

April 17, 2021 Via PDF Electronic File

RE: Wetland Determination Results: Property at 1861 Hilltop Ln., Bannockburn, IL PIN 16-19-202-002; Lat/Lon 42.1958299; -87.8721367;

Dear

I provide the following results from a wetland delineation conducted at the property referenced above located in the Village of Bannockburn, Lake County, IL (Figure 1). You hired us to investigate the southern portion of the property for any areas meeting the definition of wetlands or waters of the U.S. (WOTUS) and/or Isolated Waters of Lake County (IWLC). Specifically, we investigated the areas that will be used residential improvements (See attached plans provided by the site engineer, Greengard Inc.). I did not find any wetlands in the proposed improvement areas. Note: wetlands may be present on other areas of the site. These include an excavated pond near the driveway and shrub/forested wetlands near the northern property border. These potential wetlands are not in areas that will be disturbed.

Site Description

The 3.78-acre residential property contains a one single-story structure, one small shed near west side of the driveway, and manicured turf grass and landscaping for the front, rear, and side yards. A small pond, presumably excavated, exists in the central portion of the site, and contains a 12-inch CMP culvert under the driveway. Lake County GIS indicates that the residence was built circa 1950-60 as it is first shown on the 1961 Lake County aerial photograph. The residence was one of the earlier structures accessing Hilltop Lane. At that time, farmland adjoined the eastern property boundary and pastureland or grassland appears present to the north and west of the site. Infill lots with development of other residential structures occurred shortly thereafter in the late 1970s and early 1980s. Other than small landscaping improvements and possible structure improvement (addition) between 1993 and 1997, the site appears unchanged since the original construction date. The site is in the NE ¼ of Section 19, Township 43N, Range 12E, of West Deerfield Township

The elevation near the residence is shown as the highest elevations (shown as 701 feet on the 2017 Lake County topography) and gently slopes toward the north/Hilltop Lane (elevation = 695 feet) as shown on Figure 7. From the structure south, the property slopes to elevation of 698 or around 4-foot higher near the structure. The Lake County Wetland Inventory (LCWI, Figure 2) does not show wetlands for the site but areas are shown for the adjoining properties to the west and south associated with ponds. However, the National Wetland Inventory (NWI, Figure 5) map does show a "Palustrine" wetland extending into the site along the southwestern border. No 100-year floodplain (i.e., Zone AE) or Floods of Record are indicated (Figures 3 and 6). Two soils are shown for the site: (1) Del Rey silt loam, 0 to 2% slopes identified by Lake County as having hydric inclusions, and (2) Ozaukee silt loam, 2 to 4% slopes. Hydric soils developed under wet or wetland conditions. Both Del Rey and Ozaukee may contain hydric inclusions (portions of hydric soil within an upland soil).



Results

I examined the site on April 16, 2021, and delineated wetlands in accordance with the methodology required by the Lake County Watershed Development Ordinance (WDO) which prescribes following the 1987 USACE wetland delineation manual (as amended, including applicable supplements). A note concerning growing season: the spring of 2021 has been a somewhat dry and warmer than usual beginning of the season. The USACE's Antecedent Precipitation Tool output (Figure 8) shows precipitation that is drier than normal but close to the lower "normal" range. The site evidence indicates "growing season" conditions existed for the data collection. I placed three data points to represent: (1) the proposed patio/hardscape area located in the backyard area ("1 UPL"), (2) a data point located near the proposed structure in the front yard area ("2 UPL"), and (3) a data point in the area near the proposed driveway improvement ("3 UPL"). Please see the attached data sheets and photographs. Figure 7 shows the wetland results aerial and data point locations.

Maintained turf grasses are the dominant vegetation type near the residential structure along with landscape shrubs and trees. The vegetation dominance is similar for all data points and did not meet the "hydrophytic vegetation" criterion for Data Point nos. 1UPL and 2UPL but did meet the criterion for Data Point 3UPL. The turf grass is mostly seeded grasses dominated by Red Fescue (*Festuca rubra*), along with Spreading Bent (*Agrostis stolonifera*) for Data point 3UPL, a grass that can grow in wetter conditions. Also present are a few upland weedy species such as Red Clover (*Trifolium pratense*), Common Dandelion (*Taraxacum officinale*), and Creeping Charlie (*Glechoma hederacea*). Near Data Point 3UPL, European Buckthorn (*Rhamnus cathartica*) dominates the shrub layer. Soils did not meet the "hydric soil" or "wetland hydrology" criteria for any data point. As such, none of the data points contained wetlands.

We did not investigate the area near the excavated pond or shrub/sapling wooded area located in the northwest property boundary or along the Thornapple Lane as these were not areas near grading or proposed structures. However, we caution that these areas may contain wetlands and need to be further investigated if work is proposed near them. Also, a sump pump discharge at the southern portion of the residence (near a wooden deck) is causing a ponded condition as shown on Photograph 5. We recommend providing positive drainage away from the house for the sump pump discharge.

Wetland Regulatory Considerations

I <u>did not</u> find wetlands in the proposed development area as indicated on Figure 7. Based on the information provided above, I recommend transmitting this letter to the village of Bannockburn, along with the engineering plans showing the building footprint including all grading or recontouring, supporting the finding that no wetlands will be directly impacted by the activity. Please feel free to contact me if you have any questions about the above information or if I can assist you further.

Sincerely,

Joseph I. Hmieleski, PWS, CWS-01

Foryth I. Hamblete

JHWetco.com, Inc.

