Re: Pond and well information

From: Grum, Dave (agtech@lickingswcd.com)

To: gregspeichministries@yahoo.com

Date: Tuesday, January 22, 2019 02:35 PM EST

Greg:
It seems to me, from aerial photos and soil maps, a pond could be built. Not sure of the cost; using existing soils or if amendments would be necessary (thus increasing the cost).

Yes, the information I sent you was for the property at the end of Jersey Mill Rd. According to the schematic I have of your proposal, Jersey Mill Rd. is at the corner of your property and the auditor's site shows a driveway entrance from Beaver Road.

If there is anything else I can assist you with, I'm a phone call away!

Regards,
Dave

David Grum, PhD, DVM
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> On Tue, Jan 22, 2019 at 2:01 PM greg speich <gregspeichministries@yahoo.com> wrote:
>
> Hi Dave and thank you for the report. If I understand it correctly you are saying if we follow the recommendations a 3 acre pond could be built. I understand permits would need to be obtained. Just to claify your evaluation was for our property on Jersey Mill Rd.
>
> Thanks
>
> Greg Speich
> Pastor
> Bethel World Prayer Center
>
> On Tuesday, January 22, 2019, 1:24:41 PM EST, Grum, Dave <agtech@lickingswcd.com> wrote:
>
> Greg:
> Good to speak with you last week. Attached are several documents related to our conversation and questions you had regarding the property at 11030 Worthington Rd (Jersey Mill Dr.) concerning a pond and well information. I am not an expert on wells by any means, but have included some information I was able to locate.
>
> **Pond Information:**
> 1. Ohio Pond Management Handbook (*OHPndMgntHndbk.pdf*): The handbook is published by the Department of Natural Resources and is a good source of information related to planning, siting, and managing a pond. As you know, there's more to having a pond than just digging a hole and expecting it to fill and hold water.

2. USDA Pond Construction Handbook (*USDAPndCnstrctnHndbk590.pdf*): This handbook is published by USDA and reviews information on planning, siting, and constructing a pond. There is quite a bit of technical information and equations here; don't get lost in those sections. Focus on those sections that discuss considerations on siting and planning a pond.

3. Pond reservoir area (*SpeichPndRsvrAra12219DG.pdf*): This information is obtained from the Web Soil Survey, a soils maps site maintained and periodically updated by the Natural Resources Conservation Service, a part of USDA. The soils on the property where you're planning on constructing a pond are primarily Pewamo and Bennington. These soils are typically very poorly drained. This map rates the soils as "somewhat limited" and "not limited" for construction of a pond. I won't reiterate what's described in the document. However, with proper planning, construction, and drainage (see 1 and 2 above), a pond *shouldn't* be a problem. Site specific factors will need to be considered (during construction) to ensure a water-tight pond that holds water; soil amendments (e.g. bentonite, a clay-based product) *may* be necessary which would increase the cost.

You mentioned construction of a 3 acre pond; for a pond of this size, permits will need to be secured from Jersey Township and Department of Natural Resources.

Well Information:
As mentioned earlier, I am not a well expert. However, I located some information to give you an idea of a well for your property. Typically, in that area, wells average about 200' deep (range: 60'-450') and are usually an aquifer type in gravel, sand & gravel, shale, or sandstone. It can be common to have sand and gravel interbedded with thick layers of clay. Ground water maps (from Department of Natural Resources) note a rate of 10-25 gal/min can be developed, but wells in that area have reported rates of approximately 7-15 gal/min. Rate can depend on where the well is dug, size, development, etc., and can be somewhat site specific.

Please review this information at your convenience and let me know if you have questions!

