

Minnesota Well Management News



A Minnesota Department of Health Publication

Minnesota Well Management News

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New Fee Schedule – Effective July 1, 2017

On May 30, 2017, Governor Mark Dayton signed into law new legislation that increases some fees charged by the Minnesota Department of Health (MDH) Well Management Section. The fee increases will cover increased program costs. The new state fees do not apply in jurisdictions where administration of the well program has been delegated to a local government, where the fees are established by the delegated program. Individuals should check with the delegated program for their fee structure and other administrative requirements. The new fees are as follows and went into effect on July 1, 2017:

Well Construction Notifications

Water-Supply Well	\$275
Dewatering Well	\$275
Dewatering Well Site (5 or more)	\$1,375
Environmental Well	\$275
Environmental Well Site	\$275
Exploratory Boring	\$275

Construction Permits

Bored Geothermal Heat Exchanger	
< 10 Tons	\$275
10 Tons to 50 Tons	\$515
> 50 Tons	\$740
Elevator Boring	\$275
Groundwater Thermal Exchange Device	\$275

Maintenance Permits

Environmental Well	\$175
Environmental Well site	\$175
Environmental Well (Government only)	\$0

Well Sealing Notifications

Well Sealing	\$75
Temporary Environmental Well Site	\$75

Other

Variance Application	\$275
Explorer Responsible Individual Certification	\$75

Other fees, not listed here, have not changed. Visit [Fees Well Management Program](http://www.health.state.mn.us/divs/eh/wells/feesched.html) (www.health.state.mn.us/divs/eh/wells/feesched.html) for a complete list.

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Legislative Updates to Minnesota Statutes, Chapter 103I

Early in this year's legislative session, Governor Dayton proposed legislative changes to the wells and borings statutes including adjustments in fees (see Minnesota Well Management News, newsletter, Fall 2016/Winter 2017 issue). Throughout the entire regular session, the proposed wells legislation was not heard by either the House or Senate and it appeared that the changes were not going to happen this year. However, during the special session, immediately following the regular session, the well fee and policy changes were added to the Health and Human Services Omnibus Bill which was ultimately passed by the Legislature and signed into law by Governor Dayton on May 30, 2017. The new legislation went into effect on July 1, 2017. The changes include changes to some license categories, increases to many of the fees, and combining monitoring wells, environmental bore holes, and remedial wells into a new category called environmental wells. Below is a summary of the legislative changes.

Changes to Licensing

The new legislation will place a \$225 cap on the certification fee for representatives of limited well/boring contractors who hold more than three certifications. It will also require that the certified individual overseeing exploratory borings annually renew their certification and pay a \$75 fee to be consistent with all other certified individuals. It also establishes a \$275 notification fee for construction of exploratory borings consistent with other well notification fees. The dug well/drive-point and individual licenses will be eliminated. Persons with a current individual well contractor license will be converted to a full well contractor certification at license renewal for 2018. The pump license will be combined with the pitless/screen license. Current licensees with either a pump license or pitless/screen license will be issued a combined license at license renewal.

Environmental Wells

Monitoring wells, environmental bore holes, and remedial wells will be combined into a single "environmental well" category and will require a notification instead of a permit in order to be consistent with most other wells.

The new "Environmental Well" means an excavation 15 or more feet in depth that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed to:

1. conduct physical, chemical, or biological testing of groundwater, and includes a groundwater quality monitoring or sampling well;
2. lower groundwater level to control or remove contamination in groundwater and includes a remedial well and excludes horizontal trenches; or
3. monitor or measure physical, chemical, radiological, or biological parameters of the earth and earth fluids, or for vapor recovery or venting systems.

Environmental wells include bore holes meeting the above definition, regardless of whether or not water or a confining layer is encountered.

The changes also broadened the definition of a site for environmental wells to a property with the same property owner. Prior to July 1, 2017, payment of a single site fee for construction of multiple monitoring wells was limited to a motor fuel retail outlet, petroleum bulk storage site, and an agricultural chemical facility. The new law allows multiple environmental wells to be constructed on the same property for a single notification fee, regardless of property use. A temporary environmental

well, which means an environmental well that will be sealed within 72 hours of construction, will require a sealing notification fee and sealing record, but not a construction notification fee or a construction record. The monitoring well maintenance permit fee charged to governmental agencies will be eliminated, although government agencies will still be charged for construction and sealing notifications. Environmental wells will be subject to the current relevant rule requirements for monitoring wells and environmental bore holes until new rules are promulgated.