Attachments: Figures; Appendix A: Data Sheets

Appendix B: Photographs

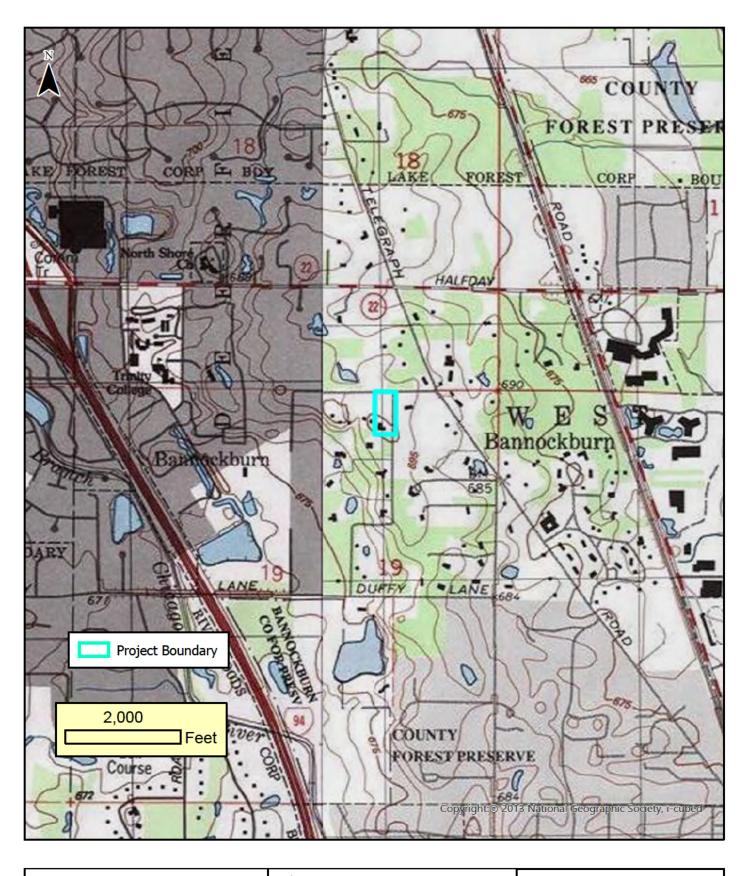


Figure 1.

USGS Quad Map



1861 Hilltop Lane Lincolnshire, IL Field Date: April 16, 2021

Delineator: J. Hmieleski, CWS-001



Figure 2.

Lake County Wetland Inventory Map



1861 Hilltop Lane Lincolnshire, IL Field Date: April 16, 2021

Delineator: J. Hmieleski, CWS-001



Figure 3.

FEMA Floodplain Map (GIS)



1861 Hilltop Lane Lincolnshire, IL Field Date: April 16, 2021

Delineator: J. Hmieleski, CWS-001

Sect./T/R: NE19, T43N, R12E PIN#: 16-19-202-022

Lat/Long: 42.1958299; 87.8721367



Figure 4.

Soils Map (GIS)



1861 Hilltop Lane Lincolnshire, IL Field Date: April 16, 2021

Delineator: J. Hmieleski, CWS-001

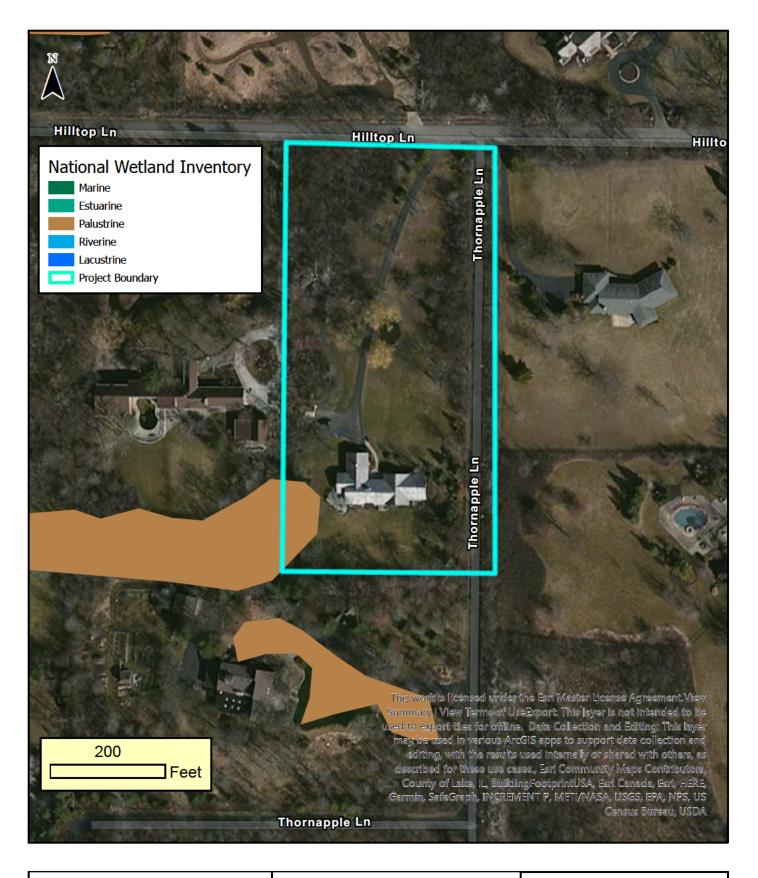


Figure 5.

National Wetland Inventory Map (GIS)



1861 Hilltop Lane Lincolnshire, IL Field Date: April 16, 2021

Delineator: J. Hmieleski, CWS-001



Figure 6.