Regards,
Dave

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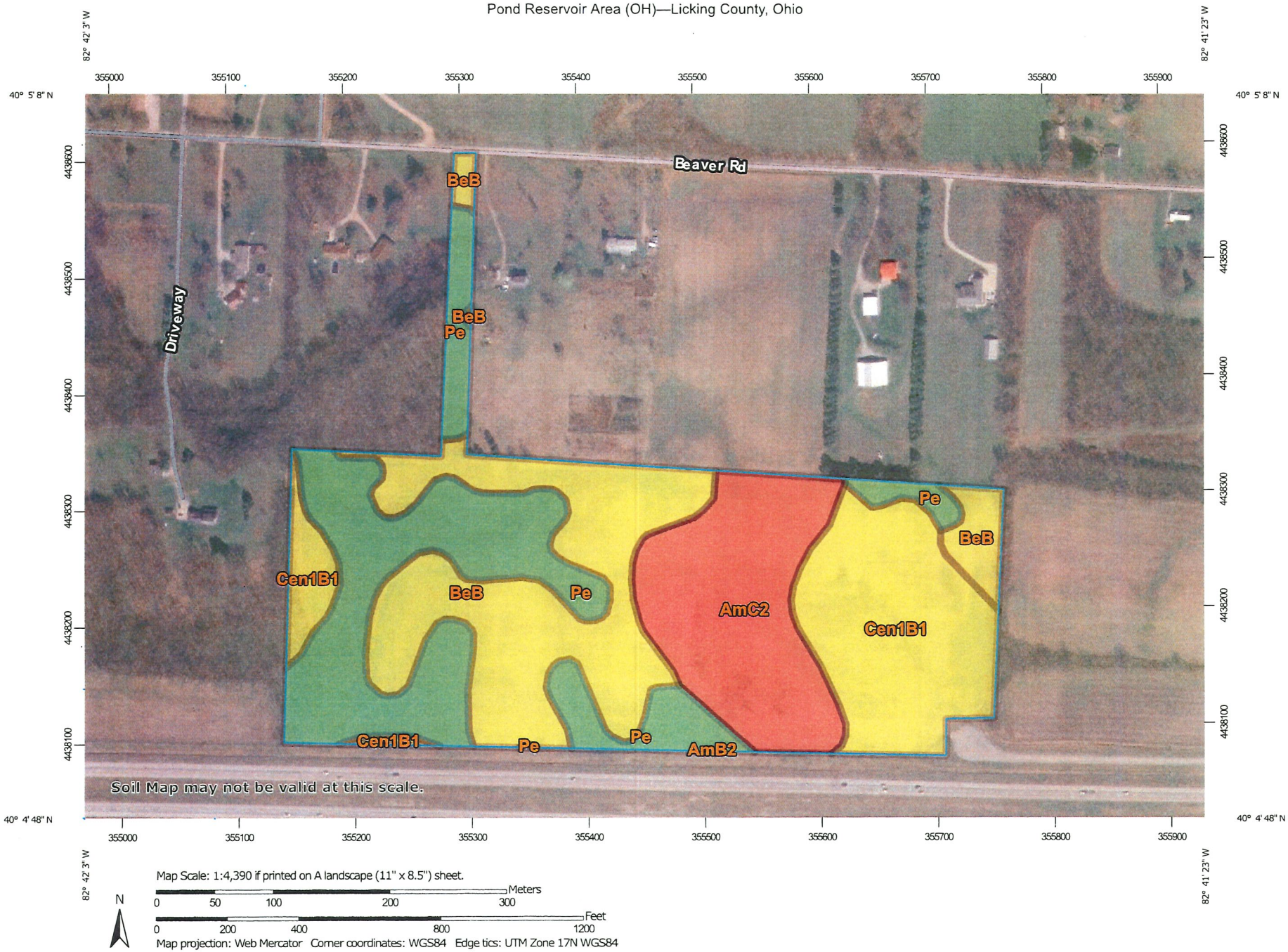
Pond Reservoir Area (OH)—Licking County, Ohio



Map Scale: 1:4,390 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Licking County, Ohio
Survey Area Data: Version 15, Sep 17, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 31, 2010—Aug 27, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Pond Reservoir Area (OH)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
AmB2	Amanda silt loam, 2 to 6 percent slopes, eroded	Somewhat limited	Amanda (100%)	Seepage (0.50)	0.0	0.0%
				Slope (0.08)		
AmC2	Amanda silt loam, 6 to 12 percent slopes, eroded	Very limited	Amanda (100%)	Slope (1.00)	7.4	19.7%
				Seepage (0.50)		
BeB	Bennington silt loam, 2 to 6 percent slopes	Somewhat limited	Bennington (85%)	Slope (0.08)	11.0	29.3%
			Cardington (9%)	Slope (0.32)		
Cen1B1	Centerburg silt loam, 2 to 6 percent slopes	Somewhat limited	Centerburg (85%)	Seepage (0.50)	8.3	22.0%
			Marengo (3%)	Seepage (0.26)		
Pe	Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes	Not limited	Pewamo, low carbonate till (85%)		10.9	28.9%
			Condit (9%)			
			Bennington (6%)			
Totals for Area of Interest					**37.7**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Somewhat limited	19.4	51.4%
Not limited	10.9	28.9%
Very limited	7.4	19.7%
Totals for Area of Interest	**37.7**	**100.0%**

Description

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the saturated hydraulic conductivity (Ksat) of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as the one shown for the map unit. The percent composition of each component in a particular map unit is given to help the user better understand the extent to which the rating applies to the map unit.

Other components with different ratings may occur in each map unit. The ratings for all components, regardless the aggregated rating of the map unit, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Differences between this interpretation for Ohio and the national intepretation: The Ohio interpretation uses different rules for seepage and bedrock and does not contain a rule for cemented pans. This interpretation includes a rule for soil slippage potential.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher