

Water Use Advisory Council 2020

Data Committee

Well Driller Trainings for Increased Data and Well Registration Clarifications

9/9/2020 – Draft as reported out of Data Committee

#1. MGS AND MGWA LITHOLOGIC TRAINING PROGRAM

Background. Wellogic is the largest and longest functioning database for all data compiled during the drilling of water wells. This database is maintained by the State of Michigan, but data submitted is provided by the entities drilling the water wells. The data from this database is used by the large-quantity water withdrawal assessment program. The driller of water wells must input the primary data into the Wellogic Database in a prescribed format. Well drillers are not trained geologists and their primary goal is to find water for their client, not to describe the lithology of the subsurface materials encountered while drilling. Through time, Wellogic had used over 5,000 terms, but has been reduced to ~180 terms currently. In 2003, at the onset of electronic reporting, well drillers were instructed to input data correctly, but no formal training to standardize how the subsurface sediments would be described by the driller and then input to Wellogic was provided. Further, there was no department or automated verification and validation of the data entered into the database, specifically the location of the well. In 2018 the well location began to be validated, however there is still no validation of the other critical data input to Wellogic. In 2019-20, MGS proposed and obtained an EGLE contract to correct the Wellogic locations and as of August 1, 2010, over 70,000 Wellogic locations have been validated or input. Over 35% of the wells have been corrected because they were not on the correct property, section or township. That means they were up to and over a mile to six plus miles away from the correct location. Note, there are some counties that 50 to 80% of the wells have Wellogic data errors.

Starting in 2014- 2015, MGS and the MGWA discussed and initiated a program of trainings, which would aid in well drillers improving the standardization of how they identified and entered data on the subsurface sediments encountered during drilling, to improve the information quality and utilization of data being entered into Wellogic. With this database being the primary source of data useable for various purposes, the accuracy and reliability of data entered is of utmost importance, and really represents a cost-effective approach to increase geology data in the state (as compared with collecting new data from separate efforts). Accurately knowing the extents of sand/gravel as opposed to clay/silt is critical to understanding how groundwater and surface waters interact in Michigan. Providing the proposed trainings annually, is supported by the well drilling community, via the MGWA.

Findings/ Recommendations:

The WUAC endorses the Michigan Geological Survey and Michigan Groundwater Association training program for drillers and the county health departments. A standardized training program will provide all trainees and experienced drillers a program to better understand what is being presented and the value of quality standardized data to support decisions related to groundwater and to input valid quality data to the subsurface Wellogic database. MGWA has an annual meeting in the Spring (February or March) and MGS and MGWA will continue to provide this lithologic and document training to the new driller community and the local health department staff. MGS and MGWA support having the EGLE Community water division (Wellogic) and also the Water Resource Division (WRD) High Capacity Wells present and provide emphasis on quality and timely data entry. This lithologic (geology) training

program as proposed would allow standardized training to the regional MGWA drillers to have a local two to three hour training program at their winter regional quarterly meetings. These meetings would be January to March, while many drilling functions are slow during the winter, and spring drilling period allows free movement of drill rigs along county roads. This would be for four to six training sessions and would allow MGS to load 2000 to 3000 pounds of core samples and bring them to a location. These trainings would provide presentations, physical sample descriptions training and review and have EGLE Community water division (Wellogic) and Water Resource Division (WRD) the Mi- WWAT team present the benefits of timely input of quality data to Wellogic. It must be emphasized some of the data entry to Wellogic is the responsibility of the applicant to submit the correct data in a timely fashion. This is NOT the drillers responsibility and much of this data entry for High Capacity wells has evolved and the applicant needs to know it is their responsibility (see the following recommendation).

Investment Proposed: \$1,800 per year for 2 years

Four to six, one day training sessions each year for the next two years (suggested locations Traverse City, Alpena, Saginaw/Midland, Grand Rapids, Mount Pleasant, Lansing).

- MGS rents van or truck to haul 2000 to 3000 pounds of drill core samples to the training location. (\$100/day)
- Students to support the set-up, layout for sample description training with rebox/take down. (\$100/day)
- Incidental costs for travel for student and staff (\$100/day).
- This estimate would provide samples and for MGS to fund a student to assist in the training and travel.
- Estimate \$300 per training session at six per year is \$1800 per year for two years (\$3600).
- EGLE staff time for participation, provided as part of existing core staffing support and programs.

#2. High Capacity wells data entry and time frame to complete

Background.

The WUAC identified data entry to the High Capacity Wellogic records were routinely not being completed correctly or in the required timeframe. The completed Wellogic/HC form is needed to complete the application for the HC well. The WUAC Data Committee established a sub-committee to review the High Capacity well records and to prepare a summary document defining who and what needs to be inserted in the Wellogic well records and who is responsible and time frame to complete. The subcommittee was comprised of: John Yellich, Director, Michigan Geological Survey; Jim Milne, Water Resource Division, with assistance and review from Andy LeBaron & Hannah Arnett; Anita Ladouceur, Water Division- Wellogic, Buddy Sebastien, Sebastien and Sons Well drilling and President Michigan Groundwater Association and Laura Campbell, Manager, Agricultural Ecology Department Michigan Farm Bureau.