Flood of Record Map (GIS)



1861 Hilltop Lane Lincolnshire, IL Field Date: April 16, 2021

Delineator: J. Hmieleski, CWS-001

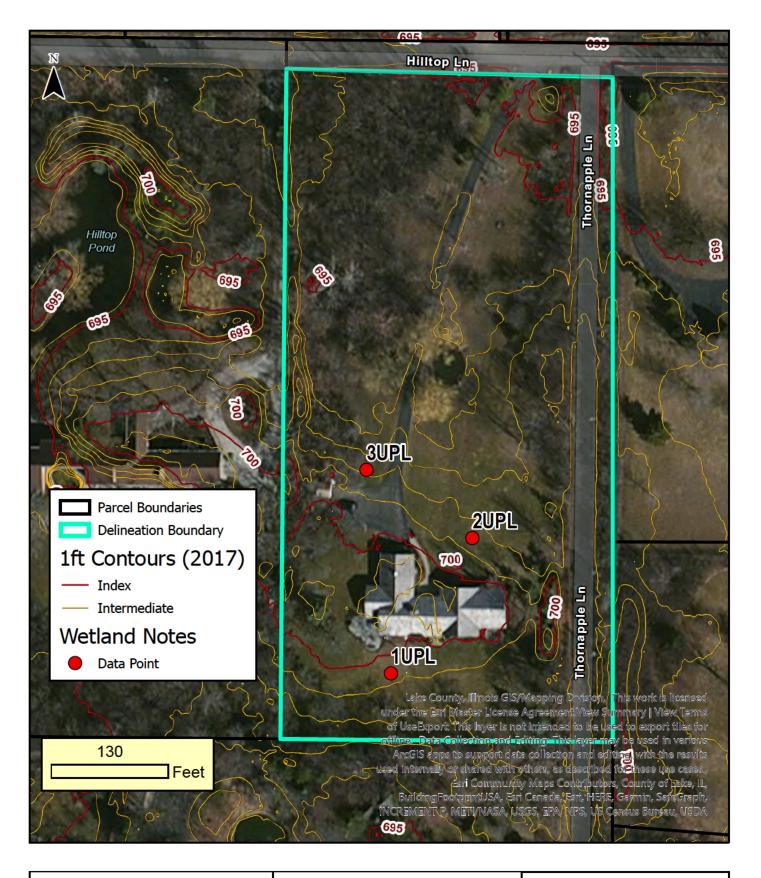


Figure 7.

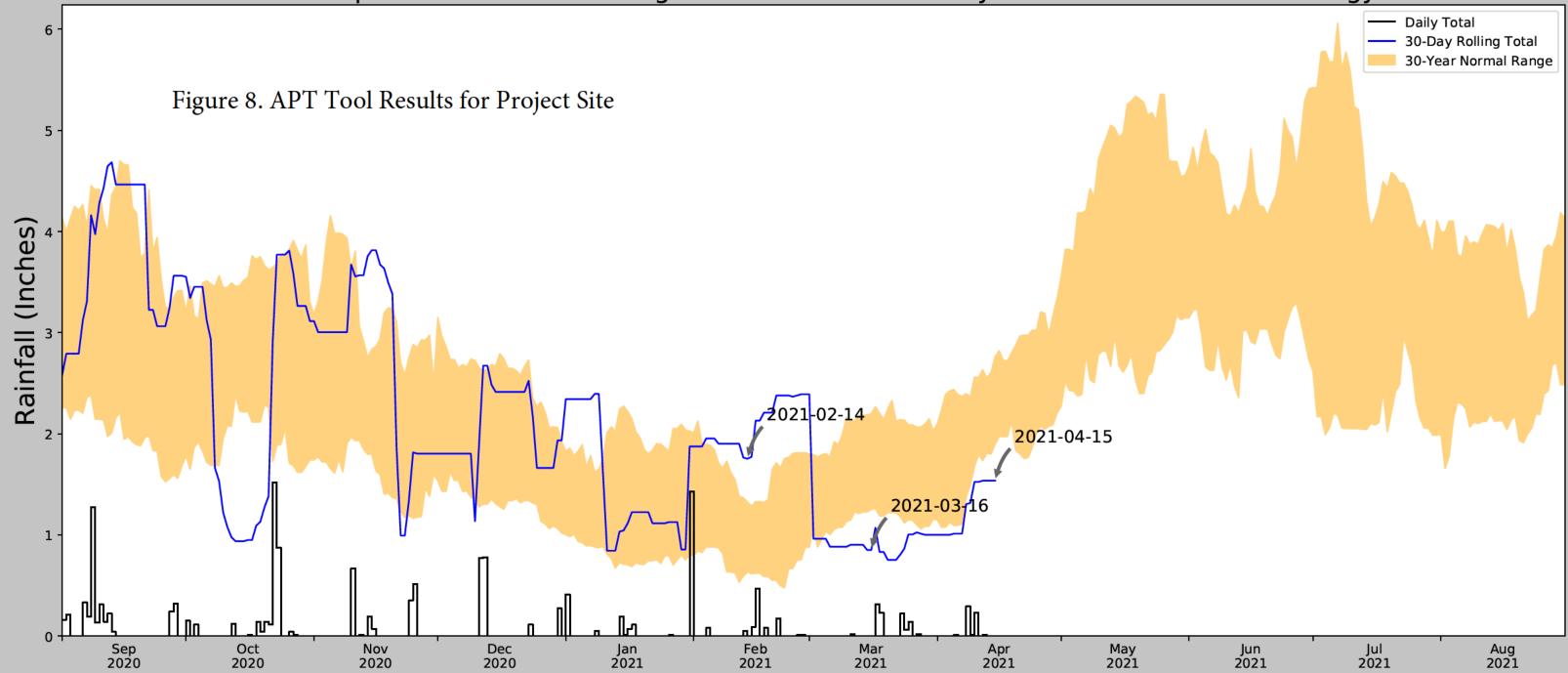
Wetland Results Map



1861 Hilltop Lane Lincolnshire, IL Field Date: April 16, 2021

Delineator: J. Hmieleski, CWS-001

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



| Coordinates | 42.1958299, -87.8721367 |
|----------------------------------|-------------------------|
| Observation Date | 2021-04-15 |
| Elevation (ft) | 696.06 |
| Drought Index (PDSI) | Not available |
| WebWIMP H ₂ O Balance | Wet Season |

