Desktop Hydrogeological Investigation

Pendleton Solar Energy Centre

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Sign-off Sheet

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Abbreviations

AMSL	Above mean sea level
AC	Alternating current
ANSI	Area of Natural and Scientific Interest
BGS	Below ground surface
HVA	Highly Vulnerable Aquifer
m	Metre(s)
MNRF	Ministry of Natural Resources and Forestry
MOECC	Ministry of the Environment and Climate Change
MW	Megawatt
O. Reg.	Ontario Regulation
PCC	Pont of Common Coupling
Pendleton	Pendleton Energy Centre Limited Partnership
PV	Photovoltaic
REA	Renewable Energy Approval
SGRA	Significant Groundwater Recharge Area
SNCA	South Nation Conservation Authority
Stantec	Stantec Consulting Ltd.
WHPA	Well Head Protection Area
WWR	Water well record

1.0 INTRODUCTION

1.1 PROJECT PURPOSE

Pendleton Energy Centre Limited Partnership (Pendleton) is proposing to develop a 12-megawatt (MW) solar photovoltaic (solar PV) energy generating facility, known as the Pendleton Solar Energy Centre (the Project), on an approximately 53 hectare (ha) parcel of land (Site) located southeast of the intersection of County Road 2 and County Road 19 in the Township of Alfred and Plantagenet, United Counties of Prescott and Russell (Figure 1, Appendix A). Pendleton is proposing the renewable energy project in response to the Government of Ontario's Large Renewable Procurement (LRP) initiative to promote the development of renewable electricity in the province.

The environmental approval for renewable energy projects is called the Renewable Energy Approval (REA) and is regulated by the Ministry of the Environment and Climate Change (MOECC) and the Ministry of Natural Resources and Forestry (MNRF). To obtain a REA, each project is subject to the requirements of Ontario Regulation (O. Reg.) 359/09, the Renewable Energy Approvals Under Part V.0.1 of the Act, created under the Environmental Protection Act. Part of the REA Regulation requires specific documents to be prepared for each project to describe the project and identify potential adverse effects. Any potential adverse effects will be prevented or minimized through monitoring and mitigation. Various documents have been previously prepared for the Project and are described in Section 2.1 The proposed solar PV distribution grid connected system is considered a Class 3 Solar Facility under O. Reg. 359/09, s. 4.

1.2 SCOPE OF WORK

As part of the REA application for the Project, Pendleton retained Stantec Consulting Ltd. (Stantec) to complete a desktop-level hydrogeological assessment of the Site. The scope of work for the hydrogeological assessment consisted of the following:

- A desktop-level background review of available geological and hydrogeological data/information for the Site and surrounding area, which included but was not limited to the following:
  - Ministry of Environment and Climate Change (MOECC) Water Well Records (WWRs)
  - Ontario Geological Survey (OGS) Mapping
  - Regional Groundwater and Source Water Protection Studies
  - Local Geotechnical, Hydrogeological and Environmental Site Assessment Investigations
  - Aerial photography and topographic mapping
  - Project design concept drawings and details.
- An evaluation of the potential need for groundwater dewatering at the Site.

- A door-to-door survey of all properties located within 300 m of the Site to evaluate the potential for wells located on those properties to be impacted by potential onsite dewatering and/or other construction activities.

The above-mentioned information was used to develop a conceptual hydrogeological model for the Site and surrounding area to better understand the form and function of the regional and local hydrogeological system, with this information then being used to identify potential offsite private properties that could be affected by the Project construction and operation and to evaluate the need for development of pre-, during and post-construction groundwater monitoring programs for the Site. The report provides suggestions for the use of onsite monitoring wells (to be constructed), accessible offsite private wells, or a combination of both in the monitoring program, and a discussion of potential frequency and duration of the monitoring program, including suggested quality parameters to be monitored. Potential mitigation measures that could be employed at the Site to minimize any potential disturbances from construction activities to local private water well quantity and/or quality are also discussed in the report.

1.3 REPORT ORGANIZATION

The report is arranged into six sections including this introduction. Section 2 presents a summary of background information focusing on the interpretation of regional geological and hydrogeological conditions. Section 3 presents a summary of local site conditions including geology, hydrogeology and private water wells. Section 4 presents a summary of potential groundwater related impacts. Section 5 presents the recommended groundwater monitoring program. Section 6 presents the references used in preparing this report. All figures and tables references are presented in Appendices A and B, respectively. Appendix C presents a summary of the local MOECC Water Well Records. Appendices D, E and F presents borehole and test pit logs, private well survey results, and dewatering calculations, respectively.

2.0 BACKGROUND

2.1 GENERAL SITE AND PROJECT DESCRIPTION

The Site is located on an approximately 53 ha parcel of land located southeast of the intersection of County Road 2 and County Road 19 in the United Counties of Prescott and Russell, Ontario (Figure 1, Appendix A). The Site predominantly consists of agricultural land that is generally flat, with the topographic profile slightly sloping to the southeast from an elevation of 78 m above mean sea level (AMSL) to 73 m AMSL (Figure 2, Appendix A). The existing agricultural field is underlain by a drainage network that ties into a drainage feature located at the southeast property boundary of the Site (Figure 3, Appendix A). The Site is situated within the South Nation Watershed which lies within the boundary of the South Nation Conservation (SNC).

The Pendleton Solar Energy Centre Project will include the installation of approximately 35,000 to 60,000 solar panels that will be mounted off the ground on a rack system in rows. The project will require six (6) stations including one or more inverter step-up transformer(s) and inverter(s) and a 27.6 kV substation comprised of circuit breakers, disconnect switches, grounding transformer, surge arresters, auxiliary services transformer, revenue metering equipment, and control building. Electricity generated from the solar panels will be transported to the inverters and then on to the substation via underground cables. A connection line, approximately 75 m long, will be required from the substation to the Pont of Common Coupling (PCC) located in the right-of- way east of County Road 19. The PCC is the point where Hydro One Networks Inc. (Hydro One) will connect the Project to the existing distribution grid line located on the west side of County Road 19. An operations and maintenance storage area will be located near the main site entrance along County Road 19, and will consist of small permanent structures, such as storage containers that will be used to store equipment and spare parts used for maintenance activities. The proposed layout of the Site is presented in Figure 1 (Appendix A).

Site preparation will include road and parking area construction, removal of vegetation and topsoil, and compaction of the sub-soils. Construction activities will include excavation of the substation area for footings and foundations. These activities have the potential to impact local groundwater conditions, which are discussed in more detail in Section 4.0.

2.2 REGIONAL PHYSIOGRAPHY

The Site lies within the physiographic region classified by Chapman and Putnam (1984) as the Russell and Prescott Sand Plains, with the Ottawa Valley Clay Plains located further west and south of the Site (Figure 4, Appendix A). The Russell and Prescott Sand Plains comprise an area of about 1,490 km^2 that extends from Ottawa to Hawkesbury and are dominated by coarse deltaic deposits. The sand unit is underlain by Ottawa Valley Clay.

2.3 REGIONAL GEOLOGY AND HYDROGEOLOGY

Geological conditions throughout the region are documented in previous studies completed by Ontario Geological Survey (OGS, 2010) and the Raisin Region Conservation Authority and South Nation Conservation (RRCA & SNC, 2008, 2009 and 2016b). In summary, subsurface conditions throughout the region in which the Site is located consist of the following key geological formations, with these units being listed from youngest to oldest with hydrostratigraphic significance:

Recent Alluvial Deposits: mainly consist of modern alluvial clay, silt, sand, and gravel deposits, that may contain organic materials transported by recent rivers and creeks (Unit 19; Figure 5, Appendix A); and ancient alluvial deposits of clay, silt, sand, gravel, organic materials deposited in the early Ottawa River (Unit 12; Figure 5, Appendix A).

Coarse-textured Glaciomarine Deposits (Aquifer): consists of sands deposited as deltas by the Champlain Sea in shallow marine environments (Unit 11a; Figure 5, Appendix A). These deltaic sands unit are considered an overburden aquifer, having reported hydraulic conductivities in the range of 7.7×10^{-6} m/s (WESA, 2006).

Fine-textured Glaciomarine Deposits (Aquitard): consists of glaciomarine silt and clay sediments deposited by the Champlain Sea in deep water environments (Unit 10a; Figure 5). This unit has reported hydraulic conductivities in the range of 8.8×10^{-7} m/s (WESA, 2006).

Glaciofluvial Deposits (Aquifer): sand and gravel aquifer having reported hydraulic conductivities in the range of 1.0×10^{-3} m/s (WESA, 2006).

Till Deposits (Aquitard/Aquifer): typically consists of hard, compact, calcareous sandy silt till, but can comprise silty sand till with boulders and cobbles. The till is widespread throughout the region and generally directly overlies bedrock. The till ranges in thickness from less than 1 m to more than 10 m in some areas (RRCA & SNC, 2008). Hydraulic conductivities of the sandy silt till are reported to be in the range of 1.0×10^{-8} m/s, whereas the silty sand till has hydraulic conductivities in the range of 1.2×10^{-4} m/s (WESA, 2006).

Bedrock (Aquifer/Aquitard): Paleozoic Era sedimentary rocks belonging to the Ottawa Group, specifically limestone and shale of the Lindsay (Upper Ordovician) Formation. Bedrock is located from 25 to 50 m BGS and slopes gently to the southwest (RRCA & SNC, 2009). The reported range of hydraulic conductivities for the Upper Lindsay Formation is 1×10^{-7} m/s to 1.0×10^{-11} m/s, with the hydraulic conductivities for the Lower Lindsay Formation being in the range of 1.1×10^{-4} m/s (WESA, 2006).

Potentiometric surface mapping presented in the *Water Budget: Conceptual Understanding Report* (RRCA & SNC, 2009) indicates that groundwater flow through the overburden deposits beneath the Site is southward towards the South Nation River, with a similar groundwater flow pattern being interpreted for the shallow bedrock.

The Ottawa Group bedrock aquifer units are widely exploited across the region for private, commercial, institutional, and municipal use, and approximately 83% of wells drilled in the South Nation watershed, are bedrock wells (RRCA & SNC, 2009). The South Nation watershed area also has many highly permeable glacial deposits, glaciofluvial complexes and extensive deltaic sand deposits which produce good yields of groundwater (RRCA & SNC, 2009).

2.4 SOURCE WATER PROTECTION

Review of MOECC WWR database indicates there are no municipal wells located within 300 m of the Site (Appendix C). The nearest Well Head Protection Area (WHPA) is for the Vars (City of Ottawa) municipal wells, which are located more than 20 km to the southwest of the Site.

Based on mapping generated from the MOECC Source Water Protection Information Atlas (https://www.gisapplication.lrc.gov.on.ca/SourceWaterProtection/Index.html?site=SourceWaterProtection&viewer=SWPViewer&locale=en-US), the Site is not located within a mapped Wellhead Protection Area (WHPA), Intake Protection Zone (IPZ), or Issue Contributing Area. The Site is located within a highly Significant Groundwater Recharge Area (SGRA) and a Highly Vulnerable Aquifer (HVA) area, both with a vulnerability scores of six (6). According to the Raisin-South Nation Source Protection Region Source Protection Plan (RRCA & SNC, 2016a), a HVA is an aquifer on which external (contaminant) sources have or are likely to have a significant adverse effect, and includes the land above the aquifer. Aquifers are considered highly vulnerable based depth, and the permeability and characteristics of the soil or rock covering and surrounding them. A SGRA is defined as an area where the rate of recharge to an underlying aquifer system is more than 1.15 times greater (computed to be 208.5 mm/year) than the average recharge that occurs throughout the source protection area (RRCA & SNC, 2016a).

3.0 LOCAL CONDITIONS

3.1 LOCAL GEOLOGY AND HYDROGEOLOGY

Figure 5 (Appendix A) presents the surficial geological conditions within the Site and surrounding area as mapped by the OGS (2010), as well as the location of Cross Sections A-A' (Figure 6, Appendix A) and B-B' (Figure 7, Appendix A). The construction of the cross-sections involved using soils information obtained from MOECC WWR (Appendix C) and borehole and test pit logs associated with a geotechnical investigation completed at the Site by Houle Chevrier Engineering (HCE, 2015). The locations of onsite test pits (TP14-1 through TP14-7) and boreholes (BH14-1 through BH14-7), and nearby MOECC WWR is presented on Figure 5 (Appendix A). Copies of the Houle Chevrier Engineering (2015) test pit and borehole logs are included in Appendix D.

Deposits of sand to silty sand, with some occurrences of sandy silt, covers the Site and surrounding area, with this deposit interpreted to represent the Coarse-textured Glaciomarine Aquifer. The onsite test pits and boreholes were terminated within the sand/silty sand deposit at depths ranging from 1.6 m to 6.7 m BGS. Review of nearby WWR 5201579, located approximately 240 m northwest of the Site, indicated the sand unit extended to a depth of 13.7 m BGS, and is underlain a 28.4 m thick deposit of clay (interpreted to represent the Fine-textured Glaciomarine Aquitard), which in turn is underlain by gravel with clay and sand to a depth of 46.6 m BGS (maximum depth of drilled hole).

Table 1 (Appendix B) presents the groundwater levels measured in the open boreholes and test pits at the time of completion, between January 12 and 13, 2015 (HCE, 2015). The depth to groundwater ranged from 2.1 m (TP14-6) to 4.9 m (BH14-2), with corresponding water elevations ranging from 69.1 m AMSL to 72.9 m AMSL. Figure 8 (Appendix A) presents the interpreted groundwater elevation contours for the shallow overburden aquifer based on groundwater level data observed between January 12 to 13, 2015. Groundwater flow direction within the shallow overburden aquifer is toward the south, with southwestern and southeastern components, and is likely influenced by local topography. This interpreted flow direction agrees with regional flow interpretations provided in RRCA & SNC (2009)

3.2 PRIVATE WATER SUPPLY WELLS

Figure 5 (Appendix A) presents the location of water supply wells near the Site based on the information obtained from the MOECC WWR database. The database indicates that there are seven (7) private wells (5201579, 5202727, 5202992, 5203384, 5203417, 5203944 and 7161732) located within 500 m of the Site. All wells were completed within overburden to depths ranging from 6.1 m to 47.2 m BGS (or elevations of 63.2 m to 20.8 m AMSL) between 1979 and 2010. The construction method for four (4) of the wells (5202992, 5203384, 5203417, and 5203944) is reported as digging, with the remaining wells reported as drilled. Static water levels measured in the water wells at their time of construction ranged from 2.4 m to 15.2 m BGS (60.8 m to 74.1 m AMSL).

3.3 PRIVATE WATER WELL SURVEY

Pendleton retained CanAcre to perform a door-to-door well survey of properties located within a 300 m radius of the Site to verify the location, construction details, integrity and performance (i.e., quantity and quality) of local private water wells. CanAcre conducted the survey in December 2017, which involved asking the contacted residents a series of questions pertaining to the construction details, integrity and performance of their wells. CanAcre identified and visited 46 properties within the survey area and obtained completed forms from 21 properties. Review of the completed private well survey forms indicated that there are several shallow dug private wells located on nearby properties that are used for domestic purposes. The locations of the properties contacted during the survey and all completed forms received from the residents are provided in Appendix E.

4.0 POTENTIAL GROUNDWATER RELATED IMPACTS

4.1 CONSTRUCTION PHASE

4.1.1 Construction Dewatering

Overall, dewatering of service/utility trench excavations completed during construction may be required to manage the following events:

- Groundwater seepage into the excavation.
- Precipitation within construction area and subsequent runoff into the excavation.
- Accumulated groundwater within the excavation following a prolonged construction delay.

As described on the *Construction Plan Report* (Stantec, 2017a), the solar panels will be mounted to rack system that is positioned 0.5 m to 1.5 m above the existing grade, with the racks being supported by helical piers/piles. Helical piles are wound into the ground and, subsequently, will require no excavations for their installation. Consequently, no dewatering activities will be needed for the construction of the solar panel arrays.

The type and extent of dewatering system to be used at the excavations will be the responsibility of the Construction Contractor and may include the use of a vacuum well point system, sump/trash pumps located within the excavation, or a similar type system.

Dewatering activities are expected to be completed on an as-required basis, with the rate of this dewatering being dictated by the amount of construction activity occurring across the Site at a given time, the type of subsurface material and groundwater levels encountered in the excavations, and the elevation at which the groundwater table must be lowered to install the utilities/services. Calculations of the construction dewatering rates that could be required throughout at the Site is provided in the sections below, with these rates being largely determined using hydrogeological information obtained from the desktop background review.

The average day pumping rates for open cut trench excavation was estimated using the Dupuit-Forchheimer equations for trench/linear excavation based on calculations presented by Powers *et al.* (2007). The input parameters required for the Dupuit-Forchheimer Flow Equations include the following: length of the open trench, excavation, horizontal hydraulic conductivity of the subsurface material, the base elevation of the hydrostratigraphic unit being pumped, the static groundwater elevation, and the targeted groundwater dewatering elevation. Assumptions for the calculations are as follows and are considered conservative and based on available data:

- Stantec understands that typical trench excavations at the Site are estimated to be up to 0.5 m wide and 1.2 m deep (Stantec, 2017a), with the potential length of open trench excavation at any single time estimated to be up to 300 m

- to include as factor of safety in the dewatering estimates, the depth of dewatering is taken as 0.5 m below the maximum depth of trench (i.e. 1.7 m)

- the highest groundwater level measured in the open boreholes completed across the Site in January 2015 was 2.1 m BGS (TP14-6) (Section 3.1). The depth of the proposed utility trench excavations (i.e., 1.2 m) are planned to occur above this groundwater level. However, site visits completed by Pendleton personnel in October 2017 found that some areas of the Site were wet, suggesting that the seasonally high groundwater table may occur near ground surface. As a result, for conservative estimation purposes and considering seasonal fluctuations, a static groundwater level of 0.1 m BGS was used in the dewatering calculations.