Findings/Recommendations:

The application and data entry for High Capacity (HC) wells is the responsibility of the permit applicant, i.e., the owner of the well. Accurate data entry can be done by irrigation providers, well drillers, consultants or the owner, however the final data entry and submittal of the completed form is the sole responsibility of the applicant. The following draft letter was developed and agreed upon, and is planned to be distributed in newsletters from the Farm Bureau, Irrigation providers, Well drilling Association, local Farming associations to make certain the applicant understands they are responsible and they can contract for or request others to input the data, but the final submittal is the applicant's responsibility. If not, they can be subject to fines and denials of the application. This letter, and its distribution, is intended to help clarify the responsibilities for completed well registrations, to reduce non-compliance, and to reduce the need and expenses of agency compliance follow ups regarding these completed registrations.

Investment Proposed: none.

Letter (to be included, or as appendix)

What Property Owners Need to Know About High-Capacity Wells

The review of the Water Withdrawals Assessment program has shown that there are many data gaps in the submitted information and any of these can cause you to have your application delayed or possibly denied. The high capacity water well regulations require the applicant to submit all the documentation and well completion records accurately and within the required timeframes. Presented below is a summary of some questions and responses that can assist you in successfully completing the application process.

What is a High-Capacity Well? Part 317, Aquifer Protection and Dispute Resolution, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) defines a high-capacity well as one or more water wells that, in total, have the capacity of withdrawing 100,000 or more gallons per day (gpd) in one day. Part 327, Great Lakes Preservation, of the NREPA has a related definition of a large quantity withdrawal (LQW), one or more cumulative total withdrawals of over 100,000 gpd averaged over any 30-day period. A daily pumping rate of 100,000 gpd equates to a continuous pumping rate of 70 gallons per minute (gpm).

What do EGLE and the well driller use as the pump capacity? To determine whether a well is regulated as a high-capacity well under Part 317 of the NREPA or as an LQW under Part 327 of the NREPA, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) uses the manufacturer's rated pump capacity (in gpm) that the well driller lists on the well log. See the example well log in Figure 1.

Do I need to register my high-capacity well? If you are installing a new well (either a new well or replacing an existing well) or are increasing the pump capacity of an existing well by 70 gpm or more, you must get authorization under Part 327 of the NREPA.

How do I register my well under Part 327? You, the applicant, (property owner) are required to register your well using the on-line Water Withdrawal Assessment Tool (WWAT; <http://www.egle.state.mi.us/wwat>). Your authorized representative (e.g., employee, well driller, consultant, agricultural irrigation equipment supplier, agricultural extension service agent) can and should assist you in this process to insert accurate information regarding flow, well casing depths, type of well such as bedrock or glacier drift well, and the location of the well. If you pass the WWAT, click on the link on the WWAT's results page to create a registration receipt for your records. If you do not pass the WWAT, your well must be authorized by either a site-specific review (SSR) or an alternative analysis under MCL 324.32706c before the well can be put into operation. There is a link to request an SSR on the WWAT's results page. Please be aware that your well's registration (through the WWAT, an SSR, or an alternative analysis under MCL 324.32706c) must be put into operation (i.e., installing the well and the pump) within 18 months of the well's registration date or the registration expires and you must obtain a new authorization under Part 327.

Good communication with your well driller is essential – If the information you register is wrong, this violates the statute and your permit will not be valid until the permit matches the well information, pump information and the correct location of the well. This is very important for your registration to be valid!

When you meet with your well driller to discuss your water supply needs be sure to provide him or her with a copy of your LQW registration receipt if you or your authorized representative already registered your well. If you haven't registered your well yet, discuss whether you, your driller, or some other authorized representative is going to register the well once it's been drilled. Those discussions should include whether the driller is going to install a pump in the well or whether you or someone else is going to install the pump later.

What should I do if the well is installed differently than it was originally registered? Your well may end up being installed differently than it was originally registered for a variety of reasons. The well's location may have changed. Your driller may install the well screen or the casing is set at a different depth to provide the best water yield. Your driller, or someone else later, may install a pump with a different rated pump capacity. All of these changes require you to submit an accurate change to your application.

If you have made any of these changes, Part 327 requires that the property owner rerun the WWAT and notify EGLE of the results [MCL 324.32706b (5)] and that the property owner notify EGLE if the well was registered through an SSR or alternative analysis [MCL 324.32706c (10)]. These notification requirements also apply if your pumping schedule changes from your original registration. The purpose of these requirements is to allow EGLE the opportunity to verify that the changes as installed and as operated characteristics for your well are not going to create an adverse resource impact to fish populations or stream flow. EGLE also needs to know your well's as installed and as operated characteristics so that EGLE can accurately keep track of the projected cumulative stream flow depletions in the affected sub-watersheds to continue to avoid causing adverse resource impacts and to determine if additional stream flow is available to authorize any future LQWs in the affected sub-watersheds.