| 30 Days Ending | 30 th %ile (in) | 70 th %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|-----------------------|
| 2021-04-15 | 1.894095 | 2.761417 | 1.535433 | Dry | 1 | 3 | 3 |
| 2021-03-16 | 1.250787 | 2.197244 | 0.850394 | Dry | 1 | 2 | 2 |
| 2021-02-14 | 0.632677 | 1.324016 | 1.751969 | Wet | 3 | 1 | 3 |
| Result | | | | | | | Drier than Normal - 8 |

| CORPS OF EN | Figure and tables made by the |
|-------------|----------------------------------------------|
| | Antecedent Precipitation Tool Version 1.0 |
| | |
| | Written by Jason Deters |
| ATORY PRO | U.S. Army Corps of Engineers |

| Weather Station Name | Coordinates | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|------------------------|-------------------|----------------|---------------|-------------|-------------------|---------------|-------------------|
| CHICAGO PALWAUKEE AP | 42.1208, -87.9047 | 636.155 | 5.446 | 59.905 | 2.777 | 8186 | 86 |
| BANNOCKBURN 0.5 ESE | 42.1896, -87.86 | 672.9 | 0.756 | 23.16 | 0.358 | 4 | 4 |
| RIVERWOODS 0.4 ENE | 42.1726, -87.8884 | 691.929 | 1.808 | 4.131 | 0.821 | 11 | 0 |
| LINCOLNSHIRE 0.9 N | 42.2082, -87.9188 | 686.024 | 2.537 | 10.036 | 1.167 | 7 | 0 |
| CHICAGO BOTANIC GARDEN | 42.14, -87.7853 | 629.921 | 5.887 | 66.139 | 3.038 | 3112 | 0 |
| GLENVIEW NAS | 42.0833, -87.8333 | 645.997 | 8.026 | 50.063 | 4.013 | 29 | 0 |
| LIBERTYVILLE 4 NNW | 42.3097, -87.9908 | 720.144 | 9.936 | 24.084 | 4.711 | 3 | 0 |
| WAUKEGAN | 42.3492, -87.8828 | 700.131 | 10.611 | 4.071 | 4.818 | 1 | 0 |



Appendix A – USACE Data Sheets

WETLAND DETERMINATION DATA FORM - Midwest Region

| Project/Site: 1861 Hilltop Ln., Bannockburn, IL | (| City/Co | unty: | Bannocl | kburn/ Lake | Sampling Date: 2021-0 | <u> 34-16</u> |
|------------------------------------------------------------------|----------------------|-----------------|----------------------|----------------|-----------------------------------------------------------------|---------------------------------------------------------------------|---------------|
| Applicant/Owner: Shalowitz | | State: Illinois | Sampling Point: 1UPL | | | | |
| Investigator(s): J. Hmieleski | | Section | n, Tov | wnship, Rai | _{nge:} <u>NE 19, T43N, R1</u> | 2E | |
| | | | | | (concave, convex, none): | | |
| Slope (%): 0.0 Lat: 42.1951904 | 1 | Long: _ | -87. | 8747087 | 7 | Datum: WGS 84 | |
| Soil Map Unit Name: Ozaukee | | | | | NWI classific | ation: None | |
| Are climatic / hydrologic conditions on the site typical for the | nis time of yea | ar? Ye | s | No _ | (If no, explain in R | emarks.) | |
| Are Vegetation, Soil, or Hydrology | significantly | disturb | ed? | Are " | Normal Circumstances" p | present? Yes No | , |
| Are Vegetation, Soil, or Hydrology | naturally prol | blemat | ic? | (If ne | eded, explain any answe | rs in Remarks.) | |
| SUMMARY OF FINDINGS - Attach site map | showing | sam | pling | g point k | ocations, transects | , important features | s, etc. |
| Hydrophytic Vegetation Present? Yes | No | | | | | | |
| Hydric Soil Present? Yes | | | | e Sampled | | / | |
| Wetland Hydrology Present? Yes | No | | withi | n a Wetlan | 1d? Yes | No | |
| Remarks: | | 4. | | | | | |
| Mowed turf grass area near reside | entiai str | ucti | ıre. | | | | |
| VEGETATION – Use scientific names of plants | s. | | | | | | |
| Total Obstance (Distriction 30 ft r | Absolute | | | Indicator | Dominance Test work | sheet: | |
| Tree Stratum (Plot size:30 ft r) 1. Acer saccharinum | <u>% Cover</u> 30 | Speci | | FACW | Number of Dominant Sp That Are OBL, FACW, of | | (Δ) |
| 2 | | | | | | | (^) |
| 3 | | | | | Total Number of Domin Species Across All Stra | ^ | (B) |
| 4 | | | | | Percent of Dominant Sp | | () |
| 5 | | | | | That Are OBL, FACW, of | | (A/B) |
| Sapling/Shrub Stratum (Plot size: 15 ft r) | 30% | = Total | I Cov | er | Prevalence Index work | ksheet: | |
| 1 | | | | FAC | Total % Cover of: | | _ |
| 2. | | | | | | x 1 = 0 | _ |
| 3. | | | | FACU | FACW species 30 | | _ |
| 4 | | | | | | x 3 = <u>15</u> | _ |
| 5 | | | | | FACU species 95 | x 4 = <u>380</u> | - |
| Harb Stratum (District 5 ft r | | = Total | l Cov | er | UPL species 0 | x 5 = 0 | - |
| Herb Stratum (Plot size: 5 ft r) 1. Festuca rubra | 60 | ~ | , | FACU | Column Totals: 130 | (A) <u>455</u> | _ (B) |
| 7. Trifolium pratense | 30 | | , | FACU | Prevalence Index | = B/A = <u>3.5</u> | _ |
| 3. Poa pratensis | 5 | | | FAC | Hydrophytic Vegetation | on Indicators: | |
| 4. Taraxacum officinale | _ 5 | | | FACU | 1 - Rapid Test for H | , , , , | |
| 5 | | | | | 2 - Dominance Tes | | |
| 6 | | | | | 3 - Prevalence Inde | | |
| 7 | | | | | data in Remarks | Adaptations ¹ (Provide supp s or on a separate sheet) | orting |
| 8 | | | | | Problematic Hydrop | phytic Vegetation ¹ (Explain | n) |
| 9 10 | | | | | | | |
| | 100% | = Total | I Cov | er | ¹ Indicators of hydric soil be present, unless distu | l and wetland hydrology m | nust |
| Woody Vine Stratum (Plot size: 30 ft r) | | | | | be present, unless distr | irbed or problematic. | |
| 1 | | | | | Hydrophytic | | |
| 2 | | | | | Vegetation Present? Yes | s No | |
| Remarks: (Include photo numbers here or on a separate | sheet.) | = rota | Cov | er | | | |
| , , , | , | vo+ 4 | ·hia | | ND. | | |
| Mowed regularly but Hasn't been | inowed | yeti | uiis | 5 0 450 | л. | | |

