shall be 50. Select native material shall be free of organic materials, lumps, rocks and pavement chunks and shall meet the approval of the Engineer.

WATERLINE SPECIFICATIONS

3.3 IMPORTED BEDDING MATERIALS

Imported pipe bedding for pipes shall be in accordance with Standard Specification 9-03.12 as herein modified. The minimum sand equivalent shall be 50.

3.4 COMPACTION

The bedding material shall be placed and compacted in lifts not to exceed six inches (6"). The pipe bedding shall be compacted to not less than 95 percent of maximum density. Compaction shall be done in such a manner as to preclude future settlement.

3.5 MEASUREMENT

Measurement for payment shall be by the linear foot for imported bedding material incorporated in the project.

3.6 PAYMENT

The unit contract price for "Imported Pipe Bedding," per linear foot, shall be full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary to the installation of bedding material in accordance with the plans and specifications or as directed by the Engineer.

Select native materials, which are acceptable as bedding and utilized as bedding, shall be considered as incidental to the pipe installation and no additional payment will be made for its use as imported pipe bedding.

WATERLINE SPECIFICATIONS

4 FIRE HYDRANT ASSEMBLIES

4.1 GENERAL

Installation of fire hydrants shall conform to the requirements of the detail included herein and Standard Specification 7-14 as herein modified. Hydrants shall be three (3) port fire hydrants, as described in Section 4.2 of these specifications.

4.2 MATERIALS

Fire hydrants shall meet AWWA C502 and be dry top, break-away type. The hydrants shall allow for three (3) feet of cover over the inlet pipe and be traffic yellow in color. The main valve opening shall be five and one-quarter (5-1/4) inches. The shoe inlet shall be six (6) inches, MJ connection. Hydrants shall be equipped with two (2) two and one-half (2-1/2) inch hose nozzles and one (1) four and one-half (4-1/2) inch pumper nozzle with threads conforming to national standard thread. The operating nut shall be one and one-half (1-1/2) inch pentagon nut that opens left. Hydrants shall be equipped with bronze upper valve plate, bronze seat ring, and bronze drain ring. They shall have a self lubricating oil reservoir, sealed by dual "O" rings and equipped with an anti-friction washer and weather cap. Nozzle caps shall be attached to upper barrel with individual non-kinking chains. Bonnet and lower barrel flanges shall be concealed. The breakaway safety stem shall be recessed within hydrant barrel. The hydrants shall be Mueller Centurion A-423 or an approved equal. Any vertical adjustment shall be manufactured specifically for the hydrant used. When not protected by a curb, hydrants shall be protected by guard posts.

Fire hydrants shall be painted OSHA Safety Yellow above ground line. The hydrant waste orifice at the base of the hydrant shall be bronze and connected to the hydrant by means of a bronze on bronze fitting to prevent rust and normal soil corrosion from plugging or interfering with its operation. Hydrants shall be of standard manufacture and of a pattern approved by the Owner. The name or mark of the manufacture, size of the valve opening, and year made shall be plainly cast in raised letters and so placed on the hydrant barrel as to be visible after the hydrant has been installed.

The vertical adjustment assemblies shall be complete, including the flanged riser, stem and all required components to provide a complete adjustment kit.

All associated valves, valve boxes, fittings and thrust blocks installed under the "Fire Hydrant Assembly" shall be in conformance with Section 7 of these specifications.

4.3 INSTALLATION

Fire hydrants shall be installed according to Standard Specification 7-14 as herein modified, and the detail included herein. Fire hydrants shall be located as shown on the plans. Where conflicts

or conditions require deeper than standard bury, the Contractor shall provide an extra deep hydrant or add an adjustment to the standard hydrant. The following requirements shall prevail for the installation of the fire hydrant:

4.3.A The bottom of the lowest port shall be a minimum of eighteen inches (18") above the top of the finished surface of existing or future sidewalk.

4.3.B Hydrants are to be free of vegetation and barriers for a three foot (3') radius circle measured from the operating nut.

4.3.C Fire hydrants are to be hooded until operable and accepted.

4.3.D Valves on mains to hydrants shall be bolted directly to the tee serving the hydrant.

4.3.E Valves servicing fire hydrants on any fire line shall be installed as per fire hydrant installation detail included herein.

4.3.F Guard post shall be installed if the hydrant is not protected by a curb.

4.3.G Salvage shall be completed per these specifications, Section 19.

4.4 MEASUREMENT

Measurement for fire hydrant assembly shall be per each assembly. An assembly includes: the main line tee with flanged coupling adapters (when required), blocking for tee and hydrant, six inch (6") gate valve and valve box, six inch (6") connecting pipe, shackles, tie rods, pier blocks, coarse gravel, painting, and any other items that are required for the complete installation of the hydrant as specified. Measurement for a 6-inch or 12-inch hydrant vertical adjustment assembly installed when directed by the Engineer, shall be per each assembly complete in place, or in lieu of, the Contractor may at his option, provide an extra depth bury hydrant as the location requires. Measurement will be made for the hydrant bury greater than the standard 4'-0" bury, only when made necessary by conflicting utilities or by the grade of the ground at the hydrant location. Measurement will be made per each for "Fire Hydrant Guard Post" when required.

4.5 PAYMENT

The unit contract price for 6-inch or 12-inch hydrant vertical adjustment assembly, "Fire Hydrant Guard Post," "Fire Hydrant Assembly," per each, shall be full compensation for all necessary labor, materials, tools, and equipment to install the adjustment or the fire hydrant assembly in place, complete, including adjusting of the valve box to the finished grade in accordance with the plans and specifications or as directed by the Engineer.

WATERLINE SPECIFICATIONS

5 BLOW-OFF ASSEMBLY

5.1 GENERAL

This specification covers the construction and installation of a two inch (2") blow-off assembly to allow for the controlled flushing of water from the water distribution system.

5.2 MATERIALS AND CONSTRUCTION

With the exception of temporary installations, all materials used shall be new and assembled in accordance to the requirements of the detail included herein and the following requirements:

5.2.A Pipe shall be galvanized steel, Schedule 40, threaded by couple ends, and shall meet the requirements of ASTM designation A 120.

5.2.B Fittings shall be standard dimension, galvanized, malleable iron, manufactured in accordance with the requirements of ASTM 197, and capable of withstanding a working pressure at 150 psi.

5.2.C Gate valve shall be flanged with a nonrising two-inch square operating nut, counter-clockwise opening, similar or equal to the M&H Style 67-02.

5.2.D Valve boxes shall be as specified in Section 7.2.D of these specifications.

5.2.E Tapping saddle shall be a double strap saddle similar and equal to the Rockwell Model 313.

5.3 MEASUREMENT AND PAYMENT

The unit contract price for "Two-Inch Blow-Off Assembly," or "Temporary Two-Inch Blow-Off Assembly," per each, shall be full compensation for furnishing all labor, materials, equipment, trenching and backfill, valves, fittings, thrust blocks, adjusting the valve boxes to finished grade, all other incidentals required to install the complete blow-off assembly in place, including tapping into the water main and removal of the temporary installations.

6 AIR AND VACUUM RELEASE ASSEMBLY

6.1 GENERAL

This specification covers the construction and installation of an air and vacuum release assembly to allow for the automatic venting of air into and out of a water line during times when the line is being emptied or filled with water.

WATERLINE SPECIFICATIONS

6.2 MATERIALS AND CONSTRUCTION

All materials used shall be new and assembled in accordance to the requirements of the detail included herein and the following requirements:

6.2.A Pipe shall be galvanized steel, Schedule 40, threaded by couple ends, and shall meet the requirements of ASTM designation A120.

6.2.B Street elbows shall be standard dimension, galvanized, malleable iron, manufactured in accordance with the requirements of ASTM 197, and capable of withstanding a working pressure of 150 psi.

6.2.C Tapping saddle shall be a stainless steel, double strap saddle similar and equal to the Smith Blair 331.

6.2.D Gate valve shall be flanged with nonrising two-inch (2") square operating nut, counter-clockwise opening similar and equal to the M&H Style 67-02.

6.2.E Pipe coupling device shall be similar and equal to the Dresser Style 38.

6.2.F Air and vacuum valve shall have a cast iron body, cover and baffle with a stainless steel float and a Buna N seat. All internal parts such as float guides, bushings, and baffle retaining screws shall be either stainless steel or bronze. The valve shall be similar and equal to APCO No. 144, and shall be capable of handling operating pressures of 150 psi.

6.3 MEASUREMENT AND PAYMENT

The unit contract price for "Air and Vacuum Release Assembly," per each, shall be full compensation for furnishing all labor, materials, equipment, trenching and backfill, valves, fittings, valve chamber, and all other incidentals required to install the complete air and vacuum assembly in place, including tapping into the water main.

7 VALVES, VALVE BOXES AND FITTINGS

7.1 GENERAL

This specification covers all valves, valve boxes, and water line fittings (tees, elbows, crosses, blocks, etc.) necessary as indicated on constuction plans. All valves shall be bolted to tees and fittings unless otherwise specified.

7.2 MATERIALS

WATERLINE SPECIFICATIONS

7.2.A BUTTERFLY VALVES: Valves larger than twelve inches (12") shall be butterfly valves.

All butterfly valves shall conform to the AWWA Standard for "Rubber Seated Butterfly Valves," (AWWA C504), and shall meet the following requirements:

7.2.A.1 Valves shall be Class 150-B and shall open counter-clockwise with a standard two inch (2") square nonrising operator nut.

7.2.A.2 Flanged valves shall be furnished with flanges faced and drilled to 150 pound American Standard dimensions and, unless otherwise specified or shown on the drawings, may be either short-bodied or long-bodied.

7.2.A.3 Shaft seals shall be designed for use with standard split V type packing.

7.2.A.4 Valve discs shall be manufactured from material listed in 7.2 of the above referenced AWWA Standard.

Prior to the installation of all rubber seated valves, the Contractor shall lubricate the seat with Molykote Valve Seal, Catalog No. 98750-56, as manufactured by Dow-Corning, or approved equal.

7.2.B RESILIENT SEATED GATE VALVES

All valves twelve inches (12") and smaller shall be resilient seated gate valves.