- based on the values presented in *The Water Budget: Conceptual Understanding Report* (RRCA & SNC (2009) for the Coarse-Textured Glaciomarine Aquifer (Section 2.3), a hydraulic conductivity of 7.7 x 10^{-6} m/s was used in the dewatering calculations. This hydraulic conductivity is within the range of literature values of 10^{-7} m/s to 10^{-5} m/s for silty sands and fine sands (Fetter, 1994)

- the base of the aquifer is assumed to be 1.0 m below the maximum excavation depths, and is representative of the depth from which groundwater will be drawn during dewatering activities.

Based on the above assumptions, the average day dewatering rate from open trench excavation up to 300 m in length is estimated at 174,450 L/day. Detailed dewatering calculations are provided in Appendix F.

Dewatering above 50,000 L/day but below 400,000 L/day requires registration with the Environmental Sector and Activity Registry (EASR) of the MOECC to proceed. A Permit to Take Water (PTTW) is required for dewatering rates exceeding 400,000 L/day. As such, an EASR should be obtained for the project to provide the Contractor with flexibility, should additional dewatering be required for storm water control during a large precipitation event, or unexpected conditions that are encountered in the field. Groundwater quality will need to be reviewed in support of an EASR.

The above assumptions are considered conservative and are based on available Site data. The Contractor will be responsible to confirm dewatering conditions prior to construction, and to design and implement an appropriate dewatering system to manage discharge during the excavation activities.

A key issue of concern with the performing of groundwater dewatering activities for construction is the potential impact that pumping water from the groundwater system could have on local private water well supplies. The above dewatering calculations suggest that that the maximum horizontal extent of pumping drawdown around an open trench excavation up to 300 m in length is expected to range from seven (7) to 13.6 meters (Appendix F). Based on the Site buildable area boundary shown on Figure 1 (Appendix A), the dewatering cone of influence from a trench theoretically positioned directly along this boundary would not extend into any of the adjoining private properties. In the very unlikely event that the dewatering cone of influence were to intercept an offsite private well, the resulting drawdown interference is not expected to detrimentally impact local water quantities / well usage, given that water wells on adjoining properties are constructed to depths ranging from 7.6 m to 12.0 m BGS (Appendix F). In comparison, the required water level drawdown caused from onsite dewatering would not exceed the depth of the service/utility trench excavation of 1.2 m (based on conservative assumption that the water table that is at or near existing grade, which groundwater observations in onsite boreholes suggest is not the case; Table 1,

Appendix B). Overall, it is reasonable to assume that no notable interference impacts will occur to local private wells from temporary onsite construction dewatering activities, if such measures are required.

4.1.2 Spill Containment and Response

Incidental and unanticipated accidental spills at ground surface from activities such as the onsite refueling of vehicles or hydraulic oil leaks from equipment during construction, or various fluid leaks from vehicles utilizing the parking areas following construction, could potentially result in adverse effects to groundwater quality given that the Site is covered by surficial sand to sandy silt deposits. However, an adverse residual effect on groundwater quality at the Site is unlikely, given that if an accidental spill were to occur, it would be localized, involve a small volume of material, and have appropriate environmental management practices in place to address the spill [refer to Section 3.7 of the *Construction Plan Report* (Stantec, 2017a) and Section 5.7 of the *Design and Operations Report* (Stantec, 2017b)].

Best management protocols will be implemented at the Site to minimize the effect of potential contaminant spills at ground surface including:

- secondary containment of any fuel storage
- storage of all oils, lubricants and other chemicals in suitable containers and handling in accordance with applicable regulations
- refueling of equipment in dedicated locations away from areas located near onsite drainage pathways
- development and implementation of emergency spill response protocols.

4.2 OPERATIONAL PHASE

No changes to the shallow groundwater flow system, or volume of water moving through the shallow groundwater flow system, are anticipated from the solar development that could potentially impact recharge to the shallow aquifer system. Precipitation falling on the solar panels will flow onto the ground underlying these structures, which will have been reseeded with vegetation such as grasses and clover species (Stantec, 2017a). Consequently, this precipitation will continue to infiltrate into the native sand deposits that cover the Site, maintaining the pre-development groundwater recharge function of these lands.

The potential for accidental spills, although limited, are possible during the operational phase of the Project and, subsequently, there is the potential to impact the local groundwater quality. If an accidental spill occurs, appropriate mitigation measures are to be implemented and will be the same as described in the previous section for the construction phase (Section 4.1).

4.3 DECOMMISSIONING PHASE

No groundwater related impacts are anticipated during the decommissioning stage as there will only be minor local alterations to soil conditions during onsite activities. As during the construction phase, there is the potential for accidental spills resulting in possible groundwater contamination and proposed mitigation measures will be the same as described in the previous section (Section 4.1).

5.0 RECOMMENDED GROUNDWATER MONITORING PROGRAM

Based on the understanding of the local geological and hydrogeological conditions obtained from the findings of the desktop study for the Project, Stantec recommends that onsite groundwater monitoring wells be installed at the Site. The main concern at the Site is the shallow depth to the overburden (sand) water supply aquifer and, consequently, the limited amount of natural protection (i.e., absence of thick, low permeability overburden cover) that this aquifer has from potential surface sources of contamination. In addition, shallow dug private wells are located near the Site, with these wells obtaining their water supply from the shallow portions of sand aquifer.

The installation of onsite monitoring wells and subsequent sampling of water quality from these wells will be beneficial in that background groundwater quality conditions will be established in the shallow sand aquifer beneath the Site, which can be used to provide an additional level of information should complaints arise concerning the quality of water in nearby private wells after the start of construction.

5.1 GROUNDWATER MONITORING LOCATIONS

The recommended locations for the installation of groundwater monitoring wells at the Site are outlined below and shown on Figure 8 (Appendix A).

MW1-18 - Upgradient Location – One (1) monitoring well is proposed in the northwestern corner of the Site, as this area is interpreted to be an upgradient location (Figure 8, Appendix A). This well will provide data on the quality of groundwater flowing onto the Site and used as a baseline for comparison of groundwater quality in monitoring wells installed downgradient of the solar panel area. This well together with the other recommended monitoring well locations will provide the triangulation necessary to confirm the shallow groundwater flow direction. The groundwater table is expected to be encountered within sand at this location at depths ranging from 2 m to 5 m BGS.

MW2-18 - Downgradient Location – One (1) monitoring well is proposed in the southwestern area of the Site near the property boundary, as this area is interpreted to be a downgradient location (Figure 8, Appendix A). This well together with the other recommended monitoring well locations will provide the triangulation necessary to confirm the shallow groundwater flow direction. There is flexibility in where this monitoring well can be positioned in the southwest corner of the Site; however, the final location should be away from future construction activities. The groundwater table is expected to be encountered within sand at this location at depths ranging from 2 m to 5 m BGS.

MW3-18 - Downgradient Location – One (1) monitoring well is proposed to be in the southeastern area of the Site near the property boundary, as this area is interpreted to be a downgradient location. This well together with the other recommended monitoring well locations will provide the triangulation necessary to confirm the shallow groundwater flow direction. There is flexibility in where this monitoring well can be positioned in the southwest corner of the Site; however, the final location should be away from future

construction activities. The groundwater table is expected to be encountered within sand at this location at depths ranging from 2 m to 5 m BGS.

MW4-18 - Downgradient Location – One (1) monitoring well is proposed to be in the northeast to central area of the Site near the property boundary, as this area is interpreted to be a downgradient location. This well together with the other recommended monitoring well locations will provide the triangulation necessary to confirm the shallow groundwater flow direction. There is flexibility in where this monitoring well can be positioned along the east central property boundary area; however, the final location should be away from future construction activities. The groundwater table is expected to be encountered within sand at this location at depths ranging from 2 m to 5 m BGS.

Stantec notes that the anticipated depths to the groundwater table are only estimates based on limited data. Consequently, decisions regarding the completion depth for the monitoring well installations are to be made in the field by a qualified Hydrogeologist or Engineer specializing in hydrogeology at the time of drilling. The monitoring wells are to be installed prior to construction activities beginning at the Site.

5.2 GROUNDWATER MONITORING PROGRAM

This monitoring program presented below for the proposed onsite wells has been provided as an outline and may be subject to adjustments, with the final scope of the monitoring program ultimately being left to the discretion of the MOECC. The recommended monitoring program is as follows:

- Stantec recommends that groundwater level fluctuations in at least one of the proposed four (4) onsite monitoring wells be measured using a Solinst® LT Levelogger® or an equivalent datalogger device, which is designed to continuously record water levels at specified intervals, with manual water levels being collected from the remaining wells once per month. This information when analyzed in conjunction with local precipitation patterns will allow Pendleton to properly assess whether construction activities associated with the solar development have caused any notable impacts to groundwater quantities beneath the Site, or whether observed fluctuations are merely a function of naturally occurring seasonal atmospheric conditions.

- During the pre-construction period, Stantec recommends that one (1) water quality sample be collected from each onsite monitoring well. The collection of these samples will allow Pendleton to establish baseline water quality conditions at each well from which future sampling results can be compared. Well water samples are to be analyzed for general chemistry and metals to provide an overall understanding of existing groundwater quality.

- Once baseline water quality has been established, trigger concentrations for these parameters can be set at each of the monitoring wells and used as an early warning mechanism to identify whether groundwater quality beneath the Site is potentially at risk of being impacted by the construction and/or ongoing operation of the solar development and, subsequently, whether the implementation of mitigation measures are required before such impacts reach unacceptable levels. Stantec suggests that the trigger level for a given water quality parameter be set at the 75th percentile between the average background concentration detected in the well and the corresponding Ontario Drinking Water Standard (ODWS) for those parameters having a Maximum Acceptable Concentration (IMAC / MAC)

(i.e., health-related parameter); however, this does not preclude the using of other methods/techniques to set trigger levels as deemed appropriate by the consultant responsible for overseeing the monitoring program.

- Stantec recommends that one (1) set of samples be collected from the onsite monitoring wells during the construction phase and one (1) set of samples collected shortly after the end of the construction phase and analyzed for the same water quality parameters discussed previously (i.e. general chemistry and metals), with these results then being compared to established parameter trigger levels. If any notable changes in onsite groundwater quality are determined to be attributed to construction activities, Pendleton will contact the MOECC to discuss these results and, if necessary, the possibility of implementing mitigation measures at the Site.

- Previously described water quality sampling will continue to be performed at the onsite monitoring wells for two (2) years following the end of construction activities to ensure that there are no water quality issues associated with the operational activities of the solar facility. Water quality samples will be taken once per year over this period and compared to established parameter trigger levels. If any notable changes in onsite groundwater quality are determined to be attributed to the Project operations, Pendleton will contact the MOECC to discuss these results and, if necessary, the possibility of implementing mitigation measures at the Site.

- Pendleton will report the summary of the results of the groundwater monitoring program on an annual basis to the MOECC District Manager.

6.0 CONCLUSIONS

Based on the desktop hydrogeological investigation, the following conclusions are provided:

1. The Site is characterized by surficial deposits of sand to silty sand, with some occurrences of sandy silt that is interpreted to represent a regionally extensive coarse-textured glaciomarine stratigraphic aquifer unit. The surficial sand deposits are interpreted to be underlain by the fine-textured glaciomarine silt and clay aquitard, which was encountered at a depth of approximately 14 m BGS in a nearby private well.

2. Groundwater levels encountered in boreholes/test pits completed on Site have been measured to range from 2.1 m to 5.0 m BGS, with groundwater flow interpreted to be south with southwestern and southeastern components.

3. Construction dewatering may be required for the installation of utility/service trenches throughout the Site. Since the solar panel arrays will be mounted on racks supported by helical piers/piles, no subsurface excavations and, subsequently, dewatering activities will be required for these works. Conservative dewatering calculations suggest that the pumping rate required to remove the volume of groundwater seeping into trench excavations completed into the sandy deposits over a 300 m stretch of open trench will exceed 50,000 L/day (but remain below 400,000 L/day) and, consequently, the Construction Contractor will need to register an MOECC EASR for the project to complete these dewatering activities.

4. Review of MOECC water well records and completed private well survey forms from a door-to-door survey of properties within 300 m of the Site indicate there are several shallow dug private wells located on nearby properties that are used for domestic purposes, with these wells obtaining their water supply from the shallow portions of sand aquifer.

5. Based on the potential dewatering zone of influence and positioning of local private wells relative to the Site, no notable interference impacts are anticipated at local private wells from temporary onsite construction dewatering activities, if such works are required.

6. The main concern at the Site is the shallow overburden (sand) water supply aquifer and the lack of natural protection that this aquifer has from potential surface sources of contamination. There is potential for accidental spills to occur during the construction, operation and decommissioning phases of the project, and appropriate mitigation measures will be implemented to minimize potential to impact the local groundwater quality.

7. Installation of onsite monitoring wells and subsequent sampling of water quality from these wells is recommended and will be beneficial in establishing background groundwater quality conditions in the shallow sand aquifer beneath the Site, which can be used to provide an additional level of information should complaints arise concerning the quality of water in nearby private wells.

7.0 REFERENCES

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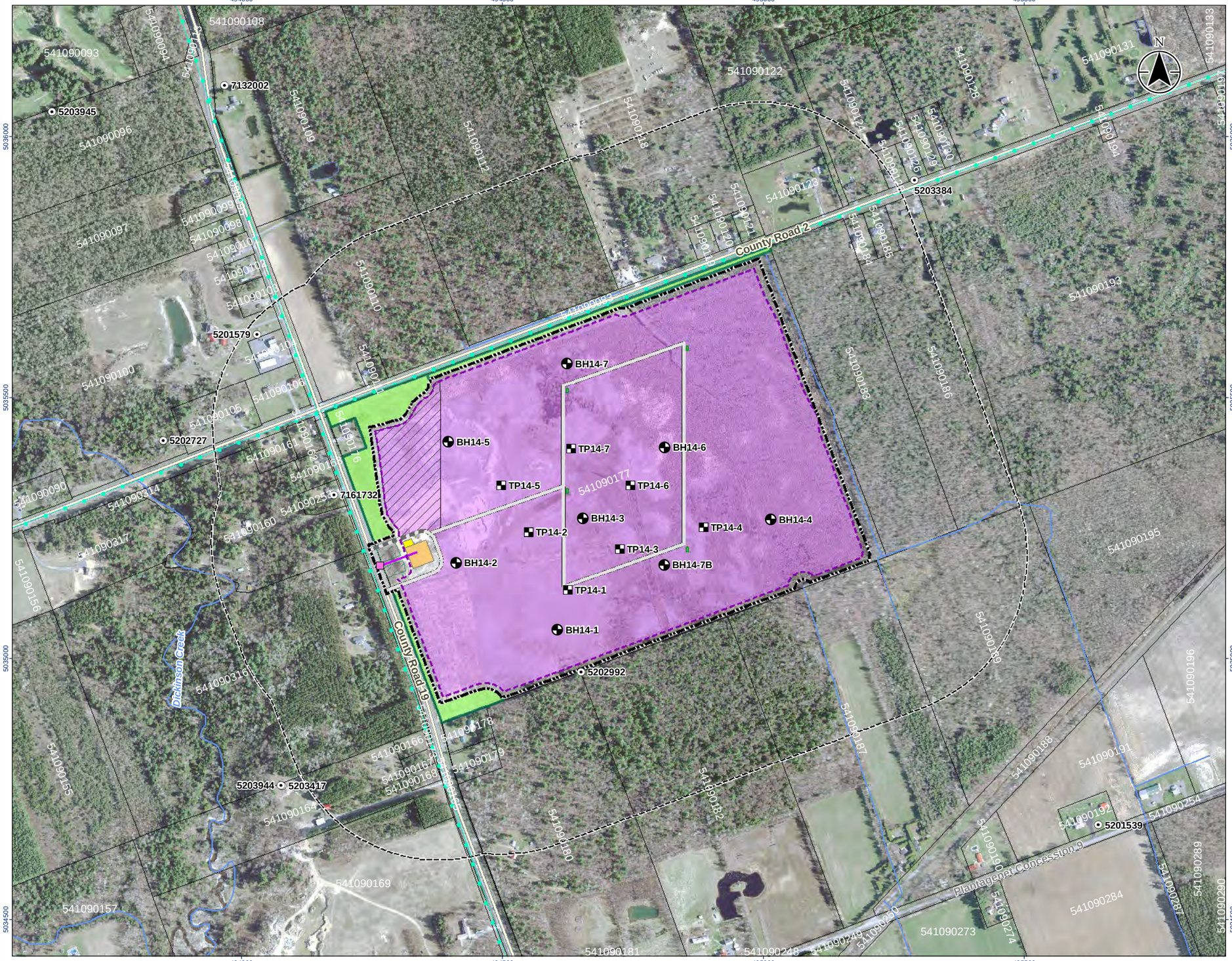
APPENDIX A:
FIGURES



Stantec

PENDLETON solar energy centre

Legend

- Borehole (Houle Chevrier, 2015)
- Test Pit (Houle Chevrier, 2015)
- MOECC Water Well

Proposed Project Components

- Point of Common Coupling
- Connection Line
- Inverter Step-up Transformer and Inverter
- Permanent Access
- Temporary Access During Construction
- 300 m from Project Location
- Buildable Area
- Operations & Maintenance Storage Area
- Project Location
- Solar Panel Area
- Substation
- Temporary Construction Laydown and Parking Area
- Tree Preservation Area
- Tree Planting Area
- Tree Planting Area (Post-Construction)

Existing / Natural Features

- Major Road
- Minor Road
- Distribution Line (Hydro One)
- Watercourse
- Property Boundary and PIN
- Waterbody

0 200 400 m

1:7,500 (At original document size of 11x17)

Notes

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3. Imagery Source: Ontario Ministry of Natural Resources and Forestry. Digital Raster Acquisition Project East 2014 (DRAPE2014)
4. Waterbody and watercourse mapping within 120 m of the Project Location has been updated based on field studies completed as part of the REA process under O. Reg. 359/09. See the Water Assessment and Water Body Report for details.
5. MOECC Water Well locations have been positioned based on published UTM coordinates and should be considered approximate.