Requirement to file well records Part 127, Water Supply and Sewer Systems, of the Michigan Public Health Code, 1978 PA 368, as amended, requires your well driller to submit water well and pump installation records to the local health department within 60 days following completion. See the example well drilling record form in Figure 1. Your well driller can enter the water well and pump records directly into the Wellogic database. If you or someone else installs the pump later, you are required to submit the pump records to the local health department within 60 days following completion.

Changes to well records can be made by emailing the Wellogic Help at wellogic@michigan.gov.

EGLE compliance reviews EGLE Water Resources Division compliance staff conduct compliance reviews on a sub-watershed scale to make sure that EGLE has the most accurate cumulative stream flow depletion tracking figures that are used by the WWAT and by EGLE staff to determine whether proposed LQWs can be authorized under Part 327 of the NREPA. During a compliance review, EGLE staff compare the LQW registration records, well records, and the annual water use reporting data submitted to EGLE or the Michigan Department of Agriculture and Rural Development for agriculture LQWs. When the compliance review discovers unregistered wells, well records with missing pump information, wells that were installed differently than were authorized by the WWAT, SSR, or an alternative analysis, or LQWs that pumped more water than the maximum authorized annual withdrawal volumes, then EGLE must resolve those violations to bring the LQWs back into compliance with Part 327 of the NREPA. EGLE sends the missing pump information compliance communication and encloses the pump information form for the property owner or his/her authorized representative to complete and return to the local health department. EGLE sends an amended registration compliance communication to property owners if there is enough stream flow available to authorize the LQW as it was installed and operated. If there isn't enough stream flow available to authorize the LQW as installed and/or operated, then EGLE will send a violation notice to the property and provide the property owner with a list of options to bring the LQW back into compliance with Part 327 of the NREPA. EGLE copies the well driller and other interested parties (when known) on the compliance communications and violation letters as well as the local health departments.



Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Import ID:

Tax No:	Permit No: 23799	County: Calhoun	Township: Homer
Well ID: 13000009375		Town/Range: 04S 04W	Section: 11
Elevation:		Well Status: Active	WSSN:
Latitude: 42.141617		Source ID/W	
Longitude: -84.730999		Distance and Direction from Road Intersection: 150 Yards South of Q drive north on the West side of 29 Mile	
Method of Collection: GPS Std Positioning Svc SA Off		Well Owner:	
		Well Address:	Owner Address:

Drilling Method: Rotary	Well Use: Irrigation	Pump Installed: Yes	Pump Installation Only: N
Well Depth: 118.00 ft.	Date Completed: 3/27/2019	Pump Installation Date: 8/15/2019	HP: 25.00
Well Type: New	Height: 2.00 ft. above grade	Manufacturer: A.Y. McDonald	Pump Type: Submersible
Casing Type: PVC plastic	Casing Joint: Solvent welded/glued	Model Number: 300S25HP66	Pump Capacity: 260 GPM
Casing Fitting: None		Drop Pipe Length: 100.00 ft.	Pump Voltage: 460
Diameter: 12.00 in. to 98.00 ft. depth SDR: 21.00		Drop Pipe Diameter: 4.00 in.	Drilling Record ID:
Borehole: 17.50 in. to 118.00 ft. depth		Draw Down Seal Used: No	LQW Reg. No: 5577-2019
		Pressure Tank Installed: No	
		Pressure Relief Valve Installed: Yes	

Static Water Level: 14.00 ft. Below Grade	Yield Test Method: Test pump	Formation Description	Thickness	Depth
Well Yield Test: Pumping level 100.00 ft. after 25.00 hrs. at 232 GPM		Gray Sand & Gravel Stony	28.00	28.00
		Gray Clay	63.00	91.00
		Gray Sand & Gravel	27.00	118.00

Screen Installed: Yes	Filter Packed: Yes		
Screen Diameter: 12.00 in.	Blank:		
Screen Material Type: Stainless steel-slotted			
Screen Installation Type: Attached			
Slot Length Set Between			
40.00 20.00 ft. 98.00 ft. and 118.00 ft.			
Fittings: Coupling, Bottom plug			

Well Grouted: Yes	Grouting Method: Grout pipe outside casing	Geology Remarks:
Grouting Material: Bentonite slurry	Bags: 38.00	
Additives: None	Depth: 0.00 ft. to 97.00 ft.	

Wellhead Completion: Pump mount to casing

Nearest Source of Possible Contamination:	Drilling Machine Operator Name: Darrell Hein
Type: None	Employment: Employee
Distance:	Pump Installer: Matt Kleinfelt
Direction:	

Contractor Type: Water Well Drilling Contractor	Reg No: 13-24
Business Name: Sebastian & Sons	
Business Address: 28731 U Drive N, Springport, MI, 49284	

Water Well Contractor's Certification

This well and/or pump installation was performed under my registration

Signature of Registered Contractor _____ **Date** _____

General Remarks:

Other Remarks:

Figure 1: High Capacity Wellogic form completed per Part 327 regulation.