SOIL Sampling Point: 1UPL

| Depth (inches) | Matrix Color (moist) | % | Color (moist) | lox Featur % | Type ¹ | Loc² | Texture | Remarks |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 - 3 | 10YR 3/2 | 100 | (IIIOI3t) | | _ · ype | | Silt Loam | Crumbly. |
| 3 - 12 | 10YR 5/3 | 98 | 10YR 5/8 | | | - <u>—</u> | Clay Loam | - Crambiy: |
| 12 - 26 | 10 TR 3/3 | 38 | 10 TR 3/8 | _ | _ U D | - IVI М | Clay | |
| | 10 YR 5/3 | 50 | 10YR 4/2 | _ ' 50 | _ <u>D</u> | - М | Clay | |
| <u>26 - 36</u> | 1018 5/3 | _ 50 | 10 1 R 4/2 | _ 50 | | _ <u>IVI</u> | Clay | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | epletion, RM | I=Reduced Matrix, I | √S=Maske | ed Sand G | rains. | | : PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | 0 | . Olavia d N | I-4-i (O.4) | | | for Problematic Hydric Soils ³ : |
| Histosol | (A1) pipedon (A2) | | | Gleyed M Redox (S | | | _ | Prairie Redox (A16) urface (S7) |
| | istic (A3) | | | ed Matrix (| | | | anganese Masses (F12) |
| Hydroge | en Sulfide (A4) | | | y Mucky M | |) | | hallow Dark Surface (TF12) |
| | d Layers (A5) | | | Gleyed N | | | Other (| Explain in Remarks) |
| _ | uck (A10) | aaa (A11) | | ted Matrix cDark Sur | . , | | | |
| | d Below Dark Surfa ark Surface (A12) | ace (ATT) | _ | ted Dark S | , , | 7) | 3Indicators | of hydrophytic vegetation and |
| | /lucky Mineral (S1) | | | Depressi | , | ., | | d hydrology must be present, |
| 5 cm Mu | ucky Peat or Peat (| (S3) | | - | | | unless | disturbed or problematic. |
| Restrictive | Layer (if observed | d): | | | | | | |
| Туре: | | | | | | | Hydric Soil | Present? Yes No |
| Depth (in | ches): | | | | | | Tiyane con | 1103CHC 103 110 |
| | | | | | | | | |
| HYDROI O | GY . | | | | | | | |
| | | e. | | | | | | |
| Wetland Hy | drology Indicator | | ired: check all that a | apply) | | | Seconda | ury Indicators (minimum of two required) |
| Wetland Hy | drology Indicators cators (minimum of | | nired; check all that a | | ves (B9) | | | ary Indicators (minimum of two required) |
| Wetland Hy Primary India Surface | drology Indicator | | Water-S | tained Lea | , , | | Surf | ace Soil Cracks (B6) |
| Wetland Hy Primary India Surface | drology Indicators cators (minimum of Water (A1) ater Table (A2) | | Water-Si Aquatic l | | 3) | | Surf Drai | |
| Wetland Hy Primary India Surface High Wa Saturatio | drology Indicators cators (minimum of Water (A1) ater Table (A2) | | Water-Si Aquatic I True Aqu | tained Lea Fauna (B1 | 3) s (B14) | | Surf Drai Dry- | ace Soil Cracks (B6) nage Patterns (B10) |
| Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen | drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) | | Water-Si Aquatic l True Aqu Hydroge Oxidized | tained Lea Fauna (B1 uatic Plant n Sulfide (Rhizosph | 3) s (B14) Odor (C1) eres on L | iving Roots | Surf Drai Cray Cray | ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) |
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| Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Sparsely | drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? | al Imagery (E | Water-Si Aquatic I Aquatic I True Aqu Hydroge Oxidized Presence Recent I Thin Muc | tained Lea Fauna (B1 Juatic Plant In Sulfide (I Rhizosph e of Reduc ron Reduc ck Surface r Well Date xplain in R | 3) s (B14) Odor (C1) eres on L ced Iron (C tition in Till (C7) a (D9) | ed Soils (Co | Surf Drai Dry- Cray Satu Stur 6) Geo | ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2) |
| Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Del Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca | drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent? pillary fringe) | al Imagery (Eave Surface Yes Yes Yes | Water-Si Aquatic I Aquatic I True Aqu Hydroge Oxidized Presence Recent I Thin Muc Gauge o (B8) Other (E No Depth (i No Depth (i | tained Lea Fauna (B1 uatic Plant n Sulfide (I Rhizosph e of Reduc ron Reduc ck Surface r Well Date xplain in R inches): inches): inches): | 3) s (B14) Odor (C1) eres on L ced Iron (C tion in Till (C7) a (D9) demarks) | (24) ed Soils (Co | Surf Drai Dry Cray Satu Stur 6) Geo FAC | ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2) |
| Primary India Surface High Wa Saturatio Water M Sedimen Drift Den Algal Ma Iron Den Inundati Sparsely Field Obser Surface Water Table Saturation P (includes car | drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent? pillary fringe) | al Imagery (Eave Surface Yes Yes Yes | Water-Si Aquatic I Aquatic I True Aqu Hydroge Oxidized Presence Recent I Thin Muc Gauge o (B8) Other (E | tained Lea Fauna (B1 uatic Plant n Sulfide (I Rhizosph e of Reduc ron Reduc ck Surface r Well Date xplain in R inches): inches): inches): | 3) s (B14) Odor (C1) eres on L ced Iron (C tion in Till (C7) a (D9) demarks) | (24) ed Soils (Co | Surf Drai Dry Cray Satu Stur 6) Geo FAC | ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2) :-Neutral Test (D5) |
| Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca | drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent? pillary fringe) | al Imagery (Eave Surface Yes Yes Yes | Water-Si Aquatic I Aquatic I True Aqu Hydroge Oxidized Presence Recent I Thin Muc Gauge o (B8) Other (E No Depth (i No Depth (i | tained Lea Fauna (B1 uatic Plant in Sulfide (I Rhizosph e of Reduc ron Reduc ck Surface r Well Date explain in Reduc inches): inches): inches): | 3) s (B14) Odor (C1) eres on L ced Iron (C tion in Till (C7) a (D9) demarks) | (24) ed Soils (Co | Surf Drai Dry Cray Satu Stur 6) Geo FAC | ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2) :-Neutral Test (D5) |
| Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Del Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat Water Table Saturation P (includes cal Describe Re | drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent? pillary fringe) corded Data (strea | al Imagery (Eave Surface Yes Yes Yes Im gauge, m | Water-Si Aquatic I Aquatic I True Aqu Hydroge Oxidized Presence Recent I Thin Muc Gauge o (B8) Other (E No Depth (I No Depth | tained Lea Fauna (B1 uatic Plant in Sulfide (I Rhizosph e of Reduc ron Reduc ck Surface r Well Date explain in Reduc inches): inches): inches): | 3) s (B14) Odor (C1) eres on L ced Iron (C tion in Till (C7) a (D9) demarks) | (24) ed Soils (Co | Surf Drai Dry Cray Satu Stur 6) Geo FAC | ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2) :-Neutral Test (D5) |
| Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimen Drift Del Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Wat Water Table Saturation P (includes cal Describe Re | drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent? pillary fringe) | al Imagery (Eave Surface Yes Yes Yes Im gauge, m | Water-Si Aquatic I Aquatic I True Aqu Hydroge Oxidized Presence Recent I Thin Muc Gauge o (B8) Other (E No Depth (I No Depth | tained Lea Fauna (B1 uatic Plant in Sulfide (I Rhizosph e of Reduc ron Reduc ck Surface r Well Date explain in Reduc inches): inches): inches): | 3) s (B14) Odor (C1) eres on L ced Iron (C tion in Till (C7) a (D9) demarks) | (24) ed Soils (Co | Surf Drai Dry Cray Satu Stur 6) Geo FAC | ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2) :-Neutral Test (D5) |