Project Location
United Counties of Prescott and Russell

160950912 REVF
Prepared by SE on 2017-12-21
Technical Review by RN on 2016-12-08
Independent Review by RN on 2016-12-08

Client/Project
PENDLETON ENERGY CENTRE LP
PENDLETON SOLAR ENERGY CENTRE
DESKTOP HYDROGEOLOGICAL INVESTIGATION

Figure No.
1

Title
Site Location

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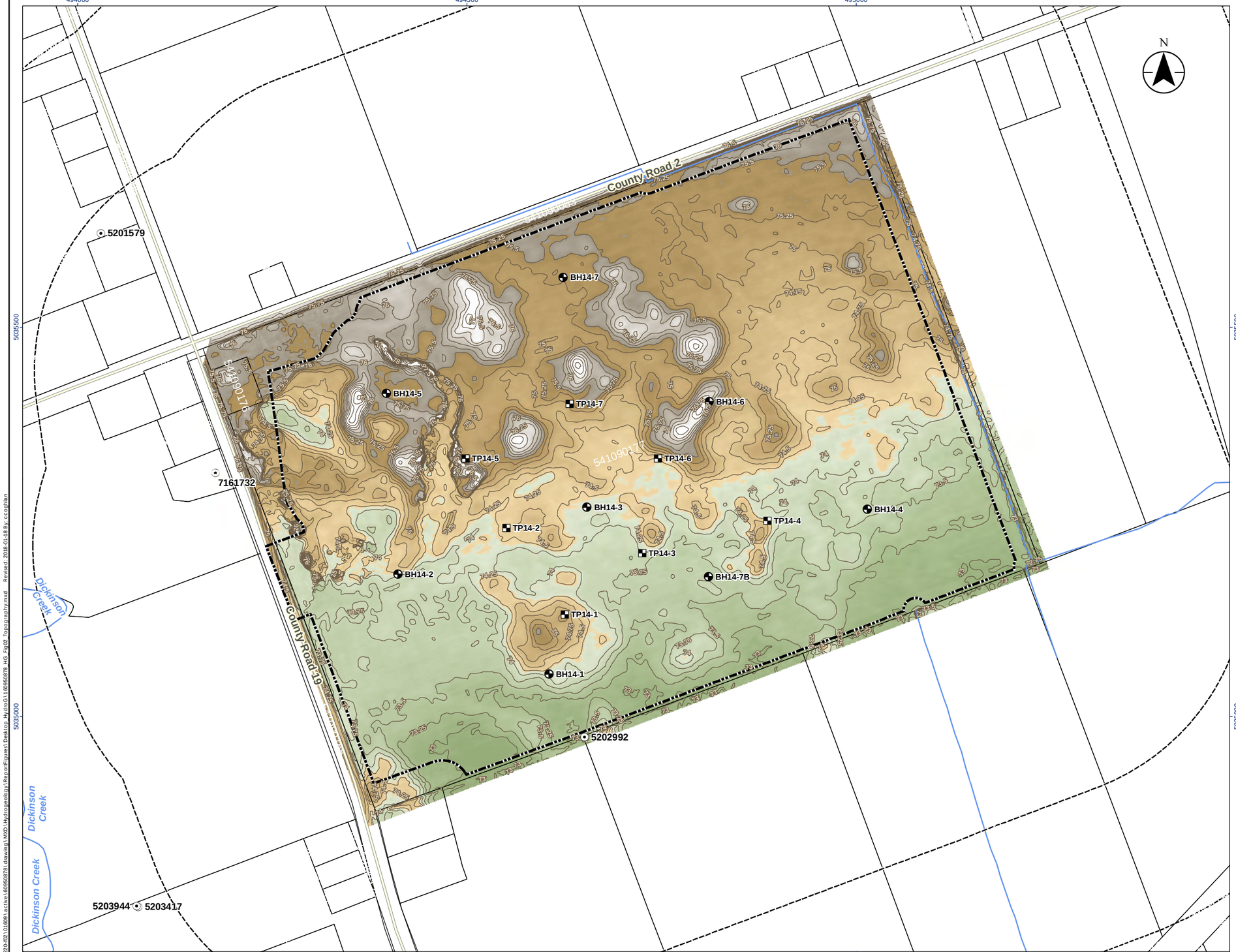

Stantec | PENDLETON solar energy centre

- Borehole (Houle Chevrier, 2015)
- Test Pit (Houle Chevrier, 2015)
- MOECC Water Well
- Project Location
- 300 m from Project Location
- 500m Buffer from Project Location

Existing / Natural Features

- Major Road
- Topographic Contour (mAMSL)
- Watercourse
- Property Boundary and PIN
- Waterbody

Ground Surface Elevation (mAMSL)

78.3
71.6

0 100 200 m

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Notes

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5. MOECC Water Well locations have been positioned based on published UTM coordinates and should be considered approximate.
6. Topography data as captured by RME Geographics UAV survey, August 24, 2017.

Project Location
United Counties of Prescott and Russell

160950912 REVF
Prepared by SE on 2018-01-18
Technical Review by RN on 2016-12-08
Independent Review by RN on 2016-12-08

Client/Project
PENDLETON ENERGY CENTRE LP
PENDLETON SOLAR ENERGY CENTRE
DESKTOP HYDROGEOLOGICAL INVESTIGATION

Figure No.
2

Title
Surficial Geology

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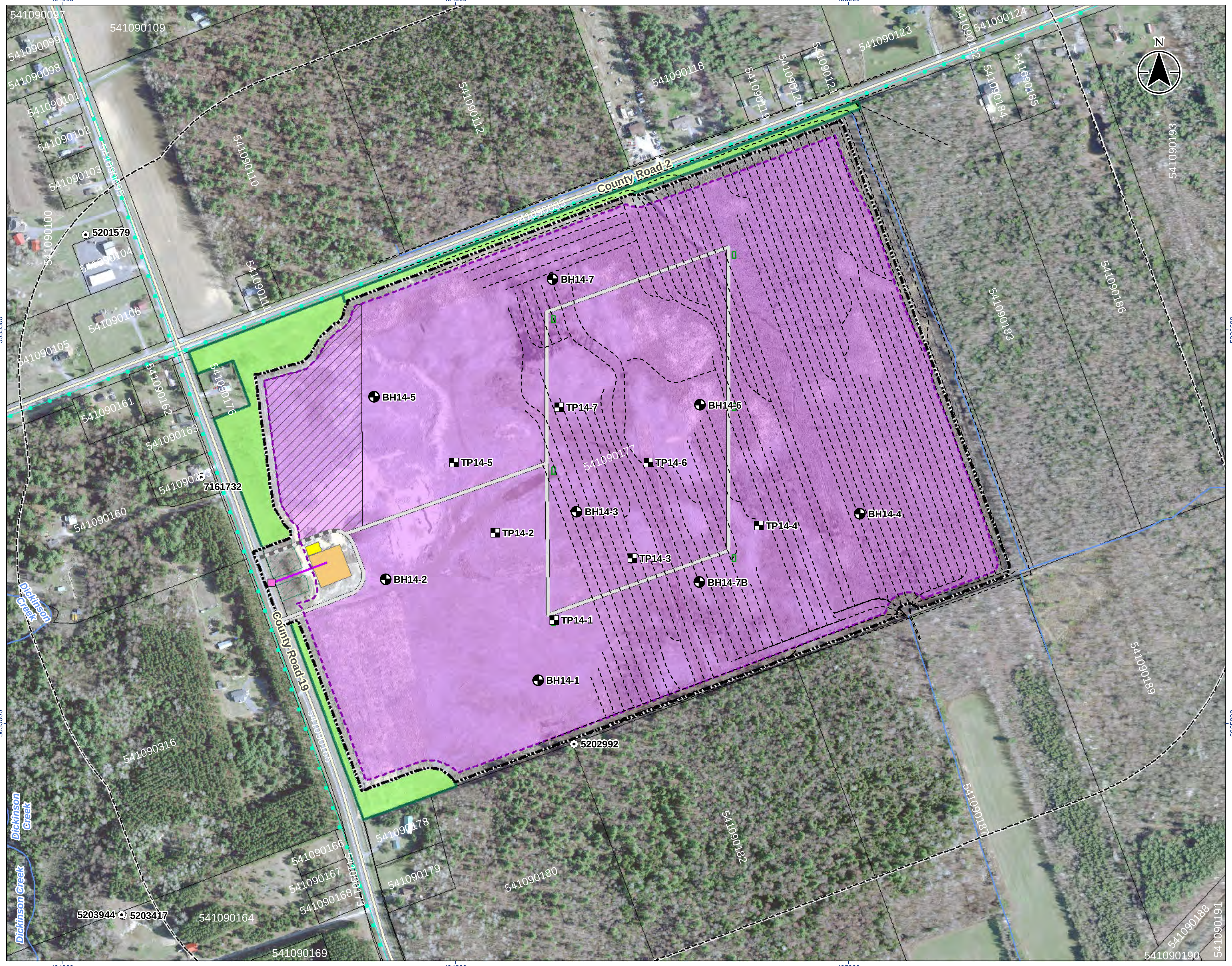

Stantec
PENDLETON solar energy centre

Legend

- Borehole (Houle Chevrier, 2015)
- Test Pit (Houle Chevrier, 2015)
- MOECC Water Well
- Tile Drainage Network

Proposed Project Components

- Point of Common Coupling
- Connection Line
- Inverter Step-up Transformer and Inverter
- Permanent Access
- Temporary Access During Construction
- 300 m from Project Location
- Buildable Area
- Operations & Maintenance Storage Area
- Project Location
- Solar Panel Area
- Substation
- Temporary Construction Laydown and Parking Area
- Tree Preservation Area
- Tree Planting Area
- Tree Planting Area (Post-Construction)

Existing / Natural Features

- Major Road
- Distribution Line (Hydro One)
- Watercourse
- Property Boundary and PIN
- Waterbody

0 100 200 m

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Notes

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Project Location
United Counties of Prescott and Russell

160950912 REVF
Prepared by SE on 2018-01-18
Technical Review by RN on 2016-12-08
Independent Review by RN on 2016-12-08

Client/Project
PENDLETON ENERGY CENTRE LP
PENDLETON SOLAR ENERGY CENTRE
DESKTOP HYDROGEOLOGICAL INVESTIGATION

Figure No.
3

Title
Tile Drainage Network

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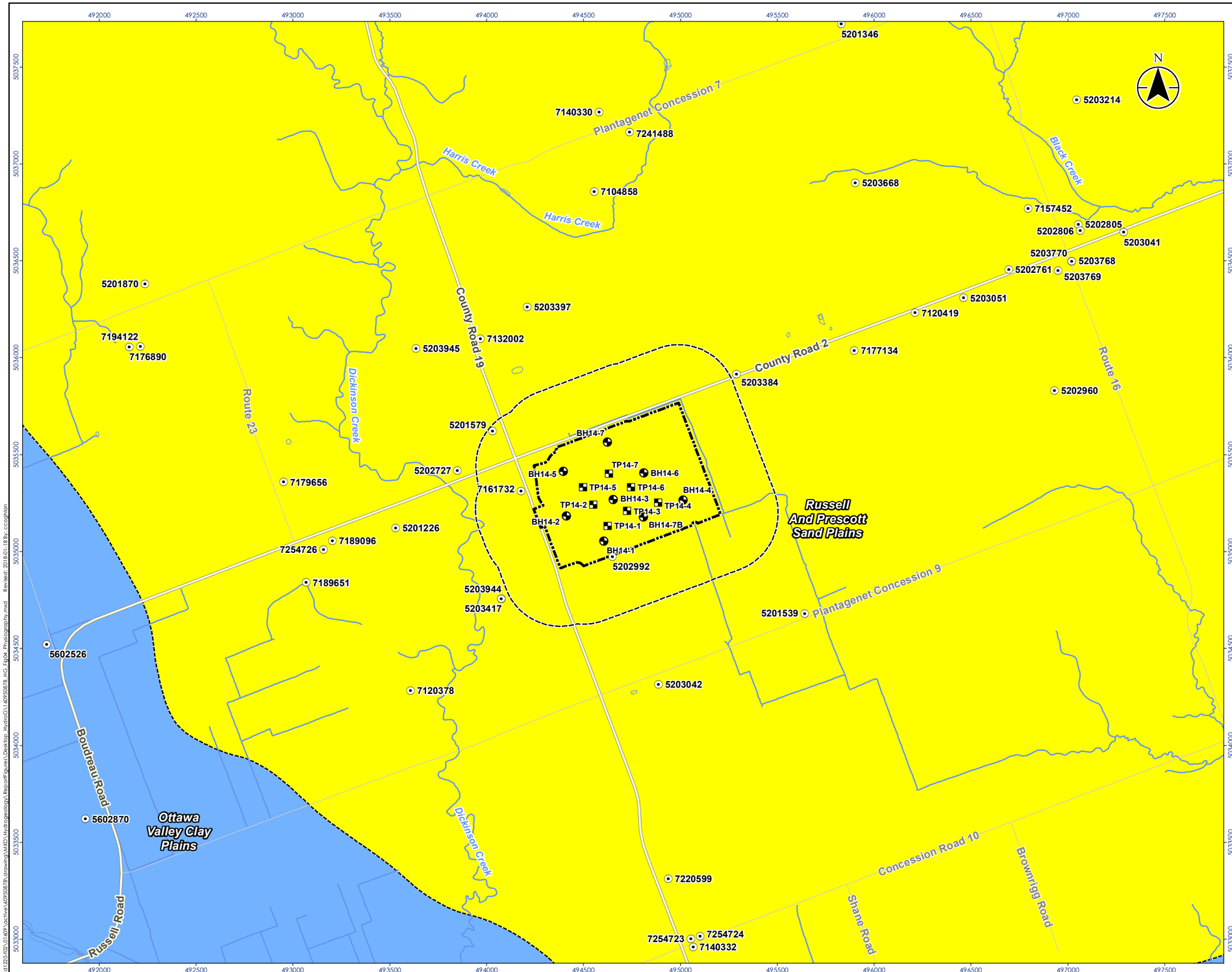

Stantec

PENDLETON solar energy centre

Legend

- Borehole (Houle Chevrier, 2015)
- Test Pit (Houle Chevrier, 2015)
- MOECC Water Well
- 300 m from Project Location
- Project Location

Existing / Natural Features

- Major Road
- Minor Road
- Watercourse
- Waterbody

Physiography

- 12: Clay Plains
- 11: Sand Plains
- Physiographic Region Boundary

0 500 1,000 m

1:20,000 (At original document size of 11x17)

Notes

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6. Chapman, L.J. and Putnam, D.F. 2007. Physiography of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 228.

Project Location
United Counties of Prescott and Russell

160950912 REVF
Prepared by SE on 2018-01-18
Technical Review by RN on 2016-12-08
Independent Review by RN on 2016-12-08

Client/Project
PENDLETON ENERGY CENTRE LP
PENDLETON SOLAR ENERGY CENTRE
DESKTOP HYDROGEOLOGICAL INVESTIGATION

Figure No.
4

Title
Physiography

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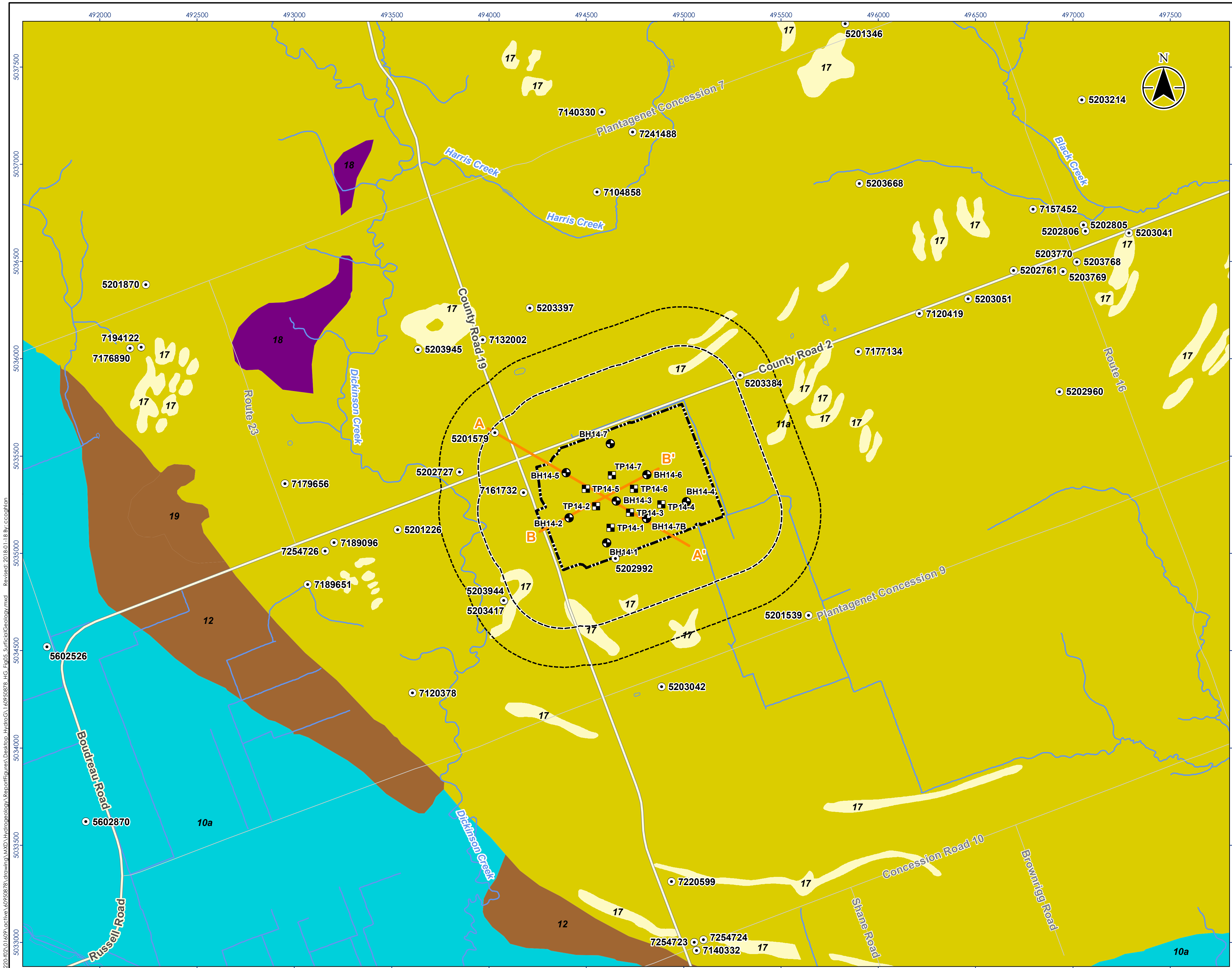