The resilient seated gate valves shall conform to the requirements of AWWA C509. The valve shall open counter-clockwise with a two-inch (2") square nonrising operator nut. The ductile iron gate valve wedge or gate member shall be fully encapsulated in synthetic rubber. All seating surfaces within the valve body shall be inclined to the vertical, the valve stem shall be sealed by a minimum of two (2) O-rings and all stem seals shall be replaceable with the valve wide open and subjected to full rated pressure.

The valve body and bonnet shall be epoxy coated inside and out. The waterway shall be smooth and shall have no depressions or cavities in the gate seating area.

Resilient seated gate valves shall meet the above specifications and shall be Clow R/W, Waterous Series 500, Kennedy Ken-Seal, Mueller, Dresser M&H Style 3067, unless otherwise specified in the contract Special Provisions.

7.2.C TAPPING VALVES

The Contractor shall be required to install resilient seated gate valves when making 4-

inch to 12-inch live taps on mains. The resilient seated gate valves shall be in accordance with the requirements of Section 7.2.B of these specifications and shall be installed in a manner meeting the Engineer's approval.

7.2.D VALVE BOXES

Cast iron sliding type adjustable valve boxes with covers shall be provided for all buried valves. Valve boxes shall consist of top and bottom section with slide type extensions and large bottom base where specified. Drop type cover shall be marked "WATER." In unpaved areas, valve boxes shall be provided with a six-inch (6") thick concrete collar, 30 inches square at the ground surface. Valve boxes and covers shall be "Tyler No. 6855" series, or a foreign-made clone equal in all dimensions and weight. The cover shall have a skirt length of 1-1/2 inches minimum, a total lid depth of 3-1/2 inches minimum, and a lid weight of minimum 13 pounds. Valve boxes shall be installed as shown on the detail included herein.

7.2.E FITTINGS

Fittings for ductile iron and PVC pipe shall be cast or ductile iron. Cast iron fittings shall conform to the quality and wall thickness specified in the American Standard for "Gray Iron and Ductile Iron Fittings, 3 inch through 48 inch for Water and Other Liquid" (AWWA C110), for "Fluid-Tite" joints specified in Section 1. All cast iron fittings, twelve inches (12") in diameter or larger, shall be lined with cement mortar in accordance with the requirements of the American Standard for "Cement Mortar Lining for Cast Iron and ductile Iron Pipe and Fittings for Water" (AWWA C104).

Ductile iron fittings shall be compact or standard bell and spigot, mechanical joint, or flanged as required on the plans. Standard fittings shall be in accordance with AWWA C110, "Gray Iron and Ductile Iron Fittings, 3 inch through 48 inch for Water and Other Liquids." Ductile iron compact fittings may be used in sizes through 12-inches. The fittings shall conform to all requirements of AWWA Standard C153 for ductile iron compact fittings 3-inch through 12-inch. The bell and spigot joints shall be rubber gasket sealed joints in accordance with AWWA C111. Ductile iron fittings, twelve inches (12") inside diameter or greater, shall be mortar lined in accordance with AWWA C104.

Cut-in tees and live tap tapping sleeves shall be as directed by the Engineer.

7.2.F THRUST BLOCKING

Concrete blocking shall be installed in accordance with the detail included herein and shall bear against solid undisturbed earth at the sides and bottom of the trench excavation and shall be shaped so as not to obstruct access to the joints of pipe or fitting. An 8 mil polyethylene sheet, or two layers of 4 mil, shall be placed between the fitting and the

thrust block.

7.3 INSTALLATION

Installation of valves, boxes, and fittings shall be in accordance with Standard Specifications 7-11 and 7-12 as herein modified.

7.3.A All valves are to be bolted directly to the tees or crosses as indicated in the plan. The flanges on valves and tees (or crosses) shall be plain faced. Flanges shall be faced and drilled to 150 pound American Standard dimensions.

7.3.B All other connections between pipe and fittings, or pipe and valve shall be flexible coupling, "Ring-Tite," "Fluid Tite," or approved equal, except as noted otherwise for installation of a cut-in tee where flanged coupling adaptors shall be used to connect the tee to the existing main.

7.4 MEASUREMENT

Valves and associated valve boxes, including their adjustment to finished grade, shall be considered as one item and shall be measured per each according to size of valve. All fittings shall be measured per each according to size and type. All valves, thrust blocks and fittings which are included in the unit items for "Fire Hydrant Assembly," "Blow-off Assembly," etc., shall be measured and paid as incidental to those unit items and no additional payment will be made for them.

7.5 PAYMENT

The unit contract price for each size of "Valve," per each, and each type and size of "Fitting," per each, shall be full compensation for furnishing all necessary labor, equipment, and materials, concrete thrust blocks, and all other incidentals required to install all valves and fittings in place in accordance with construction plans and these specifications or as directed by the Engineer.

When constructed in conjunction with a paving project, a separate measurement and payment will be made for adjusting to grade, after completion of paving, as per Section 8 of these specifications.

WATERLINE SPECIFICATIONS

8 ADJUST EXISTING AND NEW CASTING TO GRADE

8.1 GENERAL

When constructed in conjunction with a street construction project or pavement overlay, existing and new water valve boxes, air release and blow-off assembly castings, which are required to be adjusted to finished grade, shall be adjusted in accordance with the local street authority.

Where the new water valve boxes fall outside of the pavement restoration limits, in unpaved areas, the box shall be adjusted to conform to the adjoining grade and set in a 30" X 30" X 8" - thick concrete collar.

8.2 MEASUREMENT AND PAYMENT

All costs for the specified adjustments shall be considered incidental to the water line installation pay items provided in the bid proposal.

9 SALVAGE

9.1 GENERAL

All existing tees, valves, boxes, fire hydrants and miscellaneous fittings to be abandoned during construction, shall be removed by the Contractor for City salvage.

9.2 MEASUREMENT AND PAYMENT

Salvage of existing water line appurtenances shall be considered incidental to the unit contract price for "Water Line" and no additional compensation shall be allowed.

10 SCHEDULED WATER LINE SHUT DOWN

10.1 GENERAL

The Contractor shall give the City a 72-hour notice of required water line shut down. The Contractor shall verify that all required fittings necessary for connection are secured and in hand prior to scheduling shut downs. The Contractor shall be billed for cancelled shut downs, unless circumstances beyond the Contractor's control (as determined by the Engineer), have caused the Contractor to cancel the shutdown.

11 VALVE OPEN/CLOSE POLICY

WATERLINE SPECIFICATIONS

11.1 GENERAL

The City shall open/close all existing water line valves and new valves connected to existing water line at the Contractor's request. When a water line valve connected to the existing system is open, the Contractor shall, at all times, keep at least one downstream flow open to prevent back draw. Prior to the Contractor shutting down all of the downstream flows, the water line valve connected to the existing system must be closed. The Contractor shall provide reasonable notice to the Owner of the water system of the need for opening and closing valves.

12 TIE-IN TO EXISTING WATER LINES

12.1 GENERAL

Tie-in to the existing water lines and the installation of the required fittings and water line shall be under the direct observation of the Owner and the Engineer. Work shall not be started until all the materials, equipment, an labor necessary to properly complete the work are assembled on site. Extreme care shall be taken by the Contractor to keep the existing water lines and new fittings and water line clean and free from contaminates. The inside surfaces of the valve, pipe and fittings shall be thoroughly swabbed with, or filled with, a 75-parts per million chlorine solution 24 hours prior to the installation of all fittings. The fittings and water line shall be kept in a clean environment and delivered to the site within a protective covering. The fittings and waterline shall be swabbed again with the 75-parts per million chlorine solution just prior to their installation.

12.2 MEASUREMENT AND PAYMENT

All necessary labor, tools, dewatering, chlorine swabbing and incidentals as required to cut into existing water mains or remove existing fittings and valves as called for on the plans, shall be considered incidental to the unit contract price for water line, per linear foot, or fittings as allowed in the bid proposal.

13 COUPLINGS AND FLANGE COUPLING ADAPTERS

13.1 GENERAL

Couplings and flange coupling adapters shall be manufactured from cast iron and rated at a minimum of 150 psi. The minimum overall length shall be nine (9) inches and the minimum middle ring length shall be five (5) inches. Bolts shall be galvanized steel or cast-iron protected.

14 DIG AND VERIFY

WATERLINE SPECIFICATIONS

14.1 GENERAL

At the connection with existing water lines where shown and directed on the plans and as otherwise directed by the Engineer, the contractor shall expose and verify the exact pipe location, type, size and fittings required prior to ordering the fittings. After digging and verifying, the Contractor shall backfill, compact and cold patch the surfacing. Contractor shall provide the necessary traffic control and safety measures.

14.2 MEASUREMENT AND PAYMENT

The unit contract price for "Digging and Verifying," per each, shall be full compensation for all labor, materials, equipment and incidentals necessary to dig, verify, backfill, compact, provide traffic control and cold patch in accordance with construction plans and these specifications or as directed by the Engineer.

15 ADDITIONAL/ALTERNATE FITTINGS

15.1 GENERAL

Where a standard or specified fitting cannot be obtained or is not readily available, and the Contractor is required to add an MJ adapter to the fitting, the MJ adapter shall be separately paid for under the bid items for "Flange Adapter."

Elbows where noted on the plan sheet are indicated to the degree of bend that appears to fit best. The Contractor shall have the same diameter elbows of various degrees available for installation. If actual field conditions dictate that a degree of bend other than the one noted should be installed, the Contractor shall install the required fitting. Measurement and payment for "**-inch Elbow," per each, shall be full compensation for the actual degree of elbow installed as specified.

If fittings specified for an installation are not readily available, and involve revisions other than the addition of an MJ adapter, the Contractor may, when approved by the Engineer, install alternate fittings that complete the installation in the same manner. Alternate fittings, if used, will be measured and paid for by the unit bid price for the fittings that were specified for the installation.

WATERLINE SPECIFICATIONS

16 PRESSURE CAPS

16.1 GENERAL

Where specified on the construction plans or where directed by the Engineer as required by construction, the Contractor shall pressure cap and thrust block existing water lines. All work and materials shall be in accordance with these specifications.