WETLAND DETERMINATION DATA FORM - Midwest Region

| Project/Site: 1861 Hilltop Ln., Bannockburn, IL | (| City/Co | unty: | Bannock | kburn/ Lake | Sampling Date: 202 | <u>21-04-16</u> |
|-----------------------------------------------------------------|------------------|-----------------|--------------------|--------------|--------------------------------------------------------------------|------------------------------------|-----------------|
| Applicant/Owner: Shalowitz | | State: Illinois | Sampling Point: 2U | PL | | | |
| Investigator(s): J. Hmieleski | | Section | n, Tov | wnship, Rar | nge: NE 19, T43N, R1 | 2E | |
| | | | | | (concave, convex, none): | | |
| Slope (%): 0.0 Lat: 42.1958923 | ו | Long: _ | -87. | 8705597 | • | Datum: WGS 84 | |
| Soil Map Unit Name: Ozaukee | | | | | NWI classific | ation: None | |
| Are climatic / hydrologic conditions on the site typical for th | is time of yea | ar? Ye | s | No | (If no, explain in R | emarks.) | |
| Are Vegetation, Soil, or Hydrology | significantly of | disturb | ed? | Are "l | Normal Circumstances" p | resent? Yes | No |
| Are Vegetation, Soil, or Hydrology | naturally prol | blemat | ic? | (If ne | eded, explain any answe | rs in Remarks.) | |
| SUMMARY OF FINDINGS - Attach site map | showing | samı | pling | g point k | ocations, transects | , important featu | ıres, etc. |
| Hydrophytic Vegetation Present? Yes N | No_ | | | | | | |
| Hydric Soil Present? Yes N | | | | e Sampled | | 4 | |
| Wetland Hydrology Present? Yes N | No | | withi | in a Wetlan | id? Yes | No | |
| Remarks: | | 4. | | | | | |
| Mowed turf grass area near reside | ntiai str | ucti | ıre. | , | | | |
| VEGETATION – Use scientific names of plants | S. | | | | | | |
| Tree Stratum (Plot size: 30 ft r) | Absolute | | | Indicator | Dominance Test work | sheet: | |
| Tree Stratum (Plot size: 30 ft r) | % Cover | | | | Number of Dominant Sp That Are OBL, FACW, o | | (A) |
| 2 | | | | | Total Number of Domin | | |
| 3 | | | | | Species Across All Stra | ta: <u>2</u> | (B) |
| 4 | | | | FACW_ | Percent of Dominant Sp | | |
| 5 | | = Tota | I Cov | er | That Are OBL, FACW, o | or FAC: 0 | (A/B) |
| Sapling/Shrub Stratum (Plot size: 15 ft r) | | | | | Prevalence Index worl | | |
| 1 | | | | | Total % Cover of: | | <u>:</u> |
| 2 | | | | FAC | | x 1 = 0 | — |
| 3 | | | | FACU | · - | x = 0 x = 0 | |
| 4 | | | | 1700 | | $\times 4 = \frac{400}{400}$ | |
| 5 | | = Tota | L Cov | | UPL species 0 | | _ |
| Herb Stratum (Plot size: 5 ft r) | | | | | Column Totals: 100 | (A) 400 | (B) |
| 1. Festuca rubra | _ 75 | | | FACU | | | ` ` ' |
| 2. Trifolium pratense | $-\frac{20}{5}$ | | | FACU FACU | Prevalence Index | | |
| 3. Glechoma hederacea | | | | FACU_ | Hydrophytic Vegetation 1 - Rapid Test for H | | |
| 4 | | | | | 2 - Dominance Tes | | ' |
| 5 | | | | | 3 - Prevalence Inde | | |
| 6 | | | | | 4 - Morphological A | | supporting |
| 7 | | | | | data in Remarks | s or on a separate she | et) |
| 8 9 | | | | | Problematic Hydrop | ohytic Vegetation ¹ (Ex | plain) |
| 10 | | | | | 4 | | |
| Woody Vine Stratum (Plot size: 30 ft r | 100% | = Tota | l Cov | er | ¹ Indicators of hydric soil be present, unless distu | | gy must |
| 1 | | | | | Hydrophytic | | |
| 2 | | | | | Vegetation Present? Yes | s No | |
| Develop (leabade abote pro- | -1 | = Tota | I Cov | er | . resent: Tes | | _ |
| Remarks: (Include photo numbers here or on a separate | , | | | | | | |
| Mowed regularly but Hasn't been r | nowed y | yet t | this | seaso | n. | | |

SOIL Sampling Point: 2UPL