- Borehole (Houle Chevrier, 2015)
- Test Pit (Houle Chevrier, 2015)
- MOECC Water Well
- Project Location
- 300 m from Project Location
- 500m Buffer from Project Location
- Cross Section Location

Existing / Natural Features

- Major Road
- Minor Road
- Watercourse
- Waterbody

Surficial Geology

- 19: Modern alluvial deposits
- 18: Colluvial deposits
- 17: Eolian deposits
- 12: Older alluvial deposits
- 11a: Coarse-textured glaciomarine deposits (Deltaic deposits)
- 10a: Fine-textured glaciomarine deposits (Massive-well laminated)

0 500 1,000 m

1:20,000 (At original document size of 11x17)

Notes

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6. Ontario Geological Survey 2010. Surficial geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data 128-REV ISBN 978-1-4435-2483-4

Project Location
United Counties of
Prescott and Russell

160950912 REVF
Prepared by SE on 2018-01-18
Technical Review by RN on 2016-12-08
Independent Review by RN on 2016-12-08

Client/Project
PENDLETON ENERGY CENTRE LP
PENDLETON SOLAR ENERGY CENTRE
DESKTOP HYDROGEOLOGICAL INVESTIGATION

Figure No.
5

Title
Surficial Geology

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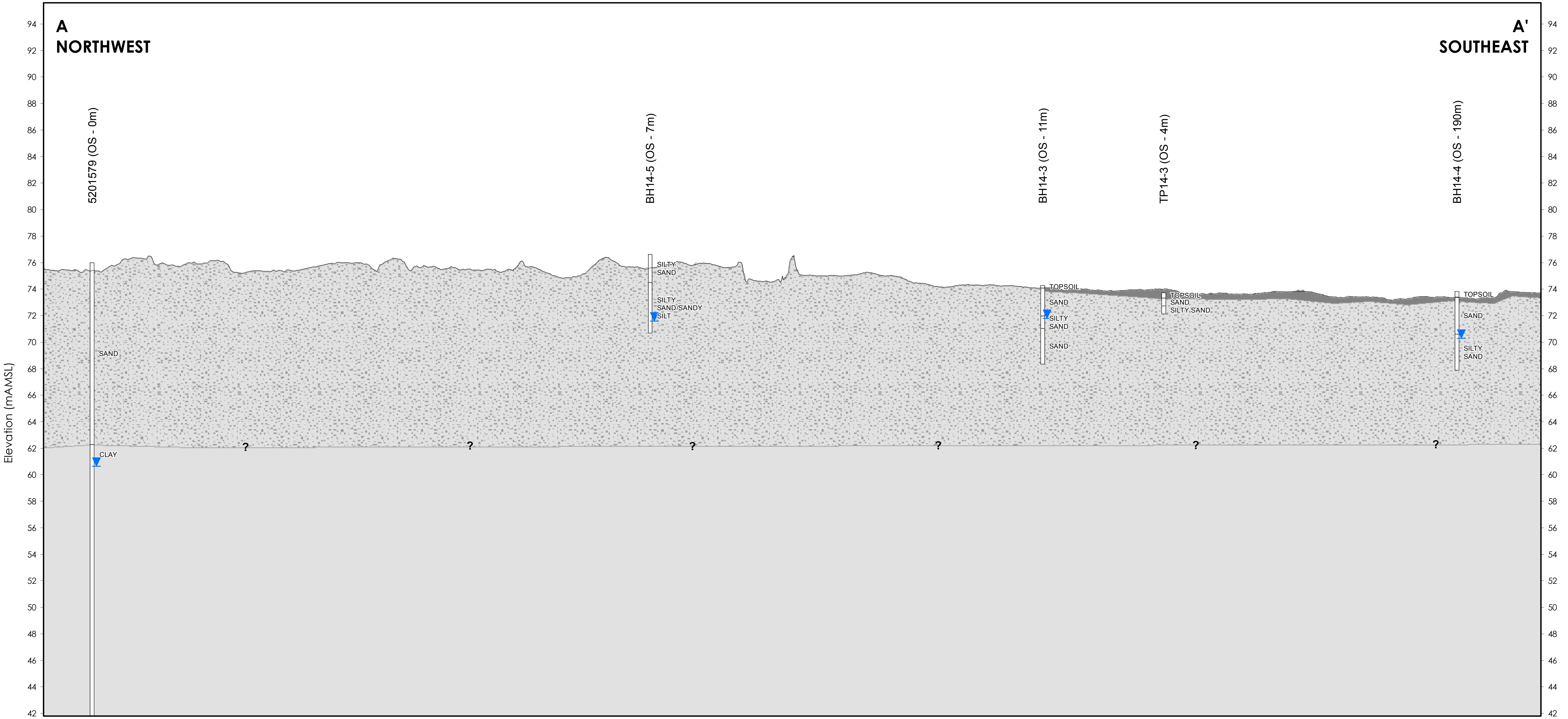

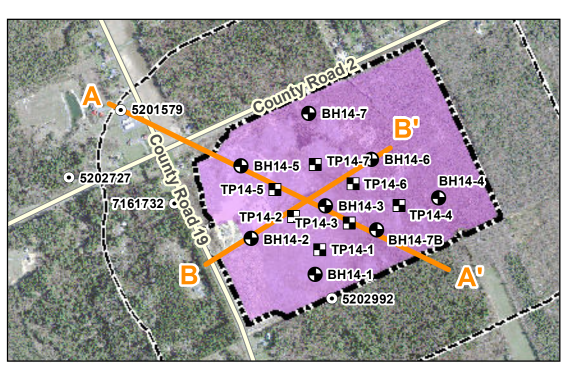

MW1-15 (OS m) — Well ID (Offset)

Sand — Stratigraphy

Water Level

Well Screen

Topsoil

Sand/Silty Sand to Sandy Silt

Clay

10x Vertical Exaggeration

0 50 100 metres

1:3,000 (At original document size of 11x17)

Stantec

Project Location
United Counties of Prescott and Russell

160950912 REVA
Prepared by ccoghlan on 2018-01-18
Technical Review by KML on 2017-06-21

Client/Project
PENDLETON ENERGY CENTRE LP
PENDLETON SOLAR ENERGY CENTRE
DESKTOP HYDROGEOLOGICAL INVESTIGATION

Figure No.
6

Title
Cross Section A-A'

Notes
1.

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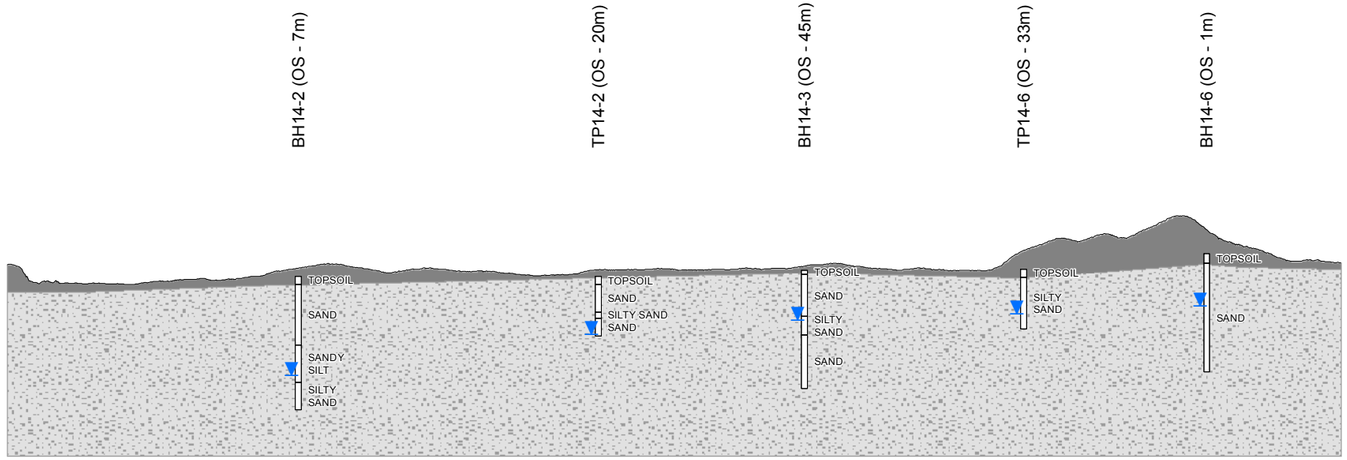
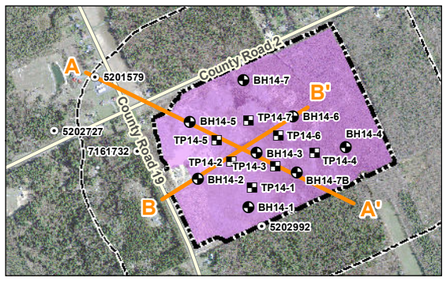
B
SOUTHWEST

B'
NORTHEAST

Elevation (mAMSL)





MW1-15 (OS m)

Sand

Well ID (Offset)

Stratigraphy

Water Level

Well Screen

Topsoil

Sand/Silty Sand to Sandy Silt

Clay

10x Vertical Exaggeration

0 50 100 metres

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Notes

1.

Stantec

Project Location
United Counties of
Prescott and Russell

160950912 REVA
Prepared by ccoghlan on 2018-01-18
Technical Review by KML on 2017-06-21

Client/Project
PENDLETON ENERGY CENTRE LP
PENDLETON SOLAR ENERGY CENTRE
DESKTOP HYDROGEOLOGICAL INVESTIGATION

Figure No.
7

Title
Cross Section B-B'

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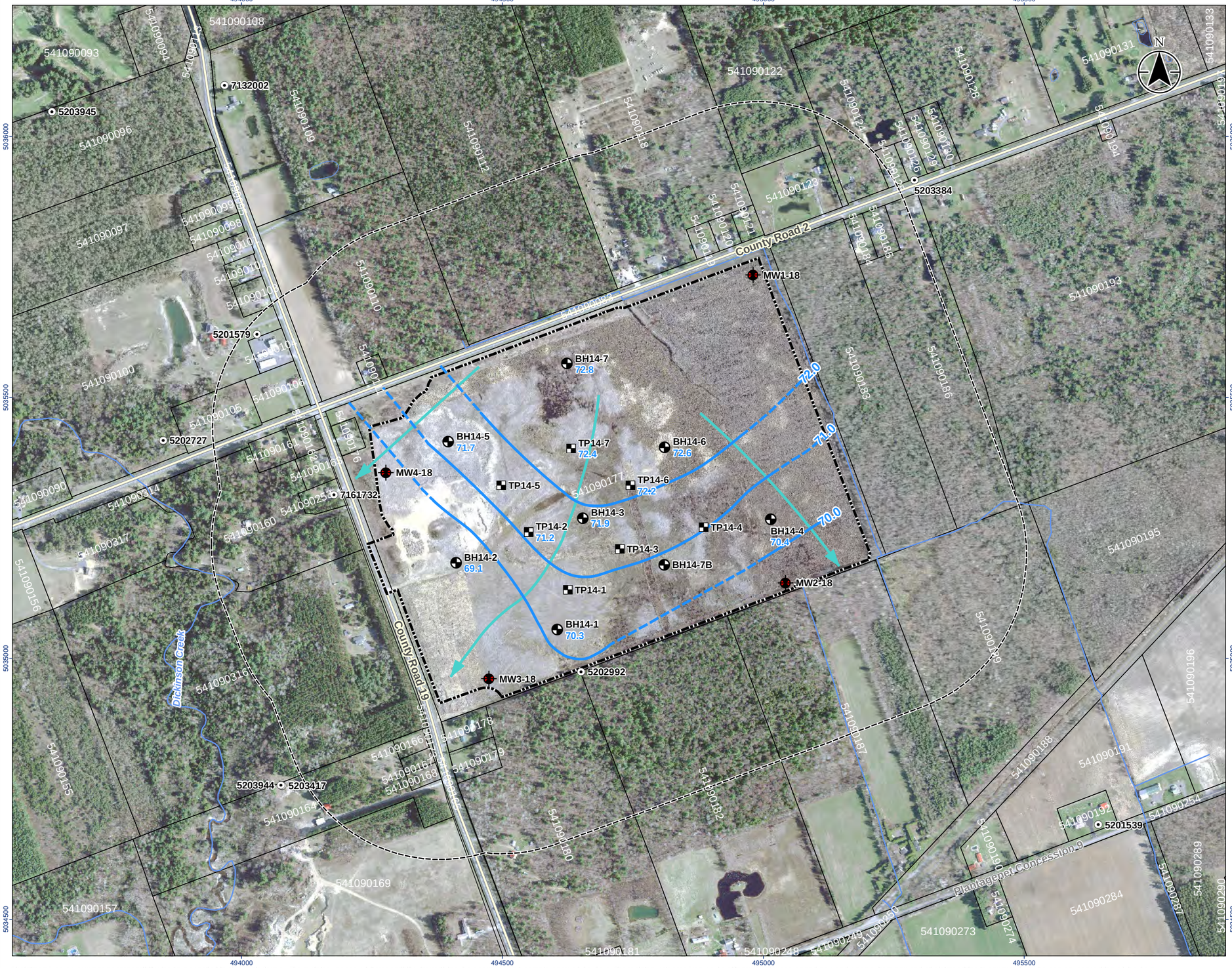

Stantec

PENDLETON solar energy centre

Legend

- Borehole (Houle Chevrier, 2015)
- Test Pit (Houle Chevrier, 2015)
- Proposed Monitoring Well
- MOECC Water Well
- 300 m from Project Location
- Project Location
- 77.54 Groundwater Elevation (mAMSL) - January 2015
- Groundwater Contour (mAMSL)
- Interpreted Direction of Groundwater Flow

Existing / Natural Features

- Major Road
- Minor Road
- Watercourse
- Property Boundary and PIN
- Waterbody

0 200 400 m

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Notes

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Project Location
United Counties of Prescott and Russell

160950912 REVF
Prepared by SE on 2018-01-19
Technical Review by RN on 2016-12-08
Independent Review by RN on 2016-12-08

Client/Project
PENDLETON ENERGY CENTRE LP
PENDLETON SOLAR ENERGY CENTRE
DESKTOP HYDROGEOLOGICAL INVESTIGATION

Figure No.
8

Title
Groundwater Flow

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APPENDIX B:
TABLES

TABLE 1
GROUNDWATER LEVEL DATA
PENDLETON SOLAR ENERGY CENTRE
DESKTOP HYDROGEOLOGICAL INVESTIGATION

Borehole / Test Pit ID	UTM Coordinates		Date	Borehole / Test Pit Depth		Ground Surface Elevation	Groundwater Level	
	Northing	Easting		(m BGS)	(m AMSL)	(m AMSL)	(m BGS)	(m AMSL)
BH14-1	5035055	494605	13-Jan-15	5.9	68.1	74.0	3.7	70.3
BH14-2	5035183	494411	12-Jan-15	6.7	67.3	74.0	4.9	69.1
BH14-3	5035269	494654	12-Jan-15	5.9	68.3	74.3	2.4	71.9
BH14-4	5035266	495014	13-Jan-15	5.9	67.9	73.8	3.5	70.3
BH14-5	5035415	494397	12-Jan-15	5.9	70.7	76.6	5.0	71.6
BH14-6	5035405	494811	13-Jan-15	5.9	69.2	75.1	2.5	72.6
BH14-7	5035564	494624	12-Jan-15	5.9	69.4	75.4	2.5	72.9
TP14-2	5035242	494551	12-Jan-15	3.0	71.0	74.0	2.8	71.2
TP14-6	5035332	494746	12-Jan-15	3.0	71.3	74.3	2.1	72.2
TP14-7	5035402	494632	12-Jan-15	3.0	72.4	75.4	3.0	72.4

Notes:

m BGS = meters below ground surface
m AMSL = meters above mean sea level
All data summarized from Houle Chevrier Engineering (HCE, 2015) Preliminary Geotechnical Investigation Report

APPENDIX C:
MOECC WATER WELL RECORDS

MOECC WWR (WELL DETAILS)

BORE_HOLE_ID	WELL_ID	AUDIT_NO	TAG	ZONE	EAST	NORTH	BOT_DPTH	GRND_ELEV	BOT_ELEV	FINAL_STA	Use1	Use2	DATE_COMPLETED	METHOD	County	Township	Expr1	Expr2	LOT	STREET	CITY
10348304	5201579			18	494030	5035621	46.63439941	75.992286	29.35788659	1	Domestic		18-Oct-79	Cable Tool	PRESCOTT	NORTH PLANTAGENET TOWNSHIP	CON	07	021		
10349444	5202727	117790		18	493850	5035418	47.24399948	68.069274	20.82527452	1	Domestic		22-Jul-92	Cable Tool	PRESCOTT	NORTH PLANTAGENET TOWNSHIP	CON	07	021		
10349708	5202992	120359		18	494651	5034974	4.87680006	74.483634	69.60683394	1	Domestic		26-Oct-94	Digging	PRESCOTT	NORTH PLANTAGENET TOWNSHIP	CON	08	020		
10350099	5203384	184216		18	495290	5035916	6.096000195	77.12899	71.03298981	1	Domestic		21-Jun-99	Digging	PRESCOTT	NORTH PLANTAGENET TOWNSHIP	CON	07	018		
10350131	5203417	191104		18	494078	5034756	7.924799919	71.340835	63.41603508	1	Domestic		09-Sep-99	Digging	PRESCOTT	NORTH PLANTAGENET TOWNSHIP	CON	08	021		
11107235	5203944	Z01821	A001740	18	494075.8	5034757	8	71.15789	63.15789	1	Domestic		01-Dec-03	Digging	PRESCOTT	NORTH PLANTAGENET TOWNSHIP	CON	08	021		
1003495523	7161732	Z113471	A098901	18	494177	5035313	6.705600262	75.536636	68.83103574	1	Domestic		08-Jun-10	Driving	PRESCOTT	NORTH PLANTAGENET TOWNSHIP	CON	08	021	821 COUNTY RD 19	CARRAN