16.2 MEASUREMENT AND PAYMENT

The unit contract price for "1-Inch to 4-Inch Pressure Cap," or "6-Inch to 8-Inch Pressure Cap," or "10-Inch to 16-Inch Pressure Cap," per each, shall be full compensation for all labor, equipment, materials and incidentals necessary to complete the pressure cap in accordance with construction plans and these specifications or as directed by the Engineer.

17 SIDE SEWER REPAIR

17.1 GENERAL

Although every effort has been made to show potential conflict with sewer services, the exact depth and location of sewer services are not known. The Contractor shall make every effort to prevent damage to sewer services. When sewer services are inadvertently broken or damaged, the Contractor shall repair the side sewer by installing a section of Schedule 40 ABS sewer pipe. The repair section of pipe shall be placed a minimum one foot into the trench walls to provide a solid foundation for the crossing of the new trench. The pipe ends shall be connected using repair clamps. Repair clamps shall be a flexible coupling with stainless steel clamps and shall be Fernco flexible couplings or approved equal. The area under the side service connection shall be bedded with compacted 5/8-inch minus top course rock. When directed by the Engineer or where rocky soils, unstable soils, or other conditions exist, where it may be difficult to detect a damaged side service, water shall be run from the home toilet or other source, to insure that all of the side services are undamaged, prior to beginning backfill operations.

17.2 MEASUREMENT AND PAYMENT

The unit contract price for "Sewer Service Repair," per each, shall be full compensation for all necessary labor, tools, equipment, excavation, backfill and incidentals necessary to make and complete the sewer service repair.

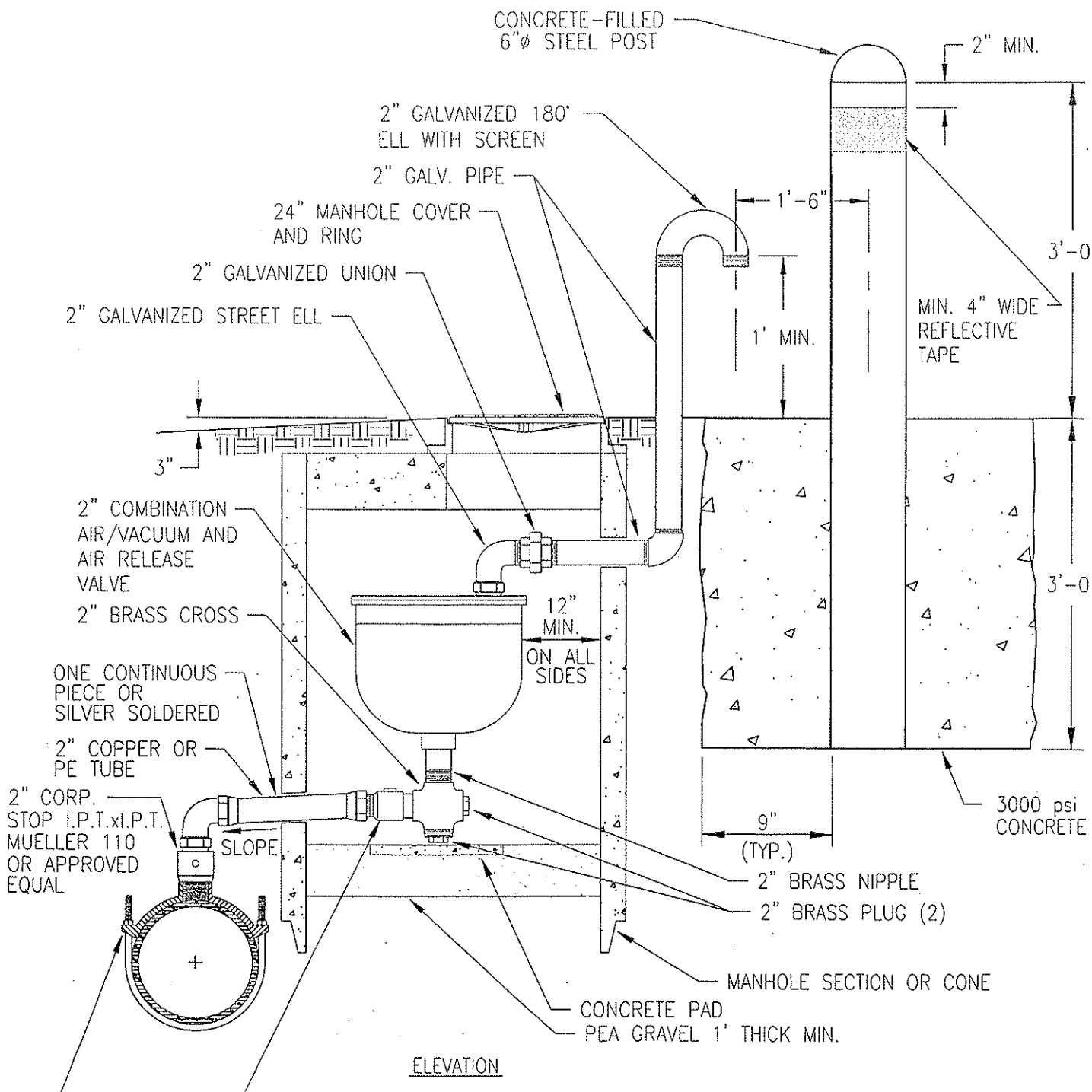
WATERLINE SPECIFICATIONS

18 ABANDONED CONDUITS

All pipes, conduits and other openings determined to be abandoned, which are cut or opened during the water line installation, shall be capped or concrete plugged prior to backfilling of the trench. Measurement and payment for required pipe cuts, labor, equipment, work and materials required to complete the specified plug shall be incidental to the pipe installation pay items.

19 ABANDONED FIRE HYDRANT REMOVAL

All fire hydrants connected to water mains scheduled for abandonment shall be removed by the Contractor and delivered to the City's storage yard for City salvage. Fire hydrants shall be removed intact, including the shoe. A separate measurement and payment will not be made for fire hydrant removal and all costs for removal and delivery shall be incidental to other bid items provided in the bid proposal.



ELEVATION

NOTES:

1. VALVE SIZE AND TYPE TO BE SPECIFIED BY THE DESIGN ENGINEER AND APPROVED BY THE CITY ENGINEER.
2. RISER SHALL BE PROTECTED FROM VEHICULAR OR PEDESTRIAN TRAFFIC AS APPROVED BY THE CITY ENGINEER.
3. PAINT GUARD POST(S) SAFETY YELLOW.
4. EXACT LOCATION OF GUARD POST(S) TO BE DETERMINED IN FIELD BY THE CITY ENGINEER.