Most of the changes went into effect on July 1, 2017. There were a few other minor wording changes as well. The actual bill can be found at the [Minnesota Office of the Revisor 2017 Minnesota Session Laws](https://www.revisor.mn.gov/laws/?year=2017&type=1&doctype=Chapter&id=6) (<https://www.revisor.mn.gov/laws/?year=2017&type=1&doctype=Chapter&id=6>).

To learn more about environmental wells, including construction and sealing notification and reporting requirements, allowances for site fees, and maintenance permits, please visit [Environmental Well Construction Notifications and Maintenance Permits](http://www.health.state.mn.us/divs/eh/wells/lwcinfo/ewnotification.html) (<http://www.health.state.mn.us/divs/eh/wells/lwcinfo/ewnotification.html>).

A flow chart has been created to answer questions about environmental wells entitled [Identifying Environmental Wells and Determining Administrative Requirements](http://www.health.state.mn.us/divs/eh/wells/lwcinfo/ewadminreq.pdf) (<http://www.health.state.mn.us/divs/eh/wells/lwcinfo/ewadminreq.pdf>).

High Lead in Private, Shared Drinking Water System, Scandia, Minnesota

In 2016, Ms. Jutta and Mr. Jerry Anderson, who live in Scandia, Minnesota, were concerned about their drinking water quality and took the initiative to collect water samples at their home and have them tested for lead. To their surprise, they found high levels of lead, above the recommended health limit of 15 micrograms per liter ($\mu\text{g/L}$), in their drinking water. Their home, and eight other homes on their cul de sac are served by a shared water-supply well that was constructed in 2001. Because there are less than 15 homes connected to the well, it is regulated as a private well. Consequently, all testing and maintenance is the responsibility of the residents using the well. After learning of the high lead levels, the Andersons also collected water samples from faucets in the well house down the street, and had them tested for lead. High lead levels, as high as 48.64 $\mu\text{g/L}$, were detected at the well house.

The Andersons were concerned for the health of their family, especially children and grandchildren, and all of the other families who were connected to the well and who had been drinking the water since 2001. *Lead is a toxic heavy metal that can be harmful to children, infants, and developing fetuses as it can cause behavior and learning problems; lower IQ and hyperactivity; slowed growth, hearing problems, and anemia. Lead is also a concern for pregnant woman as it can cross the placental barrier and cause reduced growth of the fetus and premature birth. In adults, lead can cause cardiovascular effects, decreased kidney function, and reproductive problems.*

The Andersons contacted Patrick Sarafolean, district hydrologist with the Minnesota Department of Health (MDH) Well Management Section to report the problem and request assistance in determining the source of the lead and for assistance in correcting the problem.

MDH responded by first recommending that until the source of the lead could be identified and corrected, residents should minimize their exposure to lead in their drinking water by pursuing remedy options including, but not limited to, use of an alternate safe source of water; removal of old plumbing

fittings containing lead and replacement with new “lead-free” plumbing fittings; installation of a water treatment device to remove lead; and/or flushing of stagnant water from the plumbing distribution system before consumption of water. Then, MDH collected *first draw* water samples (at 4 a.m.), from three separate faucets at the well house, and had them tested at the MDH environmental laboratory. Lab results confirmed high lead levels, as high as 36.7 µg/L. The sample results were reported to the homeowner’s association along with the recommendation that a new, “lead-free” faucet be installed



Well and new lead-free plumbing in well house in Scandia, Minnesota. First draw water samples collected for lead analysis by MDH at 4 a.m.

directly on the wellhead, so that water coming directly from the well could be tested to determine if the lead was coming from the well, or if it was leaching out of plumbing fittings downstream from the well. The homeowner’s association immediately hired a licensed plumber to install a lead free faucet on the well head. MDH returned and collected a “first-draw” sample from the new “lead-free” faucet on top of the well. The results showed little to no lead coming from the well. After confirming that the source of the lead was not the aquifer or the submersible pump and piping in the well, MDH recommended that all lead-containing brass valves, faucets, and fittings in the well house, which dated back to 2001, be replaced with new, “lead-free” valves faucets and fittings. The Andersons were instrumental in convincing the homeowner’s association to move forward and hire a licensed plumber to make the recommended changes.