MOECC WWR (LITHOLOGY)

BORE_HOLE_ID	WELL_ID	EAST	NORTH	GRND_ELEV	TOP_DPTH	BOT_DPTH	TOP_ELEV	BOT_ELEV	MAT1	MAT2	MAT3	COLOUR
10348304	5201579	494030	5035621	75.992286	0	13.716	75.992286	62.276286	SAND	LOOSE		BROWN
10348304	5201579	494030	5035621	75.992286	13.716	42.0624	62.276286	33.929886	CLAY	SOFT		GREY
10348304	5201579	494030	5035621	75.992286	42.0624	46.0248	33.929886	29.967486	GRAVEL	CLAY	SAND	GREY
10348304	5201579	494030	5035621	75.992286	46.0248	46.6344	29.967486	29.357886	UNKNOWN TYPE			
10349444	5202727	493850	5035418	68.069274	0	42.672	68.069274	25.397274	PREV. DRILLED			
10349444	5202727	493850	5035418	68.069274	42.672	47.244	25.397274	20.825274	GRAVEL	LOOSE		GREY
10349708	5202992	494651	5034974	74.483634	0	1.8288	74.483634	72.654834	SAND	TOPSOIL		BROWN
10349708	5202992	494651	5034974	74.483634	1.8288	4.8768	72.654834	69.606834	SAND			GREY
10350099	5203384	495290	5035916	77.12899	0	0.3048	77.12899	76.82419	TOPSOIL			BROWN
10350099	5203384	495290	5035916	77.12899	0.3048	1.2192	76.82419	75.90979	SAND			YELLOW
10350099	5203384	495290	5035916	77.12899	1.2192	6.096	75.90979	71.03299	SAND			GREY
10350131	5203417	494078	5034756	71.340835	0	3.6576	71.340835	67.683235	TOPSOIL			BROWN
10350131	5203417	494078	5034756	71.340835	3.6576	7.9248	67.683235	63.416035	SAND			GREY
11107235	5203944	494075.8	5034757	71.15789	0	2.5	71.15789	68.65789	TOPSOIL			BROWN
11107235	5203944	494075.8	5034757	71.15789	2.5	8	68.65789	63.15789	SAND			WHITE
1003495523	7161732	494177	5035313	75.536636	0	0.3048	75.536636	75.231836	TOPSOIL			BROWN
1003495523	7161732	494177	5035313	75.536636	0.3048	1.2192	75.231836	74.317436	SAND			YELLOW
1003495523	7161732	494177	5035313	75.536636	1.2192	6.7056	74.317436	68.831036	SAND			WHITE

MOECC WWR (CASING)

BORE_HOLE_ID	PIPE_ID	CASING_ID	WELL_ID	Diameter_cm	Depth_m	casing_material
10348304	10896874	930572590	5201579	15.23999977	45.72000122	STEEL
10349444	10898014	930574147	5202727	15.23999977	47.24399948	STEEL
10349708	10898278	930574538	5202992	91.44000244	4.87680006	CONCRETE
10350099	10898669	930575153	5203384	91.44000244	6.096000195	CONCRETE
10350131	10898701	930575208	5203417	91.44000244	7.924799919	CONCRETE
11107235	11114258	930840357	5203944	90	6	PLASTIC
1003495523	1003868339	1003868345	7161732	3.174999952	6.705600262	STEEL

MOECC WWR (PUMP TEST)

BORE_HOLE_ID	WELL_ID	PIPE_ID	well_type	DP2BR	Well_Depth_m	Static_WL	FinalLevAfterPumping_m	Pumping_rate	Pump_Duration_HR	Recom_rate	Rate_UOM	Recom_pump_depth_m	ScreenID	TopOfScreen	BottomOfScreen
10348304	5201579	10896874	Overburden		46.63439941	15.24	32.004	10	1	5	GPM	36.576			
10350131	5203417	10898701	Overburden		7.924799919		6.096	3	1	4	GPM	1.2192			
10350099	5203384	10898669	Overburden		6.096000195	3.048	6.096	5	4		GPM				
10349708	5202992	10898278	Overburden		4.87680006	2.4384	3.3528	4	1	4	GPM	4.572			
10349444	5202727	10898014	Overburden		47.24399948	4.2672	6.096	6	24	5	GPM	24.384			

APPENDIX D:
BOREHOLE AND TEST PIT LOGS

RECORD OF BOREHOLE 14-1

PROJECT: 14-580

LOCATION: See Borehole Location Plan, Figure 2

BORING DATE: January 13, 2015

SHEET 1 OF 1

DATUM: Geodetic

SPT HAMMER: 63.5 drop 0.76 metres

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m
0	Power Auger 200 mm Diameter Hollow Stem	Ground Surface		74.00			
		Dark brown silty sand, some organic material (TOPSOIL)		73.69 0.31	1	50 D.O.	35
1		Compact, brown, fine to medium grained SAND, trace silt			2	50 D.O.	10
				72.22 1.78	3	50 D.O.	11
2		Compact, brown, fine to medium grained SAND, some silt					
				71.56 2.44	4	50 D.O.	8
3		Very loose to loose, grey brown SILTY SAND			5	50 D.O.	4
4				69.94 4.06	6	50 D.O.	4
		Very loose to loose, brown, fine to medium grained SAND, some silt			7	50 D.O.	2
5					8	50 D.O.	3
6		End of Borehole		68.06 5.94			
7							
8							

DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m: 20 40 60 80

SHEAR STRENGTH Cu, kPa: 20 40 60 80 — nat. V - + Q - ● — rem. V - ⊕ U - ○

HYDRAULIC CONDUCTIVITY, k, cm/s: 10^{-7} 10^{-6} 10^{-5} 10^{-4}

WATER CONTENT, PERCENT: Wp 20 — W 40 60 — WI 80

ADDITIONAL LAB. TESTING

PIEZOMETER OR STANDPIPE INSTALLATION

Borehole backfilled with auger cuttings

Water level in augers 3.71m below ground surface upon completion of borehole (Elevation 70.29 metres)

DEPTH SCALE

1 to 40

Houle Chevrier Engineering

LOGGED: A.N.

CHECKED:

BOREHOLE RECORD 2012 WITH LAB WC 14580 BOREHOLE LOGS GNT V01 2015-01-14.GPJ 2-20-15

PROJECT: 14-580

RECORD OF BOREHOLE 14-2

SHEET 1 OF 1

LOCATION: See Borehole Location Plan, Figure 2

DATUM: Geodetic

BORING DATE: January 12, 2015

SPT HAMMER: 63.5 drop 0.76 metres

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (20 40 60 80) nat. V - + Q - ● rem. V - ⊕ U - ○	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-7} 10^{-6} 10^{-5} 10^{-4}) / WATER CONTENT, PERCENT (Wp W Wl; 20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	Power Auger 200 mm Diameter Hollow Stem	Ground Surface		73.99							
		Dark brown clayey silt, some organic material (TOPSOIL)		73.58 / 0.41	1	50 D.O.	26				Borehole backfilled with auger cuttings
1		Compact, brown, fine grained SAND, trace silt and clay			2	50 D.O.	10			MH, refer to Fig. A1	
					3	50 D.O.	10				
2					4	50 D.O.	12				
3				70.54 / 3.45	5	50 D.O.	6				
		Very loose, grey brown SANDY SILT, some clay			6	50 D.O.	4				
4											
					7	50 D.O.	2			MH, refer to Fig. A1	
5				68.66 / 5.33							
		Very loose to loose, grey SILTY SAND			8	50 D.O.	4				
6					9	50 D.O.	9				
				67.28 / 6.71							
		End of Borehole									Water level in augers 4.86m below ground surface upon completion of borehole (Elevation 69.13 metres)
7											
8											

DEPTH SCALE

1 to 40

Houle Chevrier Engineering

LOGGED: A.N.

CHECKED:

BOREHOLE RECORD 2012 WITH LAB WC 14580_BOREHOLE LOGS_GNT_V01_2015-01-14.GPJ 2-20-15

PROJECT: 14-580

RECORD OF BOREHOLE 14-3

SHEET 1 OF 1

LOCATION: See Borehole Location Plan, Figure 2

DATUM: Geodetic

BORING DATE: January 12, 2015

SPT HAMMER: 63.5 drop 0.76 metres

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat. V - +, rem. V - ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-7} 10^{-6} 10^{-5} 10^{-4}) / WATER CONTENT, PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	Power Auger 200 mm Diameter Hollow Stem	Ground Surface		74.28							
		Dark brown sandy silt, some organic material (TOPSOIL)		74.10 / 0.18							
		Compact, grey brown, fine to medium grained SAND, some silt			1	50 D.O.	16				
1					2	50 D.O.	10		W at 1 m		
					3	50 D.O.	12				
2				71.99 / 2.29							
		Very loose, grey brown SILTY SAND			4	50 D.O.	4				
3				71.05 / 3.23							
		Very loose, grey brown, fine to medium grained SAND, trace to some silt			5	50 D.O.	3		W at 3.5 m		
4					6	50 D.O.	2				
					7	50 D.O.	2				
5					8	50 D.O.	2				
6		End of Borehole		68.34 / 5.94							Water level in augers 2.43m below ground surface upon completion of borehole (Elevation 71.85 metres)
7											
8											

Borehole backfilled with auger cuttings

DEPTH SCALE

1 to 40

Houle Chevrier Engineering

LOGGED: A.N.

CHECKED:

BOREHOLE RECORD 2012 WITH LAB WC 14580_BOREHOLE LOGS_GNT_V01_2015-01-14.GPJ 2-20-15

PROJECT: 14-580

RECORD OF BOREHOLE 14-4

SHEET 1 OF 1

LOCATION: See Borehole Location Plan, Figure 2

DATUM: Geodetic

BORING DATE: January 13, 2015

SPT HAMMER: 63.5 drop 0.76 metres

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (20 40 60 80) nat. V - + Q - ● rem. V - ⊕ U - ○	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-7} 10^{-6} 10^{-5} 10^{-4}) / WATER CONTENT, PERCENT (Wp W Wl 20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	Power Auger 200 mm Diameter Hollow Stem	Ground Surface		73.84							
		Dark brown sandy silt, some organic material (TOPSOIL)		73.41	1	50 D.O.	21				
				0.43							
1		Compact, grey brown, fine to medium grained SAND, some silt			2	50 D.O.	19		○		
2					3	50 D.O.	15				
					4	50 D.O.	3				
3				70.61							
		Very loose, grey SILTY SAND, some clay		3.23	5	50 D.O.	1		●		
4					6	50 D.O.	W.H.				
5					7	50 D.O.	2				
					8	50 D.O.	3			MH, refer to Fig. A1	
6		End of Borehole		67.90 5.94							Borehole backfilled with auger cuttings Water level in augers 3.45m below ground surface upon completion of borehole (Elevation 70.39 metres)
7											
8											

DEPTH SCALE

1 to 40

Houle Chevrier Engineering

LOGGED: A.N.

CHECKED:

BOREHOLE RECORD 2012 WITH LAB WC 14580 BOREHOLE LOGS GNT V01 2015-01-14.GPJ 2-20-15

PROJECT: 14-580

RECORD OF BOREHOLE 14-5

SHEET 1 OF 1

LOCATION: See Borehole Location Plan, Figure 2

DATUM: Geodetic

BORING DATE: January 12, 2015

SPT HAMMER: 63.5 drop 0.76 metres

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (20 40 60 80) nat. V - + Q -● rem. V -⊕ U -○	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-7} 10^{-6} 10^{-5} 10^{-4}) / WATER CONTENT, PERCENT (Wp W Wl, 20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	Power Auger 200 mm Diameter Hollow Stem	Ground Surface		76.63							
		Very loose to loose, grey brown SILTY SAND, some clay			1	50 D.O.	37				Borehole backfilled with auger cuttings
1					2	50 D.O.	3				
2					3	50 D.O.	9			MH, refer to Fig. A1	
				74.50 / 2.13							
		Compact to very loose, grey brown SILTY SAND / SANDY SILT, trace to some clay			4	50 D.O.	15				
3					5	50 D.O.	10				
4					6	50 D.O.	5				
5					7	50 D.O.	3			MH, refer to Fig. A1	
					8	50 D.O.	4				
6		End of Borehole		70.69 / 5.94							Water level in augers 4.95 m below ground surface upon completion of borehole (Elevation 71.68 metres)
7											
8											

DEPTH SCALE

1 to 40

Houle Chevrier Engineering

LOGGED: A.N.

CHECKED:

BOREHOLE RECORD 2012 WITH LAB WC 14580_BOREHOLE LOGS_GNT_V01_2015-01-14.GPJ 2-20-15

PROJECT: 14-580

RECORD OF BOREHOLE 14-6

SHEET 1 OF 1

LOCATION: See Borehole Location Plan, Figure 2

DATUM: Geodetic

BORING DATE: January 13, 2015

SPT HAMMER: 63.5 drop 0.76 metres

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat. V - +, rem. V - ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-7} 10^{-6} 10^{-5} 10^{-4}) / WATER CONTENT, PERCENT (Wp, W, Wl; 20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	Power Auger 200 mm Diameter Hollow Stem	Ground Surface		75.12							
		Dark brown sandy silt, some organic material (TOPSOIL)		74.66	1	50 D.O.	39				Borehole backfilled with auger cuttings
				0.46							
1		Compact to very loose, grey brown, fine to medium grained SAND, trace to some silt			2	50 D.O.	14				
2					3	50 D.O.	13				
3					4	50 D.O.	8				
4					5	50 D.O.	4				
5					6	50 D.O.	5				
					7	50 D.O.	3				
6		End of Borehole		69.18 5.94	8	50 D.O.	5				Water level in augers 2.49m below ground surface upon completion of borehole (Elevation 72.63 metres)
7											
8											

DEPTH SCALE

1 to 40

Houle Chevrier Engineering

LOGGED: A.N.

CHECKED:

BOREHOLE RECORD 2012 WITH LAB WC 14580_BOREHOLE LOGS_GNT_V01_2015-01-14.GPJ 2-20-15

PROJECT: 14-580

RECORD OF BOREHOLE 14-7

SHEET 1 OF 1

LOCATION: See Borehole Location Plan, Figure 2

DATUM: Geodetic

BORING DATE: January 12, 2015

SPT HAMMER: 63.5 drop 0.76 metres

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat. V - +, rem. V - ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-7} 10^{-6} 10^{-5} 10^{-4}) / WATER CONTENT, PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	Power Auger 200 mm Diameter Hollow Stem	Ground Surface		75.36							
		Dark brown sandy silt, some organic material (TOPSOIL)		75.00 / 0.36	1	50 D.O.	9				Borehole backfilled with auger cuttings
1		Compact, brown, fine to medium grained SAND, some silt		74.29 / 1.07	2	50 D.O.	13				
		Compact to very loose, grey brown SILTY SAND			3	50 D.O.	8				
2											
					4	50 D.O.	4				
3											
					5	50 D.O.	4				
4											
					6	50 D.O.	3				
		Very loose to loose, grey brown, fine to medium grained SAND, trace to some silt		71.09 / 4.27							
5					7	50 D.O.	W.H.				
					8	50 D.O.	5				
6		End of Borehole		69.42 / 5.94							Water level in augers 2.52m below ground surface upon completion of borehole (Elevation 72.84 metres)
7											
8											

BOREHOLE RECORD 2012 WITH LAB WC 14580 BOREHOLE LOGS GNT V01 2015-01-14.GPJ 2-20-15

DEPTH SCALE

1 to 40

Houle Chevrier Engineering

LOGGED: A.N.

CHECKED:

RECORD OF TEST PIT 14-1

PROJECT: 14-580

LOCATION: See Test Pit Location Plan, Figure 2

DATE OF EXCAVATION: January 12, 2015

SHEET 1 OF 1

DATUM: Geodetic

TYPE OF EXCAVATOR: Hydraulic Shovel

DEPTH SCALE METRES	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE NUMBER	SHEAR STRENGTH, Cu (kPa) Natural. V - + Remoulded. V - ⊖ (20 40 60 80)	WATER CONTENT (PERCENT) Wp — W — Wl (20 40 60 80)	ADDITIONAL LAB. TESTING	WATER LEVEL IN OPEN TEST PIT OR STANDPIPE INSTALLATION
0	Ground Surface		74.75					Test pit backfilled with excavation spoils
	TOPSOIL		74.45 / 0.30					
1	Grey brown, fine to medium grained SAND, trace to some silt			1				
2			72.75 / 2.00					
	Grey to grey brown SILTY SAND Soil becoming saturated at 2.0m below ground surface							
3			71.75 / 3.00					
	End of Test Pit							No groundwater inflow observed entering test pit upon completion
4								
5								
6								

DEPTH SCALE

1 to 30

Houle Chevrier Engineering

LOGGED: C.M.

CHECKED:

TESTPIT RECORD 2012 WITH LAB WC 14580_TEST PIT LOGS_GNT_V01_2015-01-14.GPJ 2-20-15

PROJECT: 14-580

RECORD OF TEST PIT 14-2

SHEET 1 OF 1

LOCATION: See Test Pit Location Plan, Figure 2

DATUM: Geodetic

DATE OF EXCAVATION: January 12, 2015

TYPE OF EXCAVATOR: Hydraulic Shovel

DEPTH SCALE METRES	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLE NUMBER	SHEAR STRENGTH, Cu (kPa) Natural. V - + Remoulded. V - ⊕ (20 40 60 80)	WATER CONTENT (PERCENT) Wp W WI (20 40 60 80)	ADDITIONAL LAB. TESTING	WATER LEVEL IN OPEN TEST PIT OR STANDPIPE INSTALLATION
0	Ground Surface		73.98					Test pit backfilled with excavation spoils
	TOPSOIL		73.58					
			0.40					
1	Reddish grey brown to grey brown, fine to medium grained SAND, some silt			1				
			72.18					
			1.80					
2	Grey brown SILTY SAND		71.88					
			2.10					
	Grey, fine to medium grained SAND, some silt							
3			70.98					
	End of Test Pit		3.00					Groundwater inflow observed at 2.8m below ground surface upon completion (Elevation 71.18 metres)
4								
5								
6								

DEPTH SCALE

1 to 30

Houle Chevrier Engineering

LOGGED: C.M.