SPINK ENGINEERING DWG FILE: 02134ARV.DWG

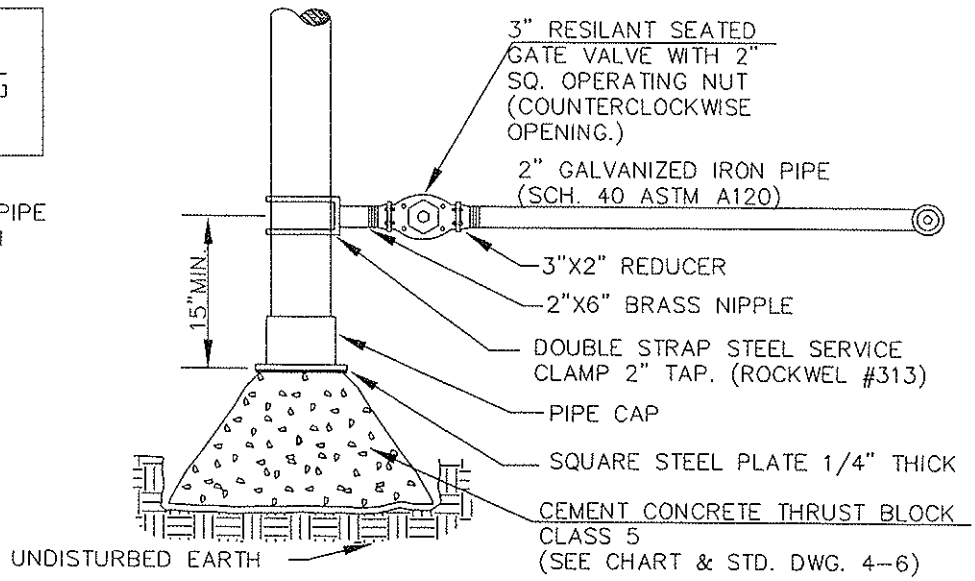
CITY OF MABTON

WATERLINE SPECIFICATIONS
AUGUST 2004

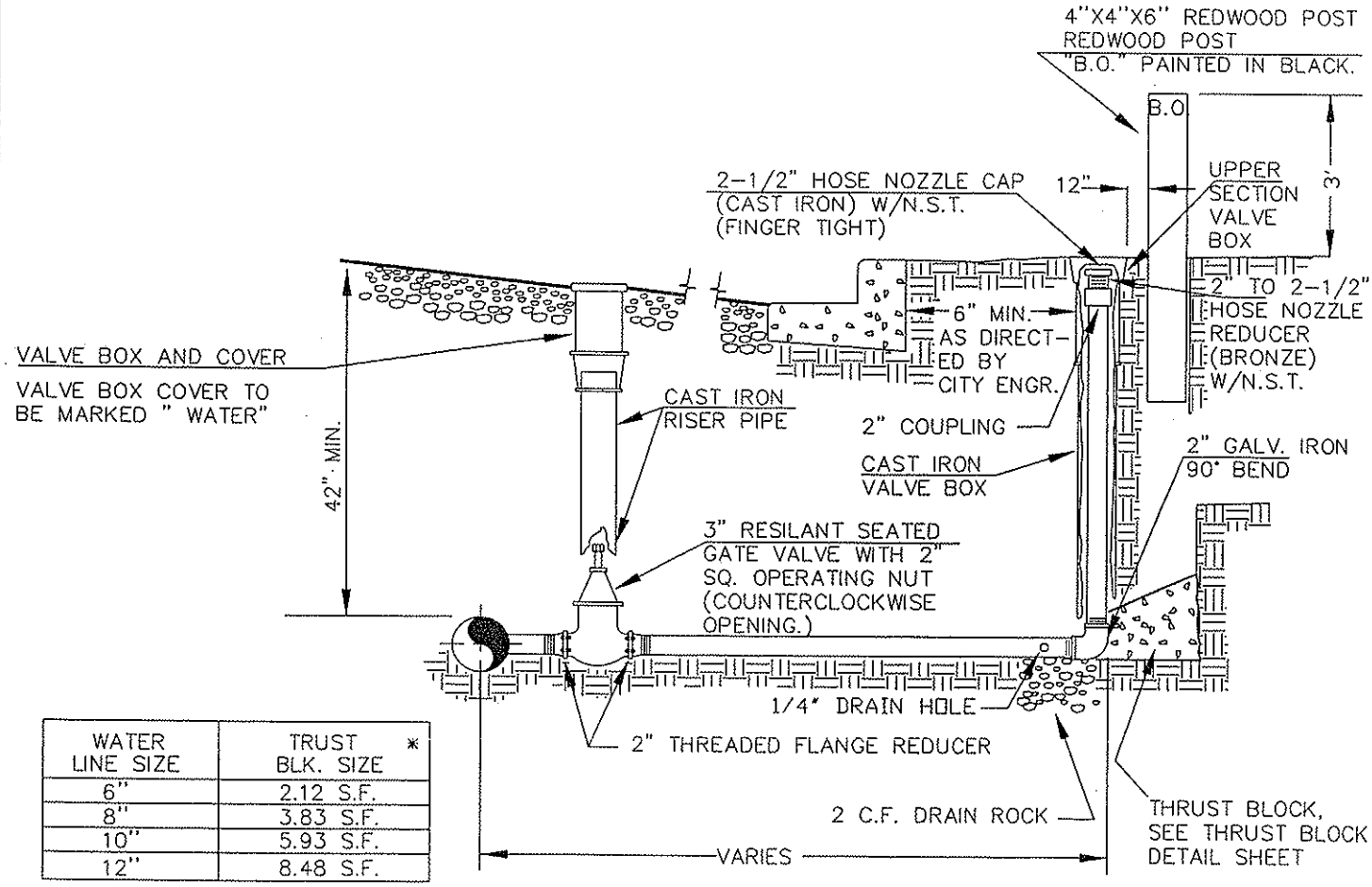
AIR RELEASE VALVE

CALL 48 HOURS
BEFORE YOU DIG
1-800-424-5555

NOTE:
TAP MAY BE OFF END OF PIPE
FOR 4" AND SMALLER MAIN
(SEE STD. DWG. # 4-1)



PLAN VIEW



WATER LINE SIZE	TRUST BLK. SIZE *
6"	2.12 S.F.
8"	3.83 S.F.
10"	5.93 S.F.
12"	8.48 S.F.

* BEARING AREA AGAINST TRENCH WALL.

ELEVATION

SPINK ENGINEERING DWG FILE: 021341580.DWG

CITY OF MABTON
WATERLINE SPECIFICATIONS
JULY 2003

BLOW-OFF DETAIL

CITY OF MABTON

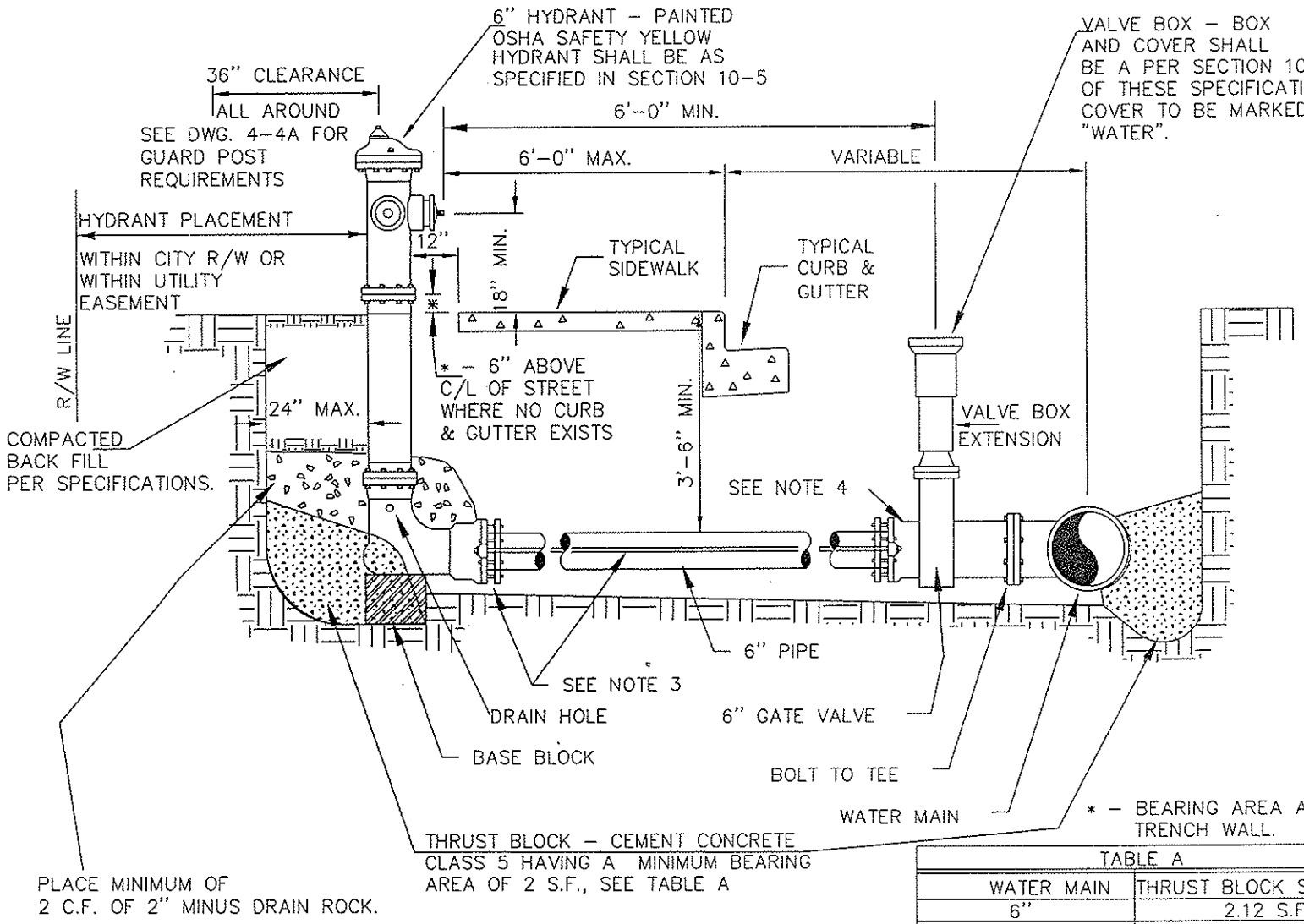
WATERLINE SPECIFICATIONS
JULY 2003

FIRE HYDRANT DETAIL

CALL 48 HOURS
BEFORE YOU DIG
1-800-424-5555

NOTES:

1) HYDRANTS SHALL BE 3 PORTS.
2) HYDRANTS SHALL BE PER SECTION 4 OF THESE SPECIFICATIONS.
3) 2 EA. 3/4" SHACKLE RODS MAY BE REQUIRED IN SPECIAL CIRCUMSTANCES AS DIRECTED BY THE ENGINEER.
4) HUB & FLANGE CASTING. (SEE NOTE 2)
5) HYDRANTS SHALL BE HOODED UNTIL OPERATIONAL.

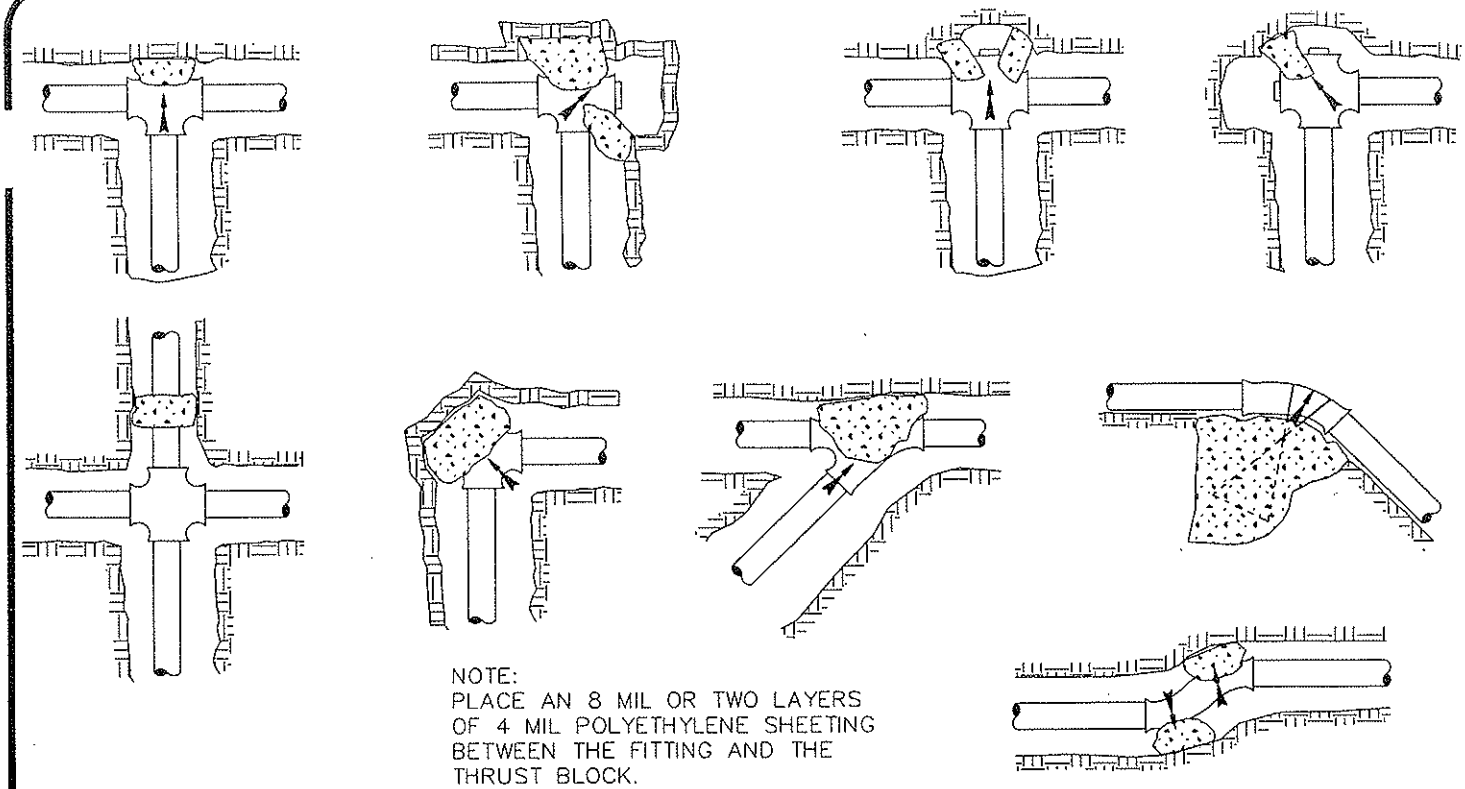


* - BEARING AREA AGAINST THE TRENCH WALL.