MDH returned and collected first-draw water samples after the new lead-free faucets were installed in the well house. The lab results were acceptable, with all results below the recommended health limit for lead. The Andersons have since had lead-containing plumbing fittings removed from their home and have had them replaced with new “lead free” fittings. They have also installed a new “lead-free” kitchen faucet, as this is the faucet from which they obtain most of their drinking water.

The Andersons and their homeowner’s association are commended for their efforts in collecting water samples, identifying a serious water quality problem that affected the families who shared the well, and for taking action to modify the plumbing system to correct the problem and prevent further consumption of water with high lead levels. This case highlights the need for lead testing in water systems built before 2014, as these water systems may contain plumbing fittings, pipe, and fixtures with high levels of lead, which under the right conditions, can allow lead to leach into the drinking water.

(The Federal Reduction of Lead in Drinking Water Act requires that most pipe, plumbing fittings, and fixtures installed in potable water-supply systems after January 2014 must contain no more than 0.25 percent lead. Prior to the effective date of this law, lead fittings could contain up to 8 percent lead.)

Gold Exploration in Northern Minnesota

During the winter of 2016/2017, exploration for gold in northern Minnesota heated up. Two exploration companies drilled exploratory borings in attempts to find gold. Anglo Gold Ashanti, conducted exploratory drilling on approximately 31 different sites in southeast Koochiching County, approximately 20 miles northwest of Cook, Minnesota, and Vermillion Gold drilled borings near Virginia, Minnesota, and in northwestern St. Louis County. Mr. Scott Longanecker, Minnesota Department of Health Well Standard Representative, was on drilling sites with both companies this past winter. Scott reported that rota-sonic drilling rigs, which rotate and vibrate a drill casing into the earth, were used to drill 6-inch diameter borings and collect core samples from the glacial drift formation. Borings ranged in depth from 50 to 100 feet. Core samples were sent off site for analysis for gold content by geologists. Scott reported that, "Most of the borings were sealed with bentonite grout, and that one boring encountered artesian conditions with water flowing at approximately 70 gallons per minute." The flowing boring was permanently sealed with neat-cement grout.



Rota-sonic rig drilling exploratory boring to search for gold in Koochiching County, Minnesota, 2017.

In April 2017, the Minnesota Department of Natural Resources issued this updated report [DNR Open-File Project 392: Regional Survey of Gold in Till, Cook Area, St. Louis County](http://www.dnr.state.mn.us/lands_minerals/mpes_projects/project392.html) (http://www.dnr.state.mn.us/lands_minerals/mpes_projects/project392.html). The report updates the findings of a DNR investigation that began in 2012. The investigation looked at gold content in pebbles collected from Rainy Lobe glacial till that lies on top of Archean granite-greenstone bedrock, between the towns of Cook and Tower, Minnesota. The study area lies within a much larger (200 square mile area) that historically has been explored and studied for the presence of gold and base metals. It is believed that high gold grain counts could lead to finding gold in underlying bedrock.

Minnesota Department of Health has a New Logo!



You might have noticed a change in the Well Management Section website recently. The Minnesota Department of Health (MDH) has a new logo! The goal of the new logo is for MDH to be consistent with other Minnesota state agencies. The new logo has already been added to many permit applications and other forms available for download from the Well Management Section website. The logo will be incorporated into the remainder of our documents and publications as they come up for revision.

Survey Reveals that One Third of Private Well Owners in Minnesota, with High Arsenic Levels in Their Well Water, Took no Action to Reduce Arsenic Exposure

Eleven percent of private wells in Minnesota are estimated to exceed the arsenic Maximum Contaminant Level (MCL) of 10 micrograms per liter ($\mu\text{g}/\text{L}$) (which is equivalent to 10 parts per billion). Consuming arsenic-contaminated water can increase a person's risk of cancer and other serious health effects.

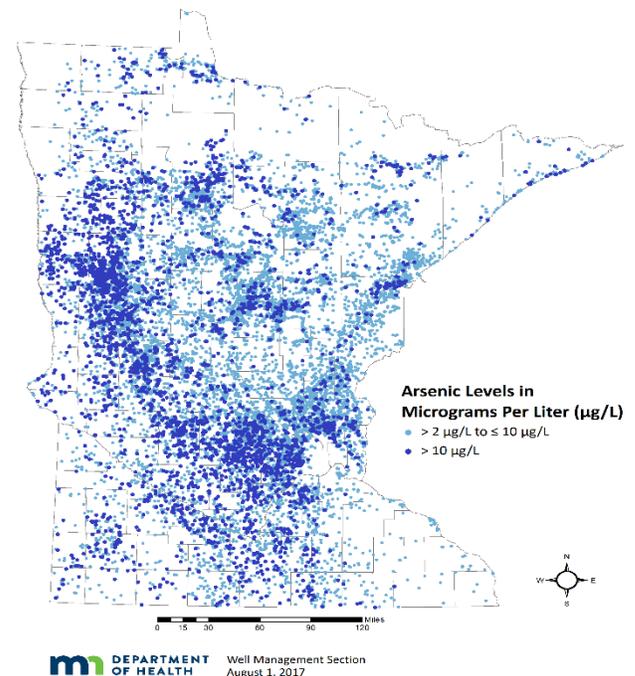
About the Survey

Since August 4, 2008, Minnesota regulations have required that all new wells be tested for arsenic before placing them into service. Since then, the Minnesota Department of Health (MDH) has sent letters, lab reports, and informational brochures about arsenic in drinking water to homeowners who had arsenic detected in their newly constructed wells. In September 2016, MDH sent a survey to all owners of new wells constructed since 2008, that had arsenic detected above 10 $\mu\text{g}/\text{L}$ (the Safe Drinking Water Act Maximum Contaminant Level [MCL]), to find out if they took any action to protect their household from exposure to arsenic. The survey was mailed to 3,815 households and 798 households participated in the survey. Approximately one-third (225) of the participating households reported that they did not take action to reduce their exposure to arsenic in their drinking water.

The survey covered other topics including general well testing behaviors, perceptions about risk, barriers to testing and treatment, and preferences for receiving information, test kits, and results. Survey responses highlight various barriers and challenges that prevent or discourage well users from testing and treating their water. Age, education, and income level were found to be important factors in determining which well users took action to reduce their risk. The results also demonstrate that well contractors, laboratories, local government, extension services, and water treatment companies play an important role in helping well users protect their health.

The most common reasons cited by well owners, for not taking action to reduce their exposure to arsenic, were lack of concern about the arsenic level (33 percent), not knowing what to do or who to contact (19 percent), and the cost of water treatment options (14 percent). Some survey respondents shared that they did not take any action to reduce their arsenic exposure based on advice from a well contractor.

Total Arsenic Concentrations in New Private Residential Wells (2008-2017)



Each arsenic sample was collected at the time of well construction. Each dot represents a single well. Wells with arsenic levels of 2 $\mu\text{g}/\text{L}$ or less are not shown on this map.

As a result, MDH is working to modify arsenic result communications for well users to more clearly describe arsenic health risks, and to provide better guidance to help well users understand options to minimize exposure to arsenic. MDH will also provide information to well contractors through continuing education, to ensure they have accurate information to share with private well owners, about contaminants in drinking water.

The survey revealed that respondents look not only to MDH for information to help them manage the safety and quality of their well water, but also to a number of other outlets including water testing laboratories, local/county governments, well drilling companies, university or county extension services, and water treatment companies.

The diverse list of outlets where private well owners look for information regarding their well emphasizes the importance of using a variety of approaches to provide consistent and accurate information to private well users. The Well Management Section has recently developed a Private Well Education Team. This team is using the results from the 2016 survey to improve outreach to private well users. A part of that outreach includes working with water testing laboratories, local/county government, well contractors, extensions services, and water treatment companies to support their work with private well owners and help ensure they have the information they need to address questions about private wells and water quality. **If you have ideas about how MDH can better support communications with private well users, please contact Ms. Frieda von Qualen at MDH at 651-201-4547 or frieda.vonqualen@state.mn.us. For more information about the survey, contact Ms. Deanna Scher at MDH at 651-201-4922 or deanna.scher@state.mn.us.**

Well Management Section Now Issuing “Corrective Orders” for Noncompliance

The Minnesota Department of Health (MDH) is now issuing Correction Orders (CO) instead of Notices of Violation (NOV) for violations of Minnesota Statutes, chapter 103I and Minnesota Rules, chapter 4725 (the well code). This change is the result of an evaluation of the enforcement process conducted by Well Management Program staff and was made to ensure that the enforcement tools that the Well Management Program uses are consistent with Minnesota Statutes, section 144.99 and with other MDH programs governed under this statute. There will not be changes to the use of Administrative Penalty Orders or other enforcement actions used under Minnesota Statutes, chapters 144 or 103I.

The CO will be used in cases where a violation has occurred and been verified by MDH staff. When a violation is corrected before a CO is issued, a CO will still be issued to document the violation much the same way as an NOV was used in the past. This will not fundamentally affect how or when enforcement is done, but rather how it is documented and communicated to the regulated party.

Please feel free to contact Mr. Chris Elvrum at 651-201-4598 or chris.elvrum@state.mn.us if you have any questions or comments.

Well Construction and Well Sealing Totals in Minnesota

Over the last 20 years, the highest number of wells constructed in Minnesota during a calendar year was 14,306 in 2003. *The fewest number of wells constructed during the same time period was 5,510 in 2010 and again in 2011.* The highest number of wells permanently sealed in Minnesota during one calendar year, over the past 20 years, was 14,027 in 1998. *The fewest number of wells permanently sealed in Minnesota during the same time period was 7,256 in 2016.* The table below lists the number of wells constructed and permanently sealed in Minnesota for each year indicated.

Year	Number of Wells Constructed in Minnesota	Number of Wells Sealed in Minnesota
2016	6,455	7,256
2015	6,833	7,646
2014	6,199	7,394
2013	6,718	7,771
2012	6,660	8,399
2011	5,510	7,513
2010	5,510	7,347
2009	5,970	8,263
2008	7,493	8,560
2007	9,904	10,252
*2000	13,532	12,792
*1990	11,341	7,722

The following tables list the top five counties in Minnesota for well construction and permanent well sealing totals in Minnesota for 2016.

County Name	Number of Wells Constructed in 2016
Crow Wing	413
Otter Tail	398
Cass	318
St. Louis	315
Anoka	280

County Name	Number of Wells Sealed in 2016
Hennepin	1,329
Ramsey	420
Anoka	330
St. Louis	270
Otter Tail	258

Vacancies Filled on Advisory Council on Wells and Borings

On June 6, 2017, Minnesota Department of Health (MDH) Commissioner Edward Ehlinger, M.D., M.S.P.H., appointed two new members to the Advisory Council on Wells and Borings: Mr. Bruce Johnson of Summit Envirosolutions, Inc. and Mr. Daniel Gibbs of Geothermal Eco Options, Inc. On June 20, 2017, Minnesota Board of Water and Soil Resources (BWSR) executive director Mr. John Jaschke appointed Ms. Annie Felix-Gerth as the BWSR member on the council.

The current membership of the council is as follows:

Well Contractors

David Henrich
Bergerson-Caswell, Inc., Maple Plain, MN

Dennis Koepp
Denny's Drilling, Inc., Saginaw, MN

Troy Kuck
Searles Well Drilling, Inc., New Ulm, MN

Danny Nubbe
Mineral Service Plus, LLC, Green Isle, MN

Haden Shipman
Antonsen Well Drilling, Inc., Dent, MN

Mark Thein
Thein Well Rochester, Inc., Rochester, MN

Elevator Boring Contractor

Brian Stangret
Midwest Elevator and Drilling, Inc., Waconia, MN

Explorer

Daniel England, P.G.
Eveleth Fee Office, Eveleth, MN

Environmental Well Contractor

Bruce Johnson
Summit Envirosolutions, Inc., St. Paul, MN

Bored Geothermal Heat Exchanger Contractor

Daniel Gibbs
Geothermal Eco Options, Inc., Decorah, IA

Public Members

Roy Forsstrom
Bloomington, MN

David Kill, P.E.
Shoreview, MN

State Agency Members

Annie Felix-Gerth
MN Board of Water and Soil Resources

Chris Elvrum, P.G.
MN Department of Health

Michael Liljegren
MN Department of Natural Resources

Richard Lamb, P.E.
MN Department of Transportation

Bruce Bloomgren
MN Geological Survey

Vacant
MN Pollution Control Agency

The 18-member council advises the commissioner and the department on issues regarding the regulation of wells and borings. The council assists in the examination of well contractor license applicants; makes recommendations on Well Management Section policies, rulemaking, and statutory initiatives; and provides technical review and information to the section. The council also provides a forum for all well and boring contractors to raise industry concerns.