CHECKED:

TESTPIT RECORD 2012 WITH LAB WC 14580_TEST PIT LOGS_GNT_V01_2015-01-14.GPJ 2-20-15

RECORD OF TEST PIT 14-3

PROJECT: 14-580

LOCATION: See Test Pit Location Plan, Figure 2

DATE OF EXCAVATION: January 12, 2015

SHEET 1 OF 1

DATUM: Geodetic

TYPE OF EXCAVATOR: Hydraulic Shovel

DEPTH SCALE METRES	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE NUMBER	SHEAR STRENGTH, Cu (kPa) — Natural, V - +; Remoulded, V - ⊕ (20 40 60 80)	WATER CONTENT (PERCENT) — Wp W Wl (20 40 60 80)	ADDITIONAL LAB. TESTING	WATER LEVEL IN OPEN TEST PIT OR STANDPIPE INSTALLATION
0	Ground Surface		73.73					Test pit backfilled with excavation spoils
	TOPSOIL		73.33 / 0.40					
	Grey brown, fine to medium grained SAND, trace to some silt		72.73 / 1.00					
1	Grey brown SILTY SAND Soil becoming saturated at 1.0m below ground surface			1				
	End of Test Pit		72.13 / 1.60					No groundwater inflow observed entering test pit upon completion
2								
3								
4								
5								
6								

DEPTH SCALE

1 to 30

Houle Chevrier Engineering

LOGGED: C.M.

CHECKED:

TESTPIT RECORD 2012 WITH LAB WC 14580_TEST PIT LOGS_GNT_V01_2015-01-14.GPJ 2-20-15

RECORD OF TEST PIT 14-4

PROJECT: 14-580

LOCATION: See Test Pit Location Plan, Figure 2

DATE OF EXCAVATION: January 12, 2015

SHEET 1 OF 1

DATUM: Geodetic

TYPE OF EXCAVATOR: Hydraulic Shovel

DEPTH SCALE METRES	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE NUMBER	SHEAR STRENGTH, Cu (kPa) Natural. V - + Remoulded. V - ⊕ (20 40 60 80)	WATER CONTENT (PERCENT) Wp W Wl (20 40 60 80)	ADDITIONAL LAB. TESTING	WATER LEVEL IN OPEN TEST PIT OR STANDPIPE INSTALLATION
0	Ground Surface		74.26					Test pit backfilled with excavation spoils
	TOPSOIL		74.16 / 0.10					
1	Reddish brown to grey brown, fine to medium grained SAND, trace silt and clay			1				
			72.96 / 1.30					
2	Grey, fine to medium grained SAND, trace to some silt							
3			71.26 / 3.00					No groundwater inflow observed entering test pit upon completion
	End of Test Pit							
4								
5								
6								

DEPTH SCALE

1 to 30

Houle Chevrier Engineering

LOGGED: C.M.

CHECKED:

TESTPIT RECORD 2012 WITH LAB WC 14580 TEST PIT LOGS GNT V01 2015-01-14.GPJ 2-20-15

RECORD OF TEST PIT 14-5

PROJECT: 14-580

LOCATION: See Test Pit Location Plan, Figure 2

DATE OF EXCAVATION: January 13, 2015

SHEET 1 OF 1

DATUM: Geodetic

TYPE OF EXCAVATOR: Hydraulic Shovel

DEPTH SCALE METRES	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLE NUMBER	SHEAR STRENGTH, Cu (kPa) — Natural. V - +, Remoulded. V - ⊕ (20 40 60 80)	WATER CONTENT (PERCENT) — Wp, W, Wl (20 40 60 80)	ADDITIONAL LAB. TESTING	WATER LEVEL IN OPEN TEST PIT OR STANDPIPE INSTALLATION
0	Ground Surface		77.73					Test pit backfilled with excavation spoils
	Grey brown, fine to medium grained sand, some organic material (TOPSOIL / FILL)		77.33 0.40					
1	Grey brown SILTY SAND, trace clay			1				
	End of Test Pit		76.13 1.60					No groundwater inflow observed entering test pit upon completion
2								
3								
4								
5								
6								

DEPTH SCALE

1 to 30

Houle Chevrier Engineering

LOGGED: C.M.

CHECKED:

TESTPIT RECORD 2012 WITH LAB WC 14580_TEST PIT LOGS_GNT_V01_2015-01-14.GPJ 2-20-15

RECORD OF TEST PIT 14-6

PROJECT: 14-580

LOCATION: See Test Pit Location Plan, Figure 2

DATE OF EXCAVATION: January 12, 2015

SHEET 1 OF 1

DATUM: Geodetic

TYPE OF EXCAVATOR: Hydraulic Shovel

DEPTH SCALE METRES	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE NUMBER	SHEAR STRENGTH, Cu (kPa) — Natural. V - +, Remoulded. V - ⊕ (20 40 60 80)	WATER CONTENT (PERCENT) — Wp, W, Wl (20 40 60 80)	ADDITIONAL LAB. TESTING	WATER LEVEL IN OPEN TEST PIT OR STANDPIPE INSTALLATION
0	Ground Surface		74.34					
	TOPSOIL		73.94 / 0.40					
1	Grey brown SILTY SAND			1				
2			72.24 / 2.10					
	Grey SILTY SAND							
3			71.34 / 3.00					
	End of Test Pit							
4								
5								
6								

Test pit backfilled with excavation spoils

Groundwater inflow observed at 2.1m below ground surface upon completion (Elevation 72.24 metres)

DEPTH SCALE

1 to 30

Houle Chevrier Engineering

LOGGED: C.M.

CHECKED:

TESTPIT RECORD 2012 WITH LAB WC 14580_TEST PIT LOGS_GNT_V01_2015-01-14.GPJ 2-20-15

PROJECT: 14-580

RECORD OF TEST PIT 14-7

SHEET 1 OF 1

LOCATION: See Test Pit Location Plan, Figure 2

DATUM: Geodetic

DATE OF EXCAVATION: January 12, 2015

TYPE OF EXCAVATOR: Hydraulic Shovel

DEPTH SCALE METRES	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE NUMBER	SHEAR STRENGTH, Cu (kPa) — Natural. V - + Remoulded. V - ⊕ (20 40 60 80)	WATER CONTENT (PERCENT) — Wp W Wl (20 40 60 80)	ADDITIONAL LAB. TESTING	WATER LEVEL IN OPEN TEST PIT OR STANDPIPE INSTALLATION
0	Ground Surface		75.38					Test pit backfilled with excavation spoils
	TOPSOIL		75.28 / 0.10					
	Grey brown, fine to medium grained SAND, trace to some silt							
1			74.38 / 1.00					
	Grey SILTY SAND Soil becoming saturated at 1.0m below ground surface			1				
2								
3			72.38 / 3.00					Groundwater inflow observed at 3.0m below ground surface upon completion (Elevation 72.38 metres)
	End of Test Pit							
4								
5								
6								

DEPTH SCALE

1 to 30

Houle Chevrier Engineering

LOGGED: C.M.

CHECKED:

TESTPIT RECORD 2012 WITH LAB WC 14580 TEST PIT LOGS GNT V01 2015-01-14.GPJ 2-20-15

APPENDIX E:
PRIVATE WELL SURVEY

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 541090122 (PIN)

(1) General Information

Owner's Name: [redacted]

Tenant's Name: N/A

Mailing Address: [redacted]

911 Address of well: [redacted]

Township, Con #, Lot #: [redacted]

Telephone #:

Date of Inventory: DEC 14, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☐ Washing ☐ Lawn ☑ Other GARDENING

d) Do you use any other sources of water? ☐ Yes ☑ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can.

This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: 2005

Driller:

Well Type (drilled, dug/bored): SHALLOW POINT

Casing Inside Diameter: 1.5 INCHES

Depth (below ground surface): 13 FEET

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber (casing sticks above the ground)

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☑ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

No

How often does it change? NEVER

Reasons for why it changes (if known) N/A

k) Do you test the water quality through the Health Unit? ☐ Yes ☑ No

When, and what were the results?

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☑ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☐ Yes ☑ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No (DONT HAVE)

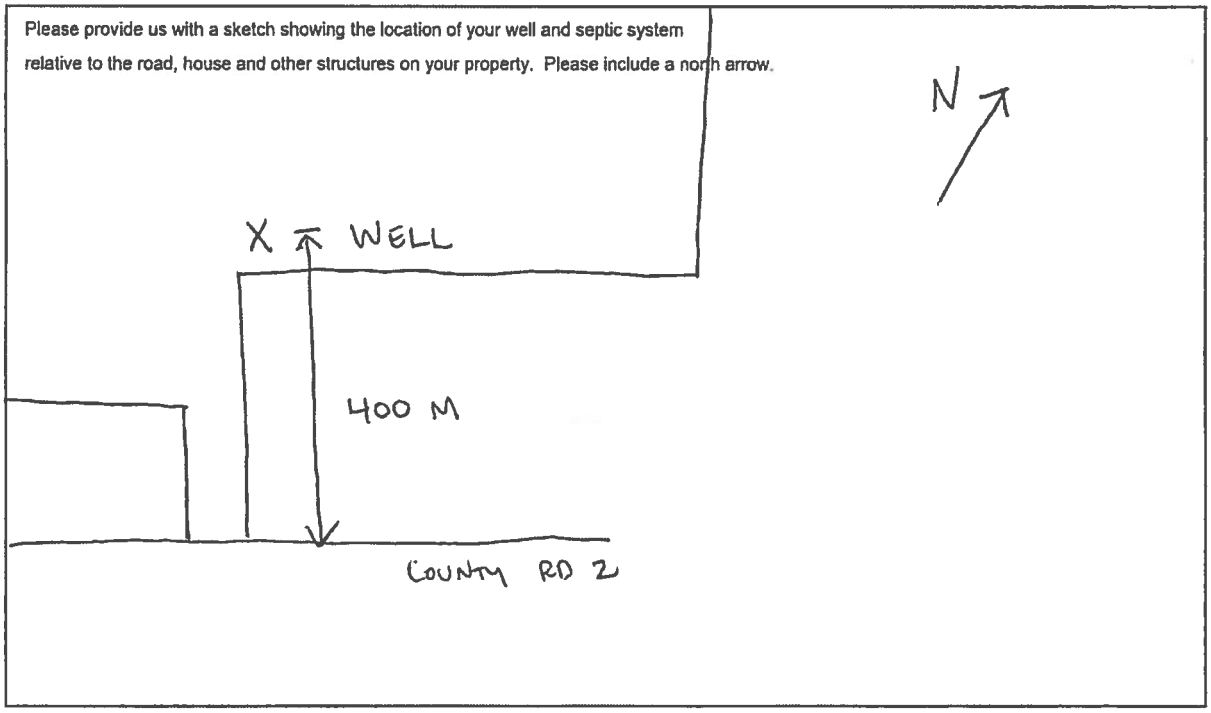
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☐ Yes ☐ No

How regularly / frequency?

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

- SHOULD PROVIDE CHOICE OF FRENCH FORM

- IF ANY POTENTIAL GROUND WATER EFFECT OF SOLAR ENERGY INSTALATION IS KNOWN OR BECOMES KNOWN IN THE FUTURE, ALL OWNERS THAT COULD BE AFFECTED HAVE TO BE NOTIFIED AS SOON AS INFORMATION BECOMES KNOWN TO ANY OF THE PARTIES INVOLVED.

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ DEC 14, 2017
(field personnel) (date)

Signatures: _____
(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 541090193 (PIN)

(1) General Information

Owner's Name:

Tenant's Name: N/A

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: DEC 13, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☑ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☑ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can.

This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: UNKNOWN

Driller:

Well Type (drilled, dug/bored):

Casing Inside Diameter:

Depth (below ground surface):

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date Installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

(buried in a pit or concrete chamber) casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs (square lid within a larger circular concrete slab)

other (please describe):

i) Has the well ever gone dry? ☑ Yes ☐ No

Date when this event last occurred: SUMMER 2016 (1ST TIME SINCE DUG)

How long did the well remain dry? 3-4 WEEKS

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☑ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

ONLY WHEN WATER LEVEL IS LOW

How often does it change? ONCE A YEAR (SUMMER)

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☐ Yes ☑ No

When, and what were the results?

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☑ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

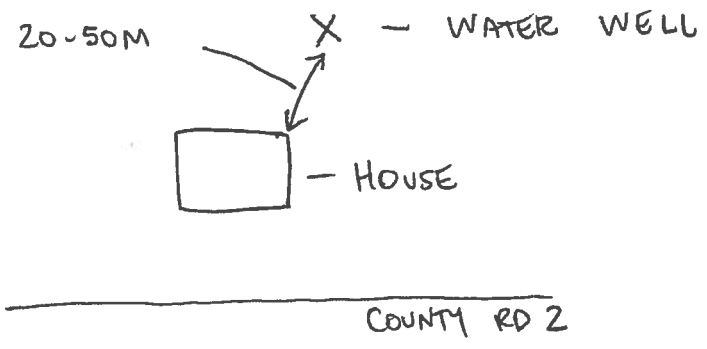
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☐ Yes ☑ No

How regularly / frequency?

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

N/A

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ DEC 13, 2017

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 541090111 (PIN)

(1) General Information

Owner's Name:

Tenant's Name: N/A

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: DEC 14, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☑ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☑ No

Alternative Sources (cistern, bottled): N/A

e) Do you have a copy of the driller's log for the well? ☑ Yes ☐ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: FEB 24, 2017

Driller:

Well Type (drilled, dug/bored): DUG

Casing Inside Diameter: 12 INCH

Depth (below ground surface): 40 FEET

Water Level (below ground surface):

Pump: SUBMERSABLE

Brand/Type:

Horsepower / Rating (L/min):

Date installed: WELL TAG # - A172424, REGULATON 903

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

(buried in a pit or concrete chamber) casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☑ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

No

How often does it change? NEVER

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? 2017 - PERFECT RESULTS

(3) Water Well Treatment

(a) Do you treat your well water? ☑ Yes ☐ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

CHLORINATION

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

N/A

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

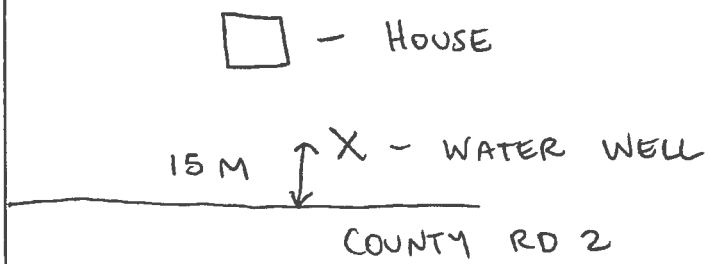
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? TWO TIMES PER YEAR

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

N/A

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ DEC 14, 2017

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 541090124 (PIN)

(1) General Information

Owner's Name:

Tenant's Name: N/A

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: DEC 13, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☑ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can.

This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed:

Driller: UNKNOWN

Well Type (drilled, dug/bored):

Casing Inside Diameter:

Depth (below ground surface):

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe): SHALLOW SURFACE WELL

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☑ No

Date when this event last occurred: N/A

How long did the well remain dry? N/A

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☑ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality? GOOD

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

DOESNT CHANGE

How often does it change? NEVER

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☐ Yes ☑ No

When, and what were the results? UNABLE TO FIND RESULTS

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☑ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

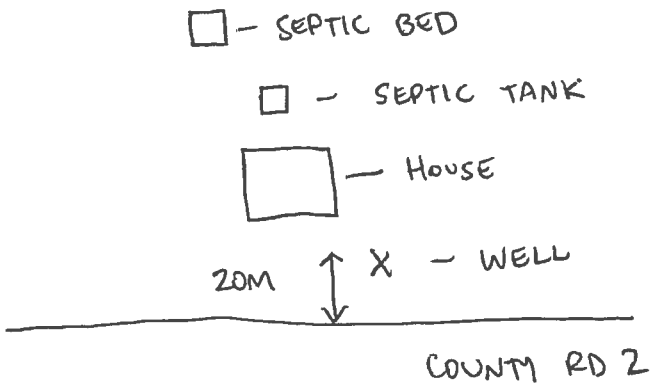
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency?

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

TWO LARGE PONDS STOCKED WITH FISH IN BACKYARD OF PROPERTY.

OWNER REQUESTS SAMPLING COMPLETED ON PONDS DUE TO INVESTMENT OF POND

OWNER PROVIDED COMPANY NAME: SACOUR ELECTRIC INC. IF EDF REQUIRES HIS SERVICES IN THE FUTURE

613 - 850 - 8170

Thank you for taking the time to complete this inventory.
Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ (field personnel) DEC 13, 2017 (date)

Signatures: _____ (project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 5410901Z0

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: DEC 14, 2017

(2) Water Well Information

a) Do you have a private water well? TWO WELLS ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☑ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☑ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: 1991

Driller:

Well Type (drilled, dug/bored):

Casing Inside Diameter:

Depth (below ground surface):

Water Level (below ground surface): 25 FEET

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe): SURFACE WELL

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☑ No

Date when this event last occurred:

How long did the well remain dry? N/A

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

No

How often does it change? NEVER

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? 2007, 2011

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☑ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

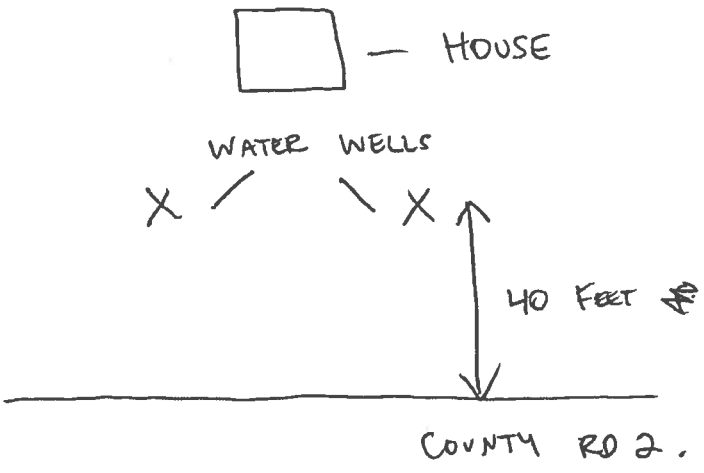
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? EVERY 2-3 YEARS

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

N/A

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ (date) DEC 14, 2017

(Stantec personnel)

Signatures: _____ (date)

(project manager)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 541090102 (PIN)

(1) General Information

Owner's Name:

Tenant's Name: N/A

Mailing Address:

911 Address of well: ?

Township, Con #, Lot #:

Telephone #:

Date of Inventory: DEC 13, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☑ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☑ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can.