TABLE A

WATER MAIN	THRUST BLOCK SIZE
6"	2.12 S.F.*
8"	3.83 S.F.*
10"	5.93 S.F.*
12"	8.48 S.F.*

SPINK ENGINEERING DWG FILE: 02134FH.DWG



NOTE:
PLACE AN 8 MIL OR TWO LAYERS OF 4 MIL POLYETHYLENE SHEETING BETWEEN THE FITTING AND THE THRUST BLOCK.

PVC & DUCTILE IRON PIPE
150 PSI TEST PRESSURE

TABLE FOR BEARING AREAS OF THRUST BLOCKS IN SQUARE FEET
HANGING THRUST BLOCKS ARE IN CUBIC YARDS OF CONCRETE

PIPE SIZE	TEES AND DEAD ENDS	90 DEGREE BEND	45 DEGREE BEND	11 1/4 DEGREE 22 1/2 DEGREE BEND
4" & LESS	0.94	1.33	0.76	0.38
	HANGING THRUST BLOCK		0.38 CY	0.19 CY
6"	2.12	3.01	1.71	0.86
	HANGING THRUST BLOCK		0.84 CY	0.42 CY
8"	3.83	5.40	3.08	1.54
	HANGING THRUST BLOCK		1.52 CY	0.76 CY
10"	5.93	8.40	4.73	2.39
	HANGING THRUST BLOCK		2.34 CY	1.18 CY
12"	8.48	12.00	6.83	3.46
	HANGING THRUST BLOCK		3.37 CY	1.70 CY
14"	11.55	16.40	9.30	4.68
	HANGING THRUST BLOCK		4.59 CY	2.31 CY
16"	15.08	21.41	12.14	6.10
	HANGING THRUST BLOCK		6.00 CY	3.00 CY

NOTES:
1. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH AND SHALL BE CLASS 5 CONCRETE.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. BEARING LOAD IS CALCULATED AT 2,000 LB. PER SQ. FT.
4. FOR 200 PSI PRESSURE TEST FOR FIRE LINES MULTIPLY BY 1.34.

SPINK ENGINEERING DWG FILE: 02134TR.DWG

CITY OF MABTON

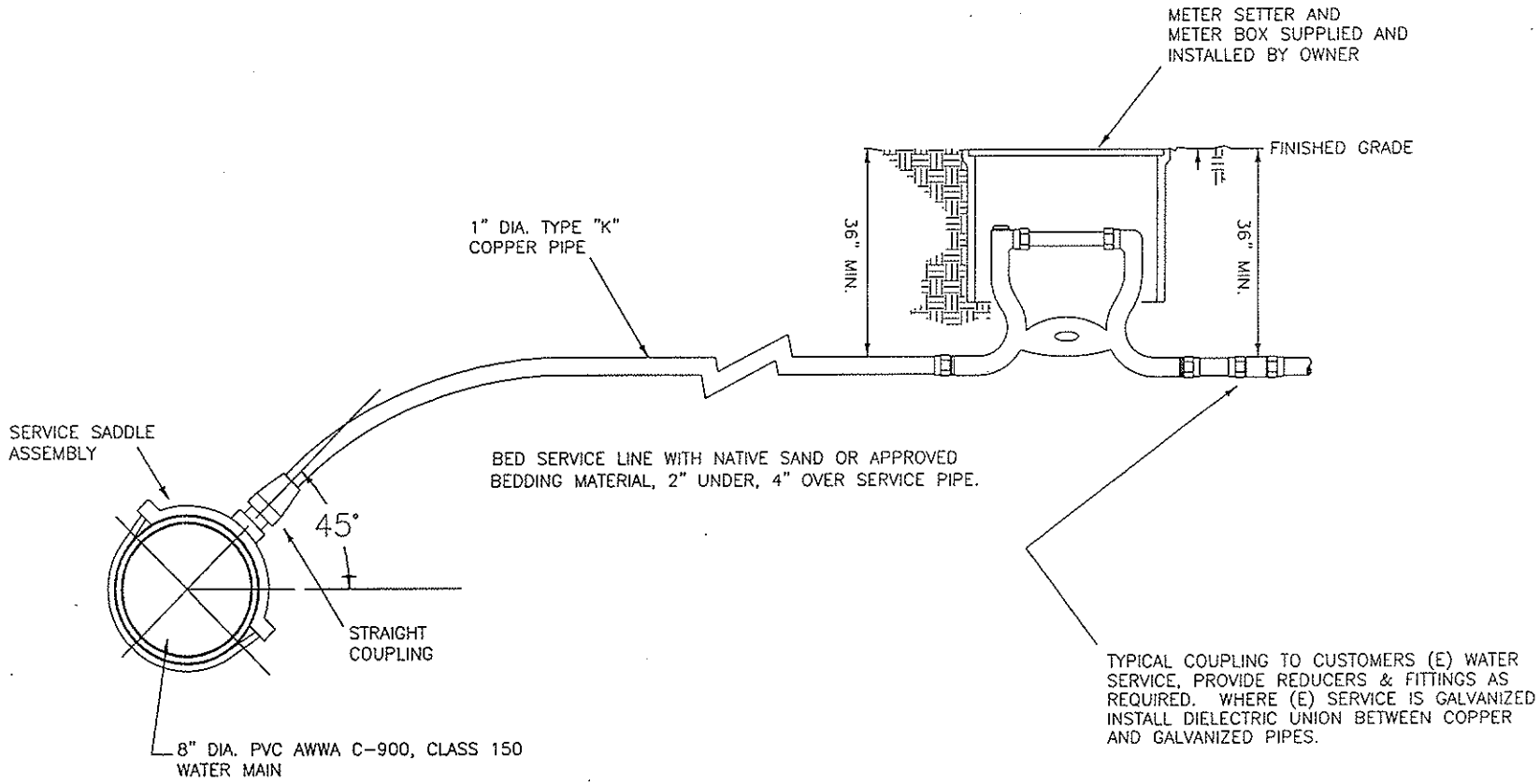
WATERLINE SPECIFICATIONS
JULY 2003

THRUST BLOCK DETAIL

CITY OF MABTON

WATERLINE SPECIFICATIONS
JULY 2003

WATER SERVICE DETAIL



WATER SERVICE DETAIL

SPINK ENGINEERING DWG FILE: 02134WS.DWG

APPENDIX V

CONSISTENCY STATEMENT LETTERS

Local Government Consistency Review Checklist

Water System Name: City of Mabton PWS ID: 49650

Planning/Engineering Document Title: Water System Plan Update Plan Date: March 2013

Local Government with Jurisdiction: City of Mabton

WAC 246-290-108 Consistency with local plans and regulations:
Consistency with local plans and regulations applies to planning and engineering documents under WAC 246-290-106, 246-290-107, and 246-290-110(4)(b (ii).

1) Municipal water suppliers must include a consistency review and supporting documentation in its planning or engineering document describing how it has addressed consistency with **local plans and regulations**. This review must include specific elements of local plans and regulations, as they reasonably relate to water service as determined by Department of Health (DOH). Complete the table below and see instructions on back.

Local Government Consistency Statement	Page(s) in Planning Document	Yes – No – Not Applicable
a) The water system service area is consistent with the adopted land use and zoning within the applicable service area.	Figure 1-4	Yes
b) The six-year growth projection used to forecast water demand is consistent with the adopted city/county's population growth projections. If a different growth projection is used, provide an explanation of the alternative growth projection and methodology.	2-10	Yes
c) Applies to cities and towns that provide water service: All water service area policies of the city or town are consistent with the utility service extension ordinances of the city or town.	1-13	Yes
d) Service area policies for new service connections are consistent with the adopted local plans and adopted development regulations of all jurisdictions with authority over the service area [City(ies), County(ies)].	1-13	Yes
e) Other relevant elements related to water supply are addressed in the water system plan, if applicable; Coordinated Water System plans, Regional Wastewater plans, Groundwater Area Management plans, and Capital Facilities Element of Comprehensive plans.	8-1	Yes

I certify that the above statements are true to the best of my knowledge and that these specific elements are consistent with adopted local plans and development regulations.

Signature 8/28/13 Date

Joseph Calhoun, Planner, YVCOG (Acting Planner for City of Mabton)
Printed Name, Title, & Jurisdiction

APPENDIX W

WELL NO.3 DOH BLENDING INSTRUCTIONS

Subject: Fw: Mabton (49650) Yakima County - S01 down and S03 online and summary of monitoring
Attachments: 49650_monitoringemail071212.pdf

----- Forwarded Message -----
From: "Stasney, Bryony E (DOH)" <Bryony.Stasney@doh.wa.gov>
To: cmorris.cityofmabton@yahoo.com
Cc: "Renfro, Britta (DOH)" <Britta.Renfro@doh.wa.gov>
Sent: Wednesday, August 21, 2013 4:23 PM
Subject: Mabton (49650) Yakima County - S01 down and S03 online and summary of monitoring

Hello Chris

Here is a copy of the email we have in our files that summarizes monitoring requirements when S03 is online.