New Contractor Certifications

Pump, Pitless, and Screen Contractor

Darren Syljuberget
American Water Well Company, LLC
Tenstrike, Minnesota

Parker Torkelson
Torkelson Well Service
Nevis, Minnesota

Well Sealing Contractor

Darren Syljuberget
American Water Well Company, LLC
Tenstrike, Minnesota

Bored Geothermal Heat Exchanger Contractor

Eric Jones
Green Energy Solutions, Inc.
Elkton, South Dakota

Well Contractor

Justin Klimek
Klimek Bros. Well Drilling, Inc.
Alexandria, Minnesota

Ryan Marcus
Marcus Well Drilling, Inc.
Renville, Minnesota

Explorer Responsible Individual

Trevor Burr
AngloGold Ashanti Minnesota
Wheat Ridge, Colorado

Dean Debeltz
DMC USA LLC
Franconia Minerals US LLC
Twin Metals Minnesota, LLC
Ely, Minnesota

James Devine
DMC USA LLC
Franconia Minerals US LLC
Twin Metals Minnesota, LLC
Ely, Minnesota

Nicole Hoffmann
DMC USA LLC
Franconia Minerals US LLC
Twin Metals Minnesota, LLC
Ely, Minnesota

Environmental Well Contractor

Dean Wysuph
Northern Technologies, LLC
Waubun, Minnesota

Note: This new Contractor Certifications list is current as of July 25, 2017.

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To request this document in another format, call 651-201-4600.

Reprinting of articles in this newsletter is encouraged.

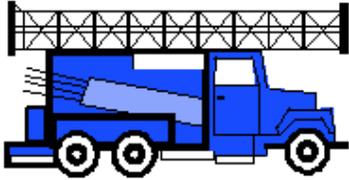
Please give credit to the Minnesota Department of Health or noted source.

Continuing Education Calendar

The Internet link to the Minnesota Department of Health (MDH), Well Management Section's, [Continuing Education Programs](http://www.health.state.mn.us/divs/eh/wells/lwcinfo/training.html) (www.health.state.mn.us/divs/eh/wells/lwcinfo/training.html).

This calendar lists the upcoming continuing education courses that have been approved for renewal of certification for representatives of Minnesota licensed well and boring contractors. The calendar also lists the number of credits available for each course. The calendar is updated monthly and, if you subscribe, you will be notified by email when this page changes (new classes added, changes to existing classes).

For additional information about any of these training opportunities, call the contact person listed for the program of interest. For general information about continuing education, more current CEU listings, or to request approval for other continuing education activities not listed, contact Norm Mofjeld, MDH, Well Management Section at 651-201-4593, or norman.mofjeld@state.mn.us.



Minnesota Well Management News

Obituary

Charles “Bob” Morrison, age 99, of Freeborn, Minnesota, passed away on Monday April 3, 2017.

Bob was the former owner and operator of Morrison Well Company in Freeborn, Minnesota. He got his start in farming, then during World War II he took a wartime appointment with the Department of Interior at the Pine Ridge Indian Reservation in South Dakota where he ran the government dairy farm. After the war he returned to Freeborn and worked at a hardware and equipment store. He eventually bought the business and started selling pumps. Many of his customers needed new wells, so he went to school to learn how to drill wells, bought a rig, and drilled his first of many wells in the Indian Hills neighborhood in Albert Lea, Minnesota. Bob started Morrison Well Drilling Company in 1948. Even into his late 90s, Bob would go to Freeborn every day to pick up mail, stop for coffee, and go to his well drilling shop by 9 a.m. He also loved to have lunch and play cards with the guys in the afternoon. Bob remained active in his well drilling company until 2016. Bob’s sons Dennis and Doug continue to operate Morrison Well Company in Freeborn, Minnesota.

Charles “Bob” Morrison (<http://www.albertleatribune.com/2017/04/charles-morrison-1917-2017/>)