WETLAND DETERMINATION DATA FORM - Midwest Region

| Project/Site: 1861 Hilltop Ln., Bannockburn, IL | _{unty:} <u>Baı</u> | nnockburn/ Lake | { | Sampling Date: 2021-04-16 | | | | |
|-------------------------------------------------------------------|-----------------------------|--------------------------------------------|------------------------|--------------------------------|--------------------------|--------------------------------------------------------------------|--|--|
| Applicant/Owner: Shalowitz | | | | Sampling Point: 3UPL | | | | |
| Investigator(s): J. Hmieleski | | Section | , Townsh | ip, Range: <u>NE 19, T4</u> | 3N, R12 | E | | |
| Landform (hillslope, terrace, etc.): Upland, Flat | | Local relief (concave, convex, none): None | | | | | | |
| Slope (%): 0 Lat: 42.1955261 | ι | Long: -87.8722768 Datum: WGS 84 | | | | | | |
| Soil Map Unit Name: | | | | NWI | classificat | tion: | | |
| Are climatic / hydrologic conditions on the site typical for this | time of yea | ar? Yes | s | No (If no, exp | lain in Rei | marks.) | | |
| Are Vegetation, Soil, or Hydrology signature. | gnificantly o | disturbe | ed? | Are "Normal Circumst | ances" pre | esent? Yes No | | |
| Are Vegetation, Soil, or Hydrology na | | | | (If needed, explain an | | | | |
| SUMMARY OF FINDINGS – Attach site map s | howing | samp | oling po | oint locations, tra | nsects, | important features, etc. | | |
| Hydrophytic Vegetation Present? Yes No | · | | | | | | | |
| Hydric Soil Present? Yes No | | | | mpled Area | | 1/ | | |
| Wetland Hydrology Present? Yes No | <u> </u> | | within a V | Wetland? Y | es | No | | |
| Remarks: | | | | | | | | |
| Mowed turf grass near driveway. | | | | | | | | |
| VEGETATION – Use scientific names of plants. | | | | | | | | |
| 20 ft " | Absolute % Cover | | nant Indic es?_ Sta | otuo | | | | |
| 1 | | | | Number of Don That Are OBL, | | • | | |
| 2 | | | | Total Number of | of Domina | ot | | |
| 3 | | | | Species Across | | | | |
| 4 | | | | Percent of Don | ninant Spe | ecies | | |
| 5 | | | | That Are OBL, | | | | |
| Sapling/Shrub Stratum (Plot size: 15 ft r) | | = Total | Cover | Prevalence Inc | dex works | sheet: | | |
| | 10 | | FAC | C Total % Co | over of: | Multiply by: | | |
| 2 | | | | OBL species | 0 | x 1 = <u>0</u> | | |
| 3 | | | | FACW species | | x 2 = <u>100</u> | | |
| 4 | | | | FAC species | | x 3 = <u>30</u> | | |
| 5 | | | | FACU species | 50 | x 4 = 200 | | |
| Herb Stratum (Plot size: 5 ft r) | 10% | = Total | Cover | UPL species | 110 | x = 0 (A) 330 (B) | | |
| 1. Agrostis stolonifera | 50 | ~ | FAG | ı | | <-/ | | |
| 2. Festuca rubra | 30 | | FAC | CU Prevalenc | ce Index = | = B/A = <u>3.0</u> | | |
| 3. Taraxacum officinale | 10 | | FAC | | | | | |
| 4. Trifolium pratense | 10 | | FAC | | | drophytic Vegetation | | |
| 5 | | | | 2 - Domina | | | | |
| 6 | | | | 3 - Prevale | | | | |
| 7 | | | | 4 - Morpho data in | ilogical Ad Remarks (| aptations ¹ (Provide supporting or on a separate sheet) | | |
| 8 | | | | | | nytic Vegetation ¹ (Explain) | | |
| 9 | | | | | | | | |
| 10 | 100% | = Total | Cover | | | and wetland hydrology must bed or problematic. | | |
| Woody Vine Stratum (Plot size: 30 ft r) | | | | • | | • | | |
| 1 | | | | Hydrophytic Vegetation | | | | |
| 2 | | | Cover | Present? | Yes | No | | |
| Remarks: (Include photo numbers here or on a separate si | | - Total | OUVEI | | | | | |
| Occasionally maintained. Buckthorn | , | na v | Nacto | rn property oc | dae | | | |
| Cocasionally maintained. Buckthon | 1 13 a 10 | nig v | weste | in property et | ıye. | | | |