Per our call today, here is a recap:

- Monthly raw source samples from S03 nitrate (mark as investigative) – send to the lab and ask the lab to send the results to the state
- Monthly blended sample - after water from S03 and the S05 wellfield blends (mark this sample as routine compliance with source #S92 and note which wells are running – S03 and S04) – send to the lab and ask the lab to send the results to the state
- Daily field nitrate after water from S03 and the S05 wellfield blends – record and send in to us each month

You will also collect a raw source sample this week from S03 for bacteria (mark as investigative) – send to the lab and ask the lab to send the results to the state.

You also noted on our call that S01 (well #4) is down. This well is one of the two wells in the S05 wellfield (the other is S04). The S01 well screens are being cleaned today. You plan to video the well tomorrow and pump test the well on Friday.

Thanks, Bryony

Bryony Stasney, L.HG., Source Water Quality Program Manager
Washington State Department of Health - Office of Drinking Water - Eastern Region
16201 East Indiana Ave., Suite 1500, Spokane Valley, WA 99216
Tel: 509-329-2100
Direct: 509-329-2132
Fax: 509-329-2104
Bryony.Stasney@doh.wa.gov

Renfro, Britta (DOH)

From: Renfro, Britta (DOH)
Sent: Thursday, July 12, 2012 1:37 PM
To: 'cmorris.cityofmabton@yahoo.com';
Cc: Cervantes, Andres (DOH); Stasney, Bryony E (DOH); Riley, Craig (DOH)
Subject: City of Mabton (ID# 49650R) Yakima County; nitrate monitoring/S03 to be online soon
Attachments: Mabton chlorination.docx

Hi Chris,

Thank you again for your call this morning to Bryony and me! Since water demand is going up, S05 (Wellfield/S01, S04) is not able to keep up with demand. Therefore, you will be turning on S03 for the season soon.

Next Week/prior to starting up S03:

- You plan on collecting a raw nitrate sample from S03 on Monday. This raw sample should be marked as "investigative" on the lab slip.
    - The purpose of the S03 raw source is to determine if the output of S03 needs to be limited, so that the nitrate level in the distribution system (blended) is below 10 mg/L.
    - It does not appear that we have any specific engineering documents in our office regarding this blending plan, but I want to check in with Andy Cervantes (DOH Regional Engineer for Yakima County) as well as check the Mabton Water System Plan first. *Andy is out of the office today, so I will get back to you about this after I am able to speak with him.*
- I don't think we discussed coliform sampling, but a coliform sample should also be collected from S03 when you take the nitrate sample next week. This is part of the start-up procedure for wells that are only used seasonally. Before collecting the samples, S03 should be thoroughly flushed. Please call our office if you have any questions about this.

Once S03 is online:

- **Each day** (at least 5 days per week) that S03 is in use, a field sample of the blended water needs to be collected. This can be done at any point after S03 and S05 have combined together. The purpose is to make sure water in the distribution system is below the nitrate MCL of 10.0 mg/L.
- **Each month** that S03 is online, a raw sample (unblended, S03 only) *and* a treated sample (S03 blended with S05) must be collected, and analyzed by a certified lab.
    - The S03 raw nitrate sample should be marked "investigative" each month that S03 is online, and the S03/S05 blended nitrate sample should be marked as "routine compliance" each month that S03 is online.
    - Be sure to note which sources are running in the comment section of the lab slip, and add "S92" for the source number on the lab slip *for the blended nitrate samples only*.
    - These monthly lab samples are in addition to the field monitoring you'll be doing each day when S03 is in use.

On a non-nitrate note, I have attached a blank free chlorine reporting form to this e-mail. The samples you collect at different locations (but on the same date) each month from the distribution system – *these samples are in addition to the daily residuals you report from the booster station* – can all just be put on one form; just manipulate the form so it works for you, or put the data into an Excel sheet if that is easier. Just make sure all the same information is on any chlorine reporting form you end up using; the headings ("REQ Daily Chlorination Report" on the top, then water system name, ID#, county, who is submitting the report), and the monitoring information (when/where free chlorine monitoring was done and the result).

We'll talk again once next week's nitrate test results are in. Thank you again for letting us know that S03 will be online soon!

Sincerely,

Britta Renfro
Environmental Specialist
Washington State Department of Health
Office of Drinking Water, Eastern Regional Office
16201 E. Indiana Ave., Suite 1500

APPENDIX X

CORRESPONDENCE

City of Mabton
Council Meeting Minutes
April 9 2013

Call to Order

Mayor Angel Reyna called the meeting to order 7:01 p.m.

Pledge of Allegiance & Moment of Silence

Mayor Pro Tem Hutson led the Pledge of Allegiance and a moment of silence.

Roll Call

The following were:

Present: Mayor Angel Reyna and Council persons Mario Martinez, Vera Zavala, Sophie Sotelo, Oping Hutson and Mark Gourneau

Also present: Clerk/Treasurer Ret Stewart Fire Chief Luke Cussins and Police Chief Rick Gutierrez

Absent: City Attorney Phil Lamb

Vote on the Agenda

Mr. Martinez made a motion and Mr. Gourneau seconded it to approve the agenda as presented. The motion carried unanimously.

Consent Agenda

Mr. Martinez made a motion and Mr. Gourneau seconded it to approve the following agenda:

- Approve the claims checks 24565 to 24586 in the amount of $13,725.74 dated April 9, 2013
- Approve the payroll checks 13103 to 13136 in the amount of $28,727.47 dated March 29, 2013
- Approve the minutes of the Study Session dated March 26, 2013
- Approve the minutes of the council meeting date March 26, 2013

The motion carried unanimously.

Citizens Comments

No one here

Public Forum

Public forum being held per D.O.H. Morie Block told the council that the real goal is water conservation. Opened at 7:02 and closed at 7:09. There were no citizens present.

Old Business

The council was reminded of Free Dump Day on April 13 from 8:00 to 3:00. Mr. Martinez made a motion and Mr. Gourneau seconded it to spend $100.00 for lunch for the various workers for dump day. The motion carried unanimously.

New Business

G & O (Mr. Block) gave an update of the water plan at the study session. Mr. Van Cleave gave an update for the wwtp at the study session. Mr. Martinez made a motion and Mrs. Hutson seconded it to

adopt the water use efficiency goals on Page 4.3 and 4.4 of the water facility plan draft. The motion carried unanimously. Mr. Martinez made a motion and Mr. Gourneau seconded it to authorize G & O to send the draft water plan facility to D. O. H. The motion carried unanimously.

Chief Gutierrez gave a brief update of the progress on hiring a new police officer.

Mr. Martinez gave a brief update of the website to the council. He said he will be looking for sponsors and charge them $250 a quarter for the main page and $100 a quarter for the secondary page.

There will be an update for the capture of dogs and the citizens obtaining their licenses at the next meeting.

Mr. Martinez made a motion and Mr. Gourneau seconded it to purchase a TORO lawn mower for $8,470.73 on a two year lease. The motion carried unanimously.

Mr. Martinez made a motion and Mr. Gourneau seconded it to pay $4,459.30 to the City of Yakima Home Consortium for the Spillman equipment. A budget amendment will be prepared for the amount over budget. The motion carried unanimously.

The contract with Yakima Co IT was reviewed for the portion for the website. The contract has already been approved.

Mr. Martinez made a motion and Mr. Gourneau seconded it to approve Ordinance 1001 to increase the garbage rates effective 5-1-13 with Yakima Waste Systems and the City of Mabton. The motion carried unanimously.

Comment

Mrs. Zavala stated that there is a lot of parking over the sidewalks and would like to have it stopped.

Mrs. Hutson requested that she meet with Mayor Reyna and Ms. Stewart to go over various items that she feels have not been completed. He will meet with her at 1:00 on Friday.

Mayor Reyna reported that he has hired Mike Mendoza for the wastewater plant.

Mayor Reyna thanked Amber for her work with the City. She has taken a position with the Chelan newspaper.

Adjournment

Mayor Reyna adjourned the meeting at 7:59 p.m.

Mayor Angel Reyna

Ret Stewart, CMC Clerk/Treasurer

City of Mabton
Council Meeting Minutes
August 13, 2013

Call to Order

Mayor Vera Zavala called the meeting to order 7:04 p.m.

Pledge of Allegiance & Moment of Silence

Mayor Zavala led the Pledge of Allegiance & the council in a moment of silence.

Roll Call

The following were:

Present: Mayor Vera Zavala and Council persons Oping Hutson, Marlo Martinez, Mark Gourneau, Sophia Sotelo and (open position)

Also present: Clerk/Treasurer Ret Stewart, City Attorney Jamie Carmody and Chief Rick Gutierrez

Absent: Fire Chief Luke Cussins

Vote on the Agenda

Mr. Martinez made a motion and Mr. Gourneau seconded it to approve the agenda as presented. The motion carried unanimously.

Consent Agenda

Mr. Martinez made a motion and Mr. Gourneau seconded it to approve the following agenda:

- Approve the claims checks 24813 to 24849 in the amount of $117,996.86 dated August 13, 2013
- Approve the payroll checks 13345 to 13375 in the amount of $35,947.31 dated July 31, 2013
- Approve the minutes of the council meeting dated July 9, 2013
- No action Washington Liquor Control Board LA Barata

The motion carried unanimously.

Citizens Comments

Freddie Perales introduced himself.

Public Meeting

Mayor Zavala opened the public meeting at 7:07 p.m. There was not citizen comment. PW Chris Morris made a presentation about the plan for improving water using and to meet the needs of the WUE (water use efficiency) report. They include: putting meters on the wells and parks that did not have them, regulating the water usage for the irrigating the lawns, etc. Mayor Zavala closed the meeting at 7:18 p.m.