This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed:

Driller: UNKNOWN

Well Type (drilled, dug/bored):

Casing Inside Diameter:

Depth (below ground surface):

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe): UNKNOWN

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☑ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

NEVER CHANGES (OWNED WELL 35 YEARS +/- 5 YEARS)

How often does it change? NEVER

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? UNKNOWN

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☐ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

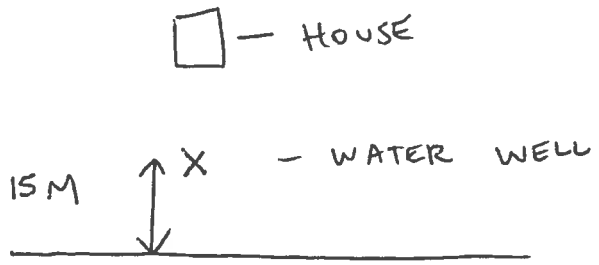
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 3 - 4 YEARS

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

N/A

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ DEC 15, 2017

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 541090123 (PIN)

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: DEC 12, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☐ Drinking ☑ Washing ☑ Lawn ☑ Other LIVE STOCK - CHICKENS

d) Do you use any other sources of water? ☐ Yes ☑ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can.

This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed:

Driller:

Well Type (drilled, dug/bored): UNKNOWN

Casing Inside Diameter:

Depth (below ground surface):

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe): SANDPOINT

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☑ No

Date when this event last occurred:

How long did the well remain dry? N/A

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

No

How often does it change? NEVER CHANGES

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? PERFECT

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☑ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? EVERY 5 YEARS

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.

UNABLE TO DESCRIBE AS WELL IS "SANDPOINT."

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

N/A

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ DEC 12, 2017

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 5410901 95

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: DEC 13, 2017

(2) Water Well Information

a) Do you have a private water well? ☐ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☐ No

c) Do you use your private water well? ☐ Yes ☐ No

For what uses? ☐ Drinking ☐ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☐ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☐ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed:

Driller:

Well Type (drilled, dug/bored):

Casing Inside Diameter: PLEASE SEE PAGE 3

Depth (below ground surface):

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☐ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☐ Yes ☐ No

When, and what were the results?

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☐ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☐ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☐ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☐ No

If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☐ Yes ☐ No

How regularly / frequency?

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

PROPERTY DOES NOT HAVE WATER WELL. OWNER DID NOT PARTAKE IN WATER WELL INVENTORY SURVEY

OWNER WAS PROVIDED EDF INFO DOCUMENTS OF PROJECT

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ DEC 13, 2017

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 541090110 (PIN)

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: DEC 13, 2017

(2) Water Well Information

a) Do you have a private water well? ☐ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☐ No

c) Do you use your private water well? ☐ Yes ☐ No

For what uses? ☐ Drinking ☐ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☐ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☐ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can.

This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed:

Driller:

Well Type (drilled, dug/bored):

Casing Inside Diameter:

Depth (below ground surface): PLEASE SEE PAGE 3.

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☐ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☐ Yes ☐ No

When, and what were the results?

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☐ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☐ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☐ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☐ No

If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☐ Yes ☐ No

How regularly / frequency?

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

OWNER DID NOT PARTAKE IN WATER WELL INVENTORY SURVEY.

OWNER WAS PROVIDED INFORMATION DOC'S FOR REVIEW

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ DEC 13, 2017

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 541090100 / 541090106

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #: PLEASE SEE PAGE 3

Date of Inventory: DEC 13, 2017

(2) Water Well Information

a) Do you have a private water well? ☐ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☐ No

c) Do you use your private water well? ☐ Yes ☐ No

For what uses? ☐ Drinking ☐ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☐ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☐ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed:

Driller:

Well Type (drilled, dug/bored):

Casing Inside Diameter:

Depth (below ground surface):

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☐ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☐ Yes ☐ No

When, and what were the results?

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☐ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☐ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☐ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☐ No

If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☐ Yes ☐ No

How regularly / frequency?

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

OWNER DID NOT WANT TO PARTICIPATE IN WATER WELL INVENTORY SURVEY

Thank you for taking the time to complete this inventory.

Please note that this completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ DEC 13, 2017

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 16/17

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☐ Yes ☐ No

For what uses? ☐ Drinking ☑ Washing ☑ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☐ No

Alternative Sources (cistern, bottled): Sometimes

e) Do you have a copy of the driller's log for the well? ☐ Yes ☒ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner: Owners

Date Constructed: 1995

Driller:

Well Type (drilled, dug/bored): Surface Well

Casing Inside Diameter: 3ft

Depth (below ground surface): 16 feet

Water Level (below ground surface): 8 - 10 feet

Pump

Brand/Type: Jet pump

Horsepower / Rating (L/min): 1/2

Date installed: 2010

Date of last service / Maintenance: 2010

Depth set in well (below ground surface)

Initial setting (at construction): Basement

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe): tiles

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: Pendleton Solar Energy Centre

Stantec Assigned Well ID Number: ______

j) How would you rate your water quality? ☐ Poor ☑ Good ☐ Excellent ☐ Poor ☑ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☑ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? 2015 good.

(3) Water Well Treatment

(a) Do you treat your well water? ☑ Yes ☐ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)? Jasvak

(c) What issue(s) occurred that prompted your decision to treat your drinking water? ~~[illegible]~~

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

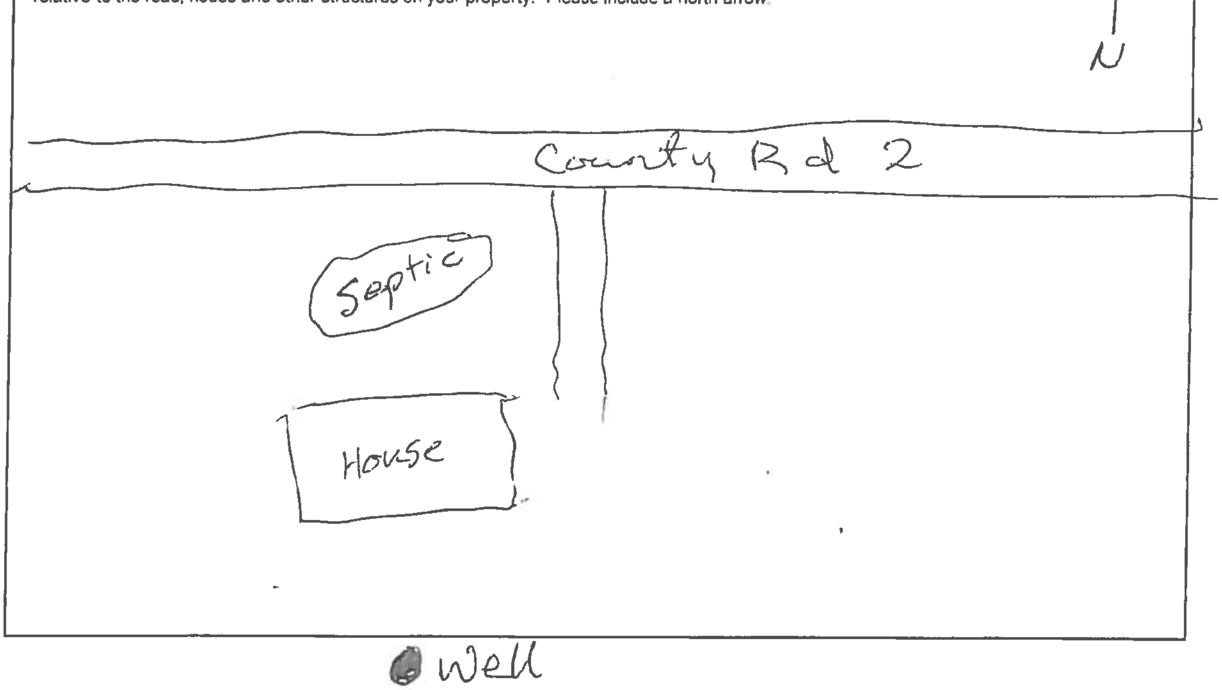
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 6-7 yrs

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 16/17

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 13, 17

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☒ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☒ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☒ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: 2002

Driller:

Well Type (drilled, dug/bored): Surface Well

Casing Inside Diameter:

Depth (below ground surface): 20 Feet.

Water Level (below ground surface):

Pump ✓

Brand/Type: ?

Horsepower / Rating (L/min):

Date installed: 2002.

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☑ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☑ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? When built 2002

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☒ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☒ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☒ No

If yes, what was the problem?

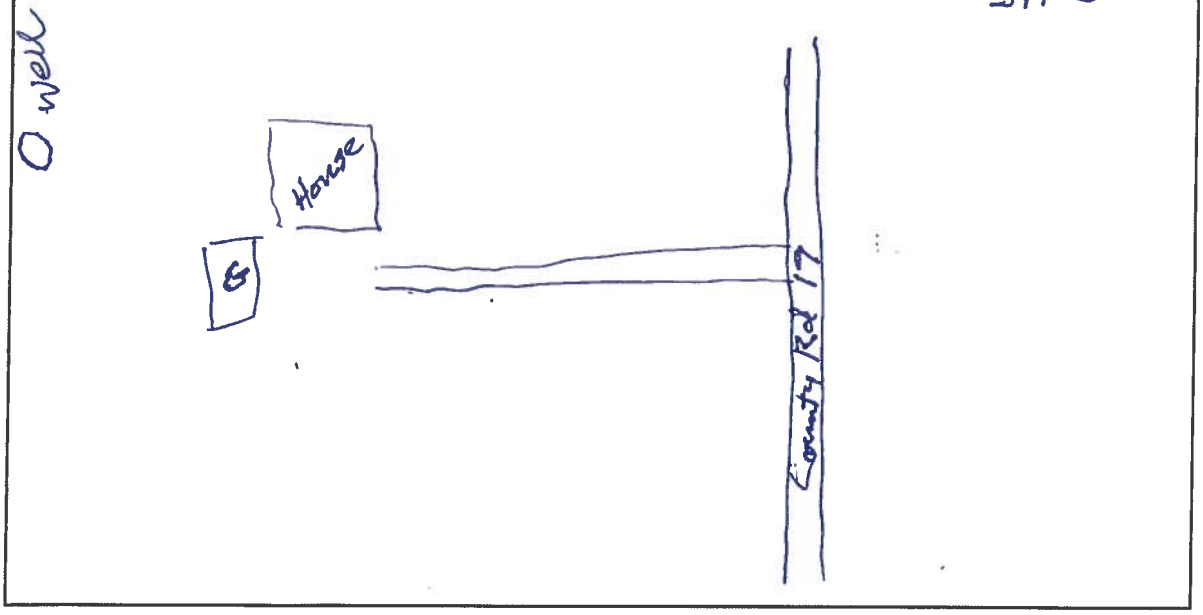
Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☒ Yes ☐ No

How regularly / frequency? 3-4 yrs

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.

More than 120 m from site



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Landowner did not speak much English. First Language is French.

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ (date) Dec 13/17

(field personnel)

Signatures: _____ (date)

(project manager)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name: ~~~ 1

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 16/17

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☒ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☐ Drinking ☐ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☑ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner: ~~1997~~ 1996

Date Constructed:

Driller:

Well Type (drilled, dug/bored): Surface Well

Casing Inside Diameter:

Depth (below ground surface):

Water Level (below ground surface):

Pump: ~~Submersible~~ Jet pump in basement

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☑ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? Perfect

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☒ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☒ No

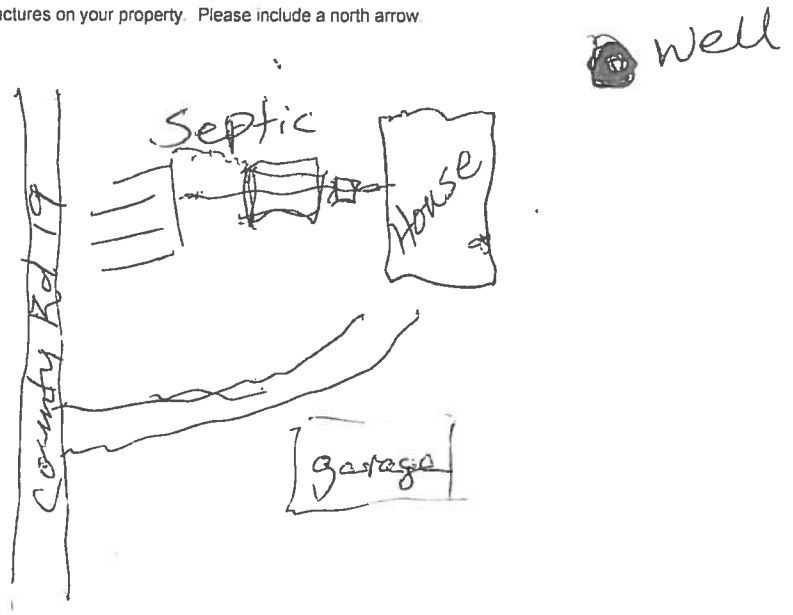
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 2 yrs.

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Landowner bought the house recently and the realtor did not disclose the solar farm proposal with them. He had lots of questions and fears the value of his home will diminish.

A follow up call from EDF would be recommended.

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures _____ Dec 16/17

(field personnel) (date)

Signatures _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name: —

Mailing Address:

911 Address of well: //

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 16 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☒ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☒ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☒ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: 2000 ?

Driller:

Well Type (drilled, dug/bored): Dug

Casing Inside Diameter: ~~3ft~~ 3ft

Depth (below ground surface): ?

Water Level (below ground surface): ?

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber — casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab — two semi-circular concrete slabs — square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☑ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☑ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? good

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☑ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

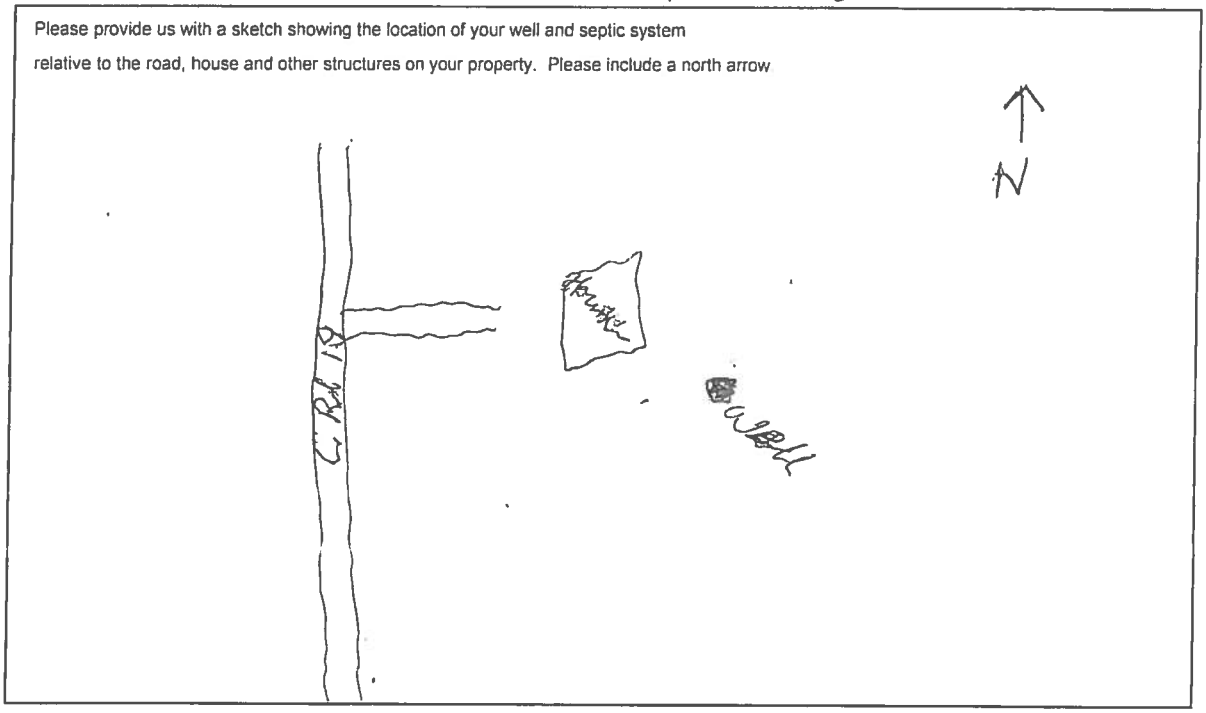
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? Once, years ago

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

" lives along and is a trucker so he is not home often.

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 16/17

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 13, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No Sand point

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☑ Lawn ☐ Other

d) Do you use any other sources of water? garden ☐ Yes ☒ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☒ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: Sand point 2005

Driller:

Well Type (drilled, dug/bored): Sand Point

Casing Inside Diameter:

Depth (below ground surface): ~~2~~ 28 feet

Water Level (below ground surface):

Pump

Brand/Type: Pump ! Jet pump.

Horsepower / Rating (L/min): 1/3

Date installed: Aug 2005

Date of last service / Maintenance: Self serv - 2006.

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

30/50 pressure Water pump

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe): Sand point

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☒ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? 100%.