SOIL Sampling Point: 3UPL

| Depth | Matrix | | Red | ox Featur | | | | |
|---------------|-----------------------------------------|---------------|------------------------|-------------------|-------------------|------------------|---------------|------------------------------------------------------------|
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-5 | 10YR 3/2 | <u>100</u> | | | | | Silt Loam | |
| <u>5 - 12</u> | 10YR 4/3 | 80 | 10YR 3/2 | _ <u>19</u> | _ <u>D</u> | _ <u>M</u> | Clay Loam | |
| 5 - 12 | | | 7.5YR 5/4 | 1 | С | М | | |
| 12 - 24 | 10YR 4/3 | 100 | | | | | Clay | |
| 24 - 32 | 10YR 4/3 | 90 | 10YR 5/1 | 10 | | | Clay | |
| 24 32 | 101104/3 | _ = | 1011 3/1 | _ 10 | | | Clay | |
| | | | | | | | | |
| - | | | | | | | | |
| | | epletion, RM | I=Reduced Matrix, N | 1S=Mask | ed Sand G | Brains. | | PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | | | | | | for Problematic Hydric Soils ³ : |
| Histosol | . , | | | - | Matrix (S4) | | _ | Prairie Redox (A16) |
| _ | pipedon (A2) istic (A3) | | | Redox (Sed Matrix | | | | urface (S7) inganese Masses (F12) |
| _ | en Sulfide (A4) | | | | lineral (F1 |) | _ | nallow Dark Surface (TF12) |
| | d Layers (A5) | | | | Matrix (F2) | | | Explain in Remarks) |
| 2 cm Mu | uck (A10) | | Deplet | ed Matrix | (F3) | | | |
| | d Below Dark Surf | ace (A11) | _ | | face (F6) | | 2 | |
| l — | ark Surface (A12) | | | | Surface (F | 7) | | of hydrophytic vegetation and |
| . — | Mucky Mineral (S1) ucky Peat or Peat | | Redox | Depressi | ons (F8) | | | hydrology must be present, disturbed or problematic. |
| | Layer (if observe | | | | | | unicss (| distarbed of problematic. |
| Type: | | -,- | | | | | | , |
| | ches): | | | | | | Hydric Soil I | Present? Yes No |
| Remarks: | | | | | | | | |
| | | | | | | | | |
| HYDROLO | | | | | | | | |
| 1 - | drology Indicator | | | | | | | |
| | | f one is requ | ired; check all that a | | | | | y Indicators (minimum of two required) |
| | Water (A1) | | Water-St | | , , | | | ace Soil Cracks (B6) |
| | ater Table (A2) | | Aquatic F | , | - | | | nage Patterns (B10) |
| Saturati | on (A3) farks (B1) | | True Aqu | | . , | | | Season Water Table (C2) |
| | nt Deposits (B2) | | Hydroger | | | ivina Roots | | fish Burrows (C8) ration Visible on Aerial Imagery (C9) |
| | posits (B3) | | Presence | | | _ | | ted or Stressed Plants (D1) |
| — | at or Crust (B4) | | Recent Ir | | | | _ | morphic Position (D2) |
| | posits (B5) | | Thin Muc | | | () | . — | Neutral Test (D5) |
| ' | on Visible on Aeria | al Imagery (E | _ | | | | _ | , , |
| Sparsel | y Vegetated Conc | ave Surface | (B8) Other (Ex | oplain in F | Remarks) | | | |
| Field Obser | vations: | | | | | | | |
| Surface Wat | er Present? | Yes | No Depth (i | nches): _ | | | | |
| Water Table | Present? | Yes | No Depth (i | nches): _ | | | | |
| | pillary fringe) | | No Depth (i | | | | | Present? Yes No |
| Describe Re | corded Data (strea | ını gauge, m | onitoring well, aeria | pnotos, p | orevious if | ispections), | ıı avallable: | |
| Remarks: | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| 1 | | | | | | | | |



Appendix B – Photographs





1. Data point 1UPL (Upland) showing turfgrass and existing residence facing northeast.



2. Data point 2UPL (Upland) facing south viewing front (north side) of residence.





3. Data point 3UPL (Upland) facing north with residential driveway to the right (east).



4. Pond (presumably excavated) with landscaping and culvert facing northwest.





5. Sump pump outlet showing ponded conditions near deck on south side of residence.



6. View of residence, yard, driveway, and landscaping facing south from the northern property boundary.