Old Business

Mr. Carmody gave an update on the purchase of the land for the WWTP. Mr. Martinez made a motion and Mr. Gourneau seconded it to authorize the Mayor to sign the Agreement for the Acquisition of the Property. The motion carried unanimously.

Mr. Carmody stated that there are three parts to be taken care of.

- Have the agreement signed
- Vacate Vance
- Annex the property with the cemetery included

New Business

Mr. Van Cleave from G & O presented an update for the water problem to the council along with photos.

Mr. Van Cleave asked the council to vote to authorize the Mayor to sign the TIB application with no match . Mr. Martinez made a motion and Mrs. Hutson seconded it to authorize the Mayor to sign upon receipt and mail it in. The motion carried unanimously.

Mayor Zavala read the letter of resignation for personal reasons for Council Position #5 from Johnnie Gusby.

Mr. Carmody stated that he is working with the attorney for the transfer of the church in Fezelle Park to the City.

There was discussion of the need to have the pump working before taking possession of the park currently owned by Catholic Housing.

Comments

Mrs. Sotelo stated that she has found two volunteers for her committee to review the Ordinances.

It was decided to check with Snipes Mountain to hold the annual budget meeting on September 7th from 11:00 to 4:00.

Adjournment

Mayor Zavala adjourned the meeting at 8:34 p.m.

Mayor Vera Zavala

Ret Stewart, CMC Clerk/Treasurer

Affidavit of Publication

STATE OF WASHINGTON
COUNTY OF YAKIMA SS

Timothy J. Graff, being first duly sworn on oath deposes and says that he is the Publisher of the DAILY SUN NEWS, a daily newspaper.

That said newspaper is a legal newspaper and it is now and has been for more than six months prior to the date of publications hereinafter referred to, published in the English language continually as a daily newspaper in the city of Sunnyside, YAKIMA County, Washington, nd it is now and during all of said time printed in an office maintained at the aforesaid place of publication of said newspaper, and that the said Daily Sun News was on the 4th Day of April, 1969 approved as a legal newspaper by the Superior Court of said Yakima County.

That the annexed is a true copy of a LEGAL PUBLICATION -
City of Mabton
Public Hearing Aug. 13
published in regular issues (and not in supplemental forms) of said newspaper once each week for a period of 1 consecutive issue(s) commencing 08/02/13 and ending on 08/02/13, both dates inclusive, and that such newspaper was regularly distributed to its subscribers during all of said period. That the full amount of the fee charged for the foregoing publication is the sum of $ 17.50, amount has been paid in full, at the rate of $7.00 per column inch per insertion.

PUBLIC HEARING
NOTICE IS HEREBY GIVEN that a public hearing will be held by the City of Mabton City Council in the city council chambers at City Hall, on August 13, 2013.
The purpose of this public hearing is to discuss the plan for water conservancy in order to meet the W.E.C. requirements.
Call 894-4096 if you have any questions, contact Ms. Ret Stewart, CMC, Clerk Treasurer at (509) 894-4096.
PUBLISH: DAILY SUN NEWS
August 2, 2013

Subscribed and sworn to before me 08/02/13

Notary Public in and for the State of Washington
100203-00007

NORA HERNANDEZ
Commission Expires
NOTARY PUBLIC
08-20-2015
STATE OF WASHINGTON

Water System Plan Submittal Form

This form must be completed and submitted along with the Water System Plan (WSP). It will expedite review and approval of your WSP. **All water systems should contact their regional planner before developing any planning document for submittal.**

Mabton, City of	49650	City of Mabton
1. Water System Name	PWS ID# or Owner ID#	System Owner Name
Christopher Morris	(509) 894-4096	Public Works Lead
Contact Name for Utility	Phone Number	Title
305 Main St	Mabton	WA 98935
Contact Address	City	State Zip
Jim Bricel	(509)-453-4833	PE
2. Project Engineer	Phone Number	Title
107 S. 3rd St.	Yakima	WA 98901
Project Engineer Address	City	State Zip
(same as above)		
3. Billing Contact Name (required if not the same as #4)	Billing Phone Number	Billing Fax Number
Billing Address	City	State Zip

4.	How many services are presently connected to the system? (Total Calculated Connection)	632
5.	Is the system expanding? (seeking to extend service area or increase number of approved connections)	☒ Yes ☐ No
6.	If number of services is expected to increase, how many new connections are proposed in the next six years?	39
7.	If the system is private-for-profit, is it regulated by the State Utilities and Transportation Commission?	☐ Yes ☒ No
8.	Is the system located in a Critical Water Supply Service Area (i.e., have a Coordinated Water System Plan)?	☐ Yes ☒ No
9.	Is the system a customer of a wholesale water purveyor?	☐ Yes ☒ No
10.	Will the system be pursuing additional water rights from the State Department of Ecology in the next twenty years?	☒ Yes ☐ No
11.	Is the system proposing a new intertie?	☐ Yes ☒ No
12.	Do you have projects currently under review by the Department of Health?	☐ Yes ☒ No
13.	Are you requesting distribution main project report and construction document submittal exception, and if so, does the WSP contain standard construction specifications for distribution mains?	☒ Yes ☐ No
14.	Are you requesting distribution related project report and construction document submittal exception, and if so, does the WSP contain distribution facilities design and construction standards, including internal engineering review procedures?	☐ Yes ☒ No
15.	The purveyor is responsible for sending a copy of the WSP to adjacent utilities for review or a letter notifying them that a copy of the WSP is available for their review and where the review copy is located. Has this been completed?	☒ Yes ☐ No
16.	The purveyor is responsible for sending a copy of the WSP to all local governments within the service area. (County and City Planning Departments, etc). Has this been completed?	☒ Yes ☐ No
17.	Are you proposing a change in the place of use of your water right?	☐ Yes ☒ No

If answer to questions 7,8, 11, 15and/or 16 is "yes," list who you sent the WSP to: Yakima County, Grandview, YVCOG (City of Mabton planner)_____

Is this plan: ☐ an Initial Submittal ☒ a Revised Submittal

Please enclose the following number of copies of the WSP:

3 copies for Northwest and Southwest Regional Offices **OR 2** copies for Eastern Regional Office (We will send one copy to Ecology)
1 additional copy if you answered "yes" to question 7. 2 Total copies attached

Please return completed form to the Office of Drinking Water regional office checked below.

☐ **Northwest Drinking Water Operations**
Department of Health
20425 72nd Avenue South, Suite 310
Kent, WA 98032-2358
(253) 395-6750

☐ **Southwest Drinking Water Operations**
Department of Health
PO Box 47823
Olympia, WA 98504-7823
(360) 236-3030

☒ **Eastern Drinking Water Operations**
Department of Health
16201 East Indiana Avenue Suite 1500
Spokane Valley, WA 99216
(509) 329-2100

If you need this publication in an alternate format, call (800) 525-0127. For TTY/TDD, call (800) 833-6388.

DOH COMMENT RESPONSE FORM

DOH Comment No.	DOH Comment	Water System Response	Page Number of Response	Other Water System Comments
1	Regarding Figure 1-4: There is an area of land in the north part of the Urban Growth Boundary on Vance Road that is in the existing service area but not in the water rights place of use (WRPOU) service area. If the City is providing service in this area using City water rights, it should be included in the WRPOU service area. The text on Page 1-11 under "Future Service Area" states, the future service area is defined by the UGA boundary and is shown on Figure 1-4. However, the future service area shown on Figure 1-4 is not the same as the UGA. Please correct either the text or the Figure.	This area has been included in the WRPOU service area. Figure 1-4 has been revised. The text on Page 1-11 has been revised.	Fig. 1-4 Pg. 1-11	
2	Include completed local government consistency forms from the City of Mabton planning office and Yakima County planning in the second draft.	The consistency statements from Yakima County and the City of Mabton planner have been included in appendix.	Appendix X "Consistency Statement Letters".	
3	The capacity determination for the City is limited, given the information is available. It is necessary to have a better estimate for the sustained capacity (gpm) of Well #4 (S01).	This well has recently been flow-tested at 240 gpm. In the plan, this well is conservatively estimated at 200 gpm.	Chapter 3 throughout.	
4	Investigate and provide a realistic capacity for Well #4 (S01). The text of the plan indicates the actual capacity of Well #4 is below the capacity shown on the Water Facilities Inventory. This analysis is used to determine the total number of approved connections possible, which must reflect the actual capacity (physically and legally) of the City.	This well has recently been flow-tested at 240 gpm. In the plan, this well is conservatively estimated at 200 gpm.	Chapter 3 throughout.	
5	Identify whether there is a potential risk in draining the reservoir, given the total capacity of the booster pump exceeds the capacity of the wells. In addition, the plan repeatedly states the capacity of S01 (Well#4) is significantly lower than previously known.	Yes, it is possible for the tank to be drained. See discussion on page 2-4. Regarding the capacity of S01, see notes above.	Pg. 2-4	The City is aware of this concern.
6	The Water Use Efficiency (WUE) goal noted on page 4-3 is to achieve water savings over the next six years. Document that the WUE goal for the time period 2013 through 2019 was established as required by WAC 246-290-830, by providing a copy of the meeting notice and a copy of the meeting minutes.	Documentation of the meeting notice and a copy of the meeting minutes are provided in the appendices.	Appendices "Correspondence"	

DOH Comment No.	DOH Comment	Water System Response	Page Number of Response	Other Water System Comments
7	The Department of Ecology has not issued a review letter for this WSP. If the Department of Ecology issues a review letter, please address any comments in the second draft of the WSP.	No letter has been received to date.	n/a	
8	Provide a copy of the operating procedures and monitoring and reporting requirements the City must implement , if it is necessary to operate S03 (Well #3). The procedures must include notifications, laboratory and field tests, as required by DOH.	The City follows DOH directed operating procedures for the use of Well No. 3. A copy of these procedures and communications are provided in the appendices.	Appendix W "Well No. 3 DOH Blending Instructions"	
9	Update the information in the Coliform Monitoring Plan, to include the correct sources in operations (S01, S05, S04, and S03). In addition, include any necessary sampling requirements that can result as part of the Groundwater Rule.	Coliform Monitoring Plan has been updated and is included.	Appendix F "Coliform Monitoring Plan"	
10	Provide an outline, policy, or narrative describing the review and submittal process the City will implement for reviewing distribution main projects. Please note, the city must have on staff under contract a Professional Engineer, licensed in the State of Washington, to review any plans for distribution mains waived under this chapter from the DOH review and approval process. The City must also maintain a file with copies of the construction completion reports from any project completed under this waiver.	The City has under contract a Professional Engineer, licensed in the State of Washington, to review any plans for distribution mains and will maintain a file with copies of the construction completion reports from any project completed under this waiver.	Pg. 7-1	
11	A waiver for distribution related projects, such as booster stations, reservoirs, and so on, requires significantly more detail than provided in the plan. Please contact our office if you will be requesting a waiver for more than just distribution mains.	The City is not requesting a waiver for more than just distribution mains.	Pg. 7-1	
ADDITIONAL COMMENT	The Water System must meet the consumer input process noted in WAC 246-290-100(8). Include in the Water System Plan a copy of the meeting notice used to notify the consumer of the meeting and a copy of the signed meeting minutes from that meeting.	Documentation of the meeting notice and a copy of the meeting minutes are provided in the appendices.	Appendix X "Correspondence"	

City of Mabton
Council Meeting Minutes
September 10, 2013

Call to Order

Mayor Vera Zavala called the meeting to order 7:00 p.m.

Pledge of Allegiance & Moment of Silence

Mayor Zavala led the Pledge of Allegiance & the council in a moment of silence.

Roll Call

The following were:

Present: Mayor Vera Zavala and Council persons Oping Hutson, Mario Martinez, Mark Gourneau, Sophia Sotelo and (open position)

Also present: Clerk/Treasurer Ret Stewart, City Attorney Jamie Carmody and Chief Rick Gutierrez

Absent: Fire Chief Luke Cussins

Vote on the Agenda

Mr. Martinez made a motion and Mr. Gourneau seconded it to approve the agenda as presented. The motion carried unanimously.

Mr. Martinez made a motion and Mr. Gourneau seconded it to fill the council member position #5 with Arturo Dela Fuente. The motion carried unanimously. Mr. Martinez made a motion and Mr. Gourneau seconded it to allow Mr. Dela Fuente to continue to fill a position as a volunteer firefighter. The motion carried unanimously.

Consent Agenda

Mr. Martinez made a motion and Mr. Gourneau seconded it to approve the agenda with the following change:

- Approve the claims checks 24870 to 24910 in the amount of $88,687.79 dated September 10, 2013
- Approve the payroll checks 13428 to 13455 in the amount of $37,522.69 dated August 30, 2013 cks 13390 to 13418-void
- Approve the minutes of the study session dated August 27, 2013
- Approve the minutes of the council meeting dated August 27, 2013

The motion carried unanimously.

Citizens Comments NONE

Public Meeting None

Old Business None

New Business

Mr. Martinez made a motion and Mr. Gourneau seconded it to add to the current water system plan the following: 1. Well #6 2. Water rights 3. Water main 4. Reservoir for a total proposed amount of $4,840,000. The motion carried unanimously.

Mr. Martinez made a motion and Mr. Gourneau seconded it to accept the water system plan with the following additions: 1. Well 6 - $1,850,000 2. Reservoir $1,340,000 3. Water rights -$720,000 4. Water mains $930,000 Total - $4,840,000 The motion carried unanimously.

Mr. Carmody staed that he is still talking to the attorneys to transfer the church to the city.

Mr. Morris stated that the CCH still needs to purchase an electric box and have the clock hooked up.

Mrs. Hutson made a motion and Mr. Gourneau to authorize the Mayor to sign the CDBG for $759,000 for the sewer update. The motion carried unanimously.

The council indicated that they will be attending the YVCOG dinner on September 18th.

The 2nd quarter financial results were handed out to the council.

The council was informed that the clerk/treasurer interviews will be held on Friday, September 13th.

There are two more police reserve officers being processed to be a part of the police academy.

Adjournment

Mayor Zavala adjourned the meeting at 7:30 p.m.

Ret Stewart, CMC Clerk/Treasurer

Mayor Vera Zavala

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 E Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
TDD Relay 1-800-833-6388

September 27, 2013

Christopher Morris
City of Mabton
PO Box 655
Mabton, WA 98935

Subject: Mabton, City of; PWS #49650R; Yakima County
Water System Plan; DOH Project # 13-0424; **DOH Approval**

Dear Mr. Morris:

The City of Mabton Water System Plan (WSP) received in this office on April 18, 2013, with revisions submitted on September 19 and September 26, 2013, has been reviewed and in accordance with the provisions of WAC 246-290-100, is hereby **APPROVED.**

An approved update of this WSP is required **on or before September 27, 2019,** unless the Department of Health (DOH) requests an update or plan amendment pursuant to WAC 246-290-100(9). Approval of this WSP is valid as it relates to current standards outlined in Washington Administrative Code (WAC) 246-290 revised November 2010, WAC 246-293 revised September 1997, and RCW 70.116, and is subject to the qualifications herein. Future revisions in the rules and statutes may be more stringent and require facility modification or corrective action.

The WSP estimates water usage for single-family residential connections, equated to Equivalent Residential Units (ERUs), to be an average day demand (ADD) of 323 gallons per day and a maximum day demand (MDD) of 679 gallons per day. According to the updated WFI the water system currently serves 671 total connections. Using information in Worksheet 6-1, these connections and Distribution System Leakage (DSL) or non-revenue water equate to a total water usage equivalent to 1,105 ERUs.

This WSP includes capacity information (based on assumed capacity for well #4 of 200 gpm) that demonstrates the physical and legal ability of this water system to provide water during the six-year period for which the approval of the WSP is valid. Based on the analysis presented in the WSP, the limiting factor in determining the approved number of connections (when well #4 source capacity is confirmed at 200 gpm or greater) will be water rights Qa. When the system

notifies DOH in writing that the necessary repairs have been made to well #4 and source capacity has been confirmed to be 200 gpm or greater, the approved number of connections that will be reflected on the Water Facilities Inventory (WFI) form will be 815.

Currently DOH will base approved connections on the capacity of the system without the benefit of well #4 source capacity **and therefore the approved number of connections that will be reflected on the Water Facility Inventory form is the existing number of connections, 671**

The City of Mabton is responsible for permitting new service connections in a manner consistent with the water system plan so that the physical capacity and water right limitations are not exceeded. As new water services are requested, the City of Mabton must evaluate each connection for the expected water demands and adjust the remaining connection allowance. The water system should keep an updated list that compares the overall ERUs expended against the overall number of connections placed into service. This will allow a better estimate of the system's adequacy.

This approval does not provide any guarantee and should not be considered to provide any guarantee concerning legal use of water or any subsequent water right decisions by the Department of Ecology. The Department of Ecology did not issue a comment letter regarding your water rights. This approval does not affect any uncertainties regarding your water rights or the resolution of those uncertainties. Depending on the resolution of the uncertainties, further planning and/or other action may be necessary.

Pursuant to RCW 90.03.386(2), the "Retail Service Area/Future Service Area/Water Rights Place of Use" identified on Figure 1-4 *City Limits, UGA, Service Areas* map in the WSP now represents "place of use" for this system's water rights. Future changes in service area should be made through a WSP amendment.

The City of Mabton has a duty to provide new water service within its retail service area. This WSP includes service policies to describe how your system plans to provide new service within your retail service area.

Submittal of the WSP included local government consistency determinations from the City of Mabton and Yakima County. This WSP meets local government consistency requirements for WSP approval pursuant to RCW 43.20 for these entities.

Standard Construction Specifications for distribution main extensions in this WSP are approved. Consistent with WAC 246-290-125(2), this system may proceed with the installation of distribution main extensions provided this system completes and keeps on file the enclosed construction completion report form in accordance with WAC 246-290-125(2) and WAC 246-290-120(5) and makes it available for review upon request by DOH.

The City of Mabton is located within the Lower Yakima Watershed (WRIA # 37). Ecology has not determined whether the WSP was not inconsistent with an approved watershed plan. DOH encourages the water system to contact Ecology regarding this matter.

Thank you for your cooperation. DOH recognizes the significant effort and resource commitment involved in the preparation of this WSP. If you have questions or wish to check our records, please contact either of us at (509) 329-2120 or (509) 329-2121, respectively.

Sincerely,

Andres Cervantes, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Public Health

Heather Cannon
Regional Planner
Office of Drinking Water
Division of Environmental Public Health

Enclosures: Construction Completion Report

cc: Yakima Health District
Yakima County Planning Department
Jim Bricel, PE, Gray & Osborne Inc, Yakima
Sage Park, Department of Ecology, Eastern Regional Office
George Simon, DOH Compliance Manager
Katrina Anderson, DOH WFI Coordinator

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

October 1, 2013

Christopher Morris
City of Mabton
PO Box 655
Mabton WA 98935-0655

Heather Cannon
Department of Health
16201 E Indiana Avenue, Suite 1500
Spokane Valley WA 99216-2836

Subject: City of Mabton, Water System Plan Review, March 2013

Thank you for the opportunity to review the draft Water System Plan (WSP) for the City of Mabton. Based on my review:

- The WSP is "not inconsistent" with an approved watershed plan adopted under 90.82 RCW or 90.54 RCW.

- Based on my review, I have the following comments on the Water Rights Self-Assessment, Table 4-6:
  - The individual rights listed do agree with Ecology's records.
  - The instantaneous flow rates (Qi) are additive.
  - Also, the 2 acre-feet/year in G3-00381C is additive to the 452.4 acre-feet/year from G3-00027C and G4-29212C. This would give the city a total maximum volume of 454.4 acre-feet/year for all 3 water rights.

- Ecology agrees that the flow meter for Pump 4 should be replaced in order to provide more reliable water use data.

- The water needs for the projected growth in 20 years are greater than the city's current supply. The city should pursue acquiring additional water to address projected future growth.

Please contact me if you have any questions at (509) 457-7112.

Sincerely,

David Holland,
Environmental Planner
Department of Ecology
Central Regional Office

DH:hd
130912

cc: Sage Park, Permitting Unit Supervisor