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☒ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☒ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☒ No

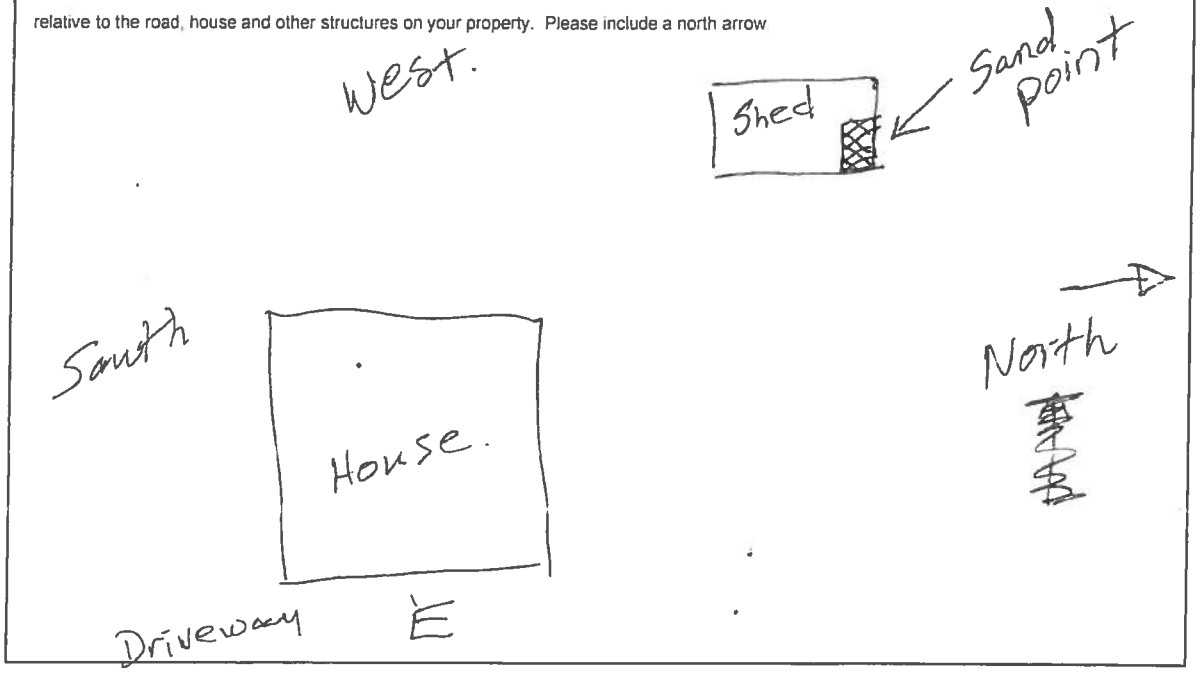
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 3-4 yrs.

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Sand point.

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 13/17

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 13/17

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☒ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☐ Lawn ☑ Other garden

d) Do you use any other sources of water? ☐ Yes ☒ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☒ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner: Current owners

Date Constructed: 2006

Driller: owner

Well Type (drilled, dug/bored): Sand point tiled well

Casing Inside Diameter: 1½ inch.

Depth (below ground surface): 16 feet

Water Level (below ground surface): depends.

Pump

Brand/Type: Jet pump Stainless Steel.

Horsepower / Rating (L/min): ½ Horsepower

Date installed: 2015

Date of last service / Maintenance: 2015

Depth set in well (below ground surface)

Initial setting (at construction): 4ft below service.

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe): Sand point tiled well.

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☑ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☑ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? High quality

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☒ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☒ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☒ No

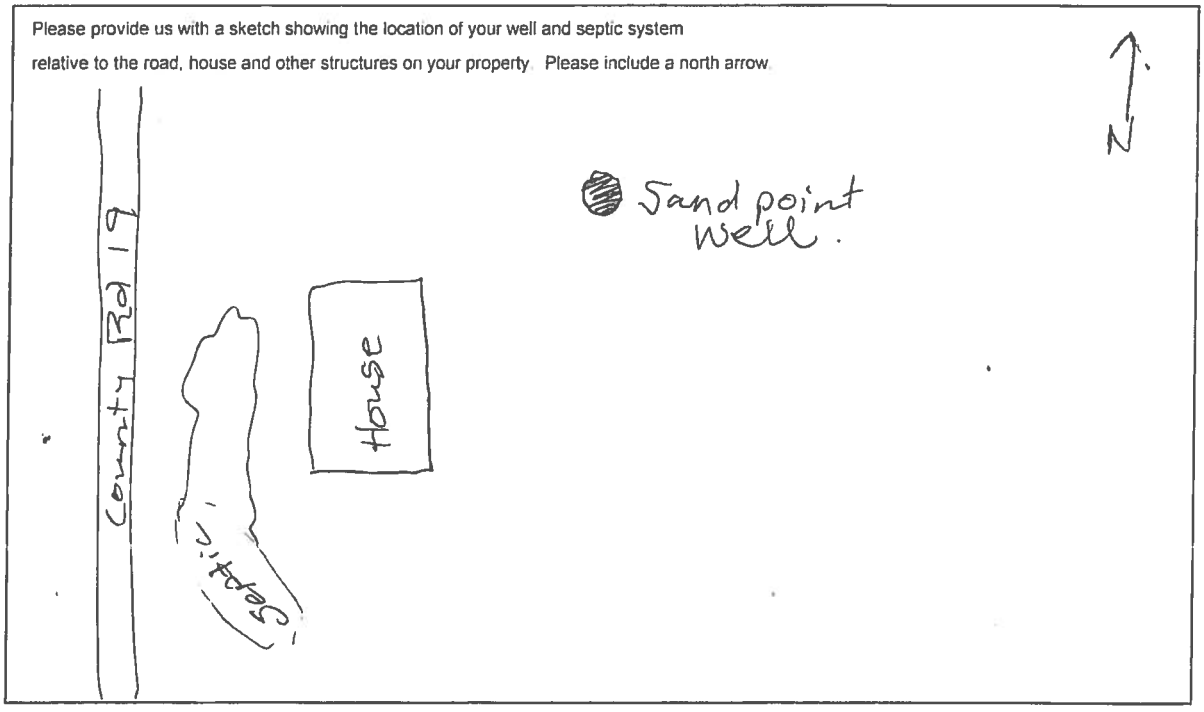
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☐ Yes ☒ No

How regularly / frequency?

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: Pendleton Solar Energy Centre

Stantec Assigned Well ID Number: _____

Please provide any other comments:

High water table.

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 13/17

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 13, 2017.

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☒ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing garden ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☒ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☒ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: Fall 2009

Driller: Owner

Well Type (drilled, dug/bored): Sand point

Casing Inside Diameter:

Depth (below ground surface): 26 feet

Water Level (below ground surface):

Pump

Brand/Type: Piston Pump.

Horsepower / Rating (L/min): 1/4 horsepower

Date Installed: fall 2009

Date of last service / Maintenance: no need.

Depth set in well (below ground surface)

Initial setting (at construction): In basement.

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe): Sand point.

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☑ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☑ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? Good.

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☒ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☒ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☒ No

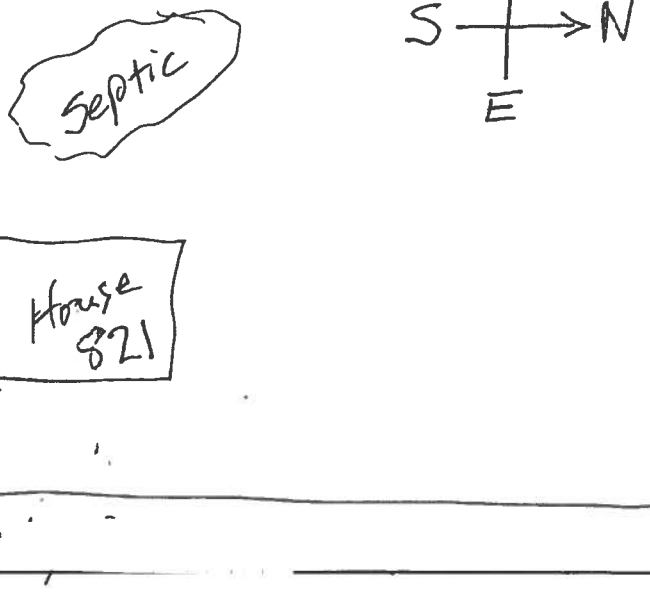
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? every 5 yrs.

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

* — Owners also constructed this Sand point for this property. Water supply is close to C
This is a good water supply - lots of water.

Son lives on the property.

The water supply will be 120m of the solar property.
House built in 1982 - moved water supply 1990.
Built in ~~1982~~ 1990

Moved the supply to top of the hill by the road.
Jet Pump installed 1990. - Depth 30 feet.

Septic at bottom of hill by House. pumped every 2 yrs.

Regular maintanace by owner.
Yes - tested. - good quality.

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 13/17
(field personnel) (date)

Signatures: _____
(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 13, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☐ Lawn ☑ Other garden

d) Do you use any other sources of water? ☐ Yes ☒ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☒ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: 1990

Driller:

Well Type (drilled, dug/bored): Sand point

Casing Inside Diameter:

Depth (below ground surface): 30 feet.

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min): Jet Pump

Date Installed: 1990

Date of last service / Maintenance: ?

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe): Wood shelter

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality? ✓

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? 1990

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☒ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☒ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☒ No

If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 2 yrs

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow

Top of hill.

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 13/17
(field personnel) (date)

Signatures: _____
(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well: 11 V

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 13, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☒ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☐ Drinking ☑ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☑ Yes ☐ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner: Previous.

Date Constructed: Priour to 1998

Driller:

Well Type (drilled, dug/bored): Tiles & Dug

Casing Inside Diameter:

Depth (below ground surface): 5feet.

Water Level (below ground surface):

Pump

Brand/Type: ~~Jetbug~~ Red Jacket Pump

Horsepower / Rating (L/min):

Date installed: ?

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☒ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality? taist funny.

How consistent is your water quality? ☐ Very Consistent ☒ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

High in Minerals – owner does not Drink.

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☐ Yes ☐ No

When, and what were the results? 1998 once when bought.

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☒ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☒ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☒ No

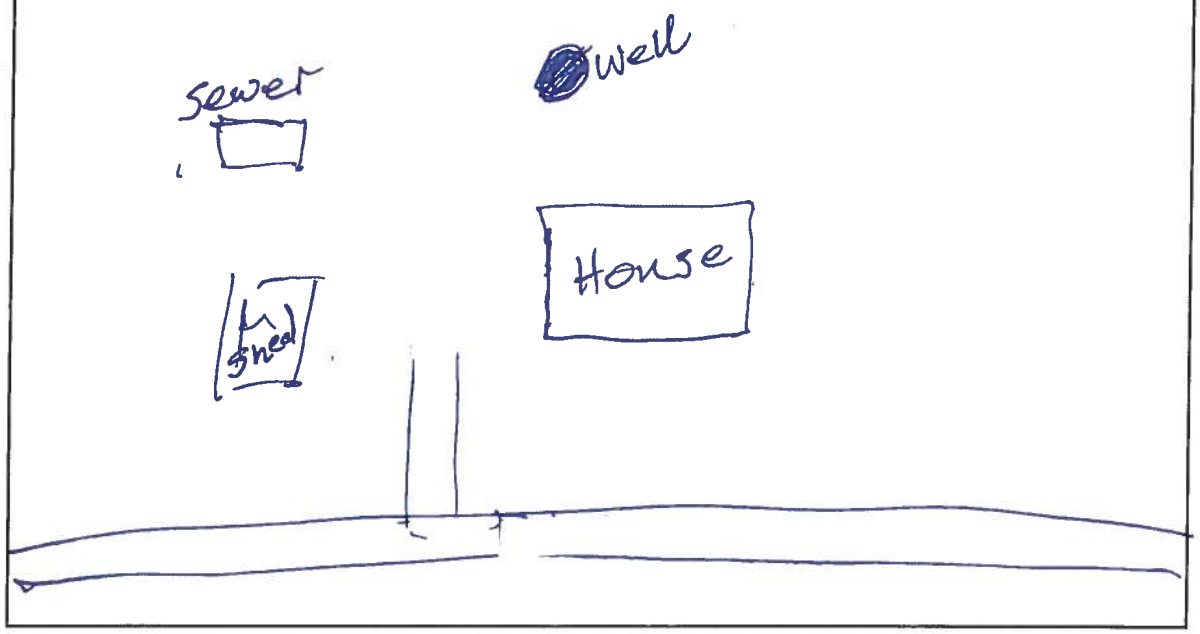
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 4-5 years.

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

I J

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: (_____ Dec 13/17

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name: —

Tenant's Name: —

Mailing Address: 0

911 Address of well: 11

Township, Con #, Lot #: —

Telephone #: —

Date of Inventory: Dec 14, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☒ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☐ Drinking ☐ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ~~☐ Yes~~ ☑ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: ~~1998~~ 1996

Driller: Sarazin

Well Type (drilled, dug/bored): Dug

Casing Inside Diameter: 2 feet

Depth (below ground surface): Maybe 27 ft.

Water Level (below ground surface):

Pump ✓

Brand/Type:

Horsepower / Rating (L/min):

Date Installed: 1996

Date of last service / Maintenance: 1996

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber | casing sticks above the ground | other (please describe): Latas

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab | two semi-circular concrete slabs | square lid within a larger circular concrete slab | other (please describe):

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: Pendleton Solar Energy Centre

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☑ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? Spring 2017 - 1-2 times a year

(3) Water Well Treatment

(a) Do you treat your well water? ☑ Yes ☐ No Javex

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☒ No

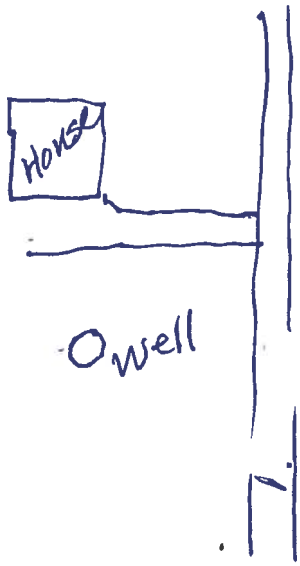
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 3-4 yrs.

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Landowner would like to know how deep the foundations for the solar panels will be. Follow up.

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 14, 2017

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #: [redacted]

Date of Inventory: Dec 14/17

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☒ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? Garden ☐ Yes ☒ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☒ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: 2009

Driller:

Well Type (drilled, dug/bored): drilled

Casing Inside Diameter: 4 feet

Depth (below ground surface): 32 ft

Water Level (below ground surface): 12 - 14 feet

Pump

Brand/Type: Jet Pump

Horsepower / Rating (L/min): 1/4 HP

Date installed: 2009

Date of last service / Maintenance: 2009

Depth set in well (below ground surface)

Initial setting (at construction): Pump is in the house.

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well ~~is in a pit or~~ concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? 2015 when water softener installed.

(3) Water Well Treatment

(a) Do you treat your well water? ☑ Yes ☐ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)? Calcium

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

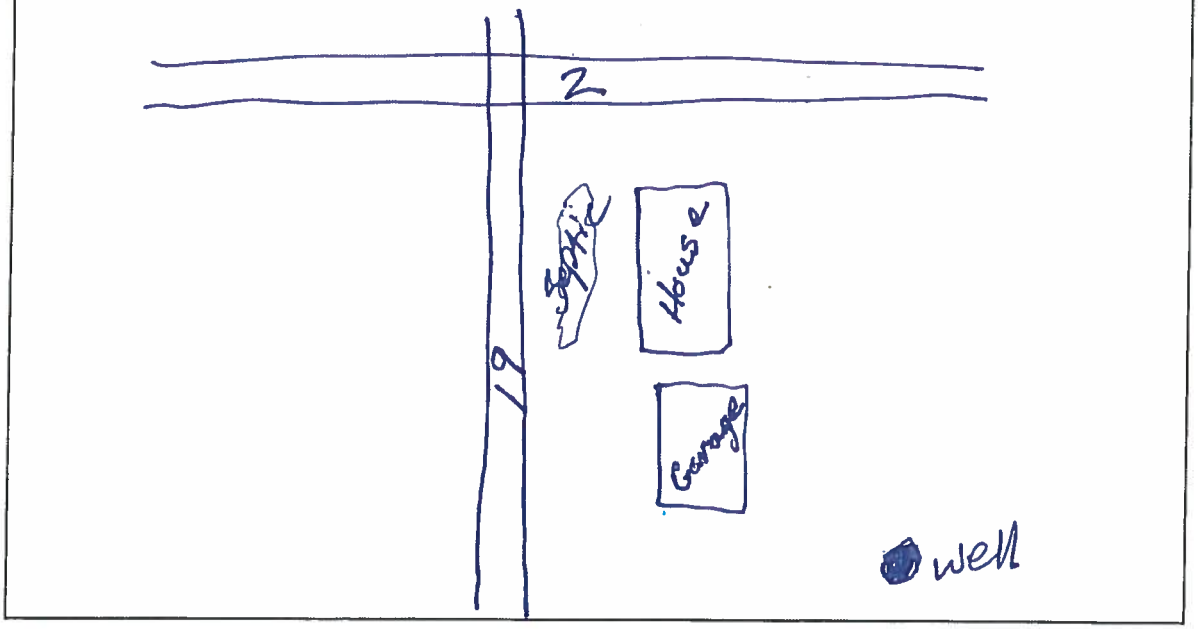
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 4-5 yrs.

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Log -

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 14, 2017
(field personnel) (date)

Signatures: _____
(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

~~Tenant's Name:~~

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 16, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☑ Lawn ☐ Other

d) Do you use any other sources of water? ☒ Yes ☒ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☒ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: 1994

Driller:

Well Type (drilled, dug/bored): Surface well - 5 tiles

Casing Inside Diameter: 6 ft~~m~~.

Depth (below ground surface): 20 ft.

Water Level (below ground surface): 12 ft.

Pump

Brand/Type: ~~Jet~~ Pump (Berkley)

Horsepower / Rating (L/min): 1/2

Date Installed: 2012

Date of last service / Maintenance: 2012

Depth set in well (below ground surface)

Initial setting (at construction): Basement

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☑ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? 2016 ~ Good.

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☒ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☒ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☒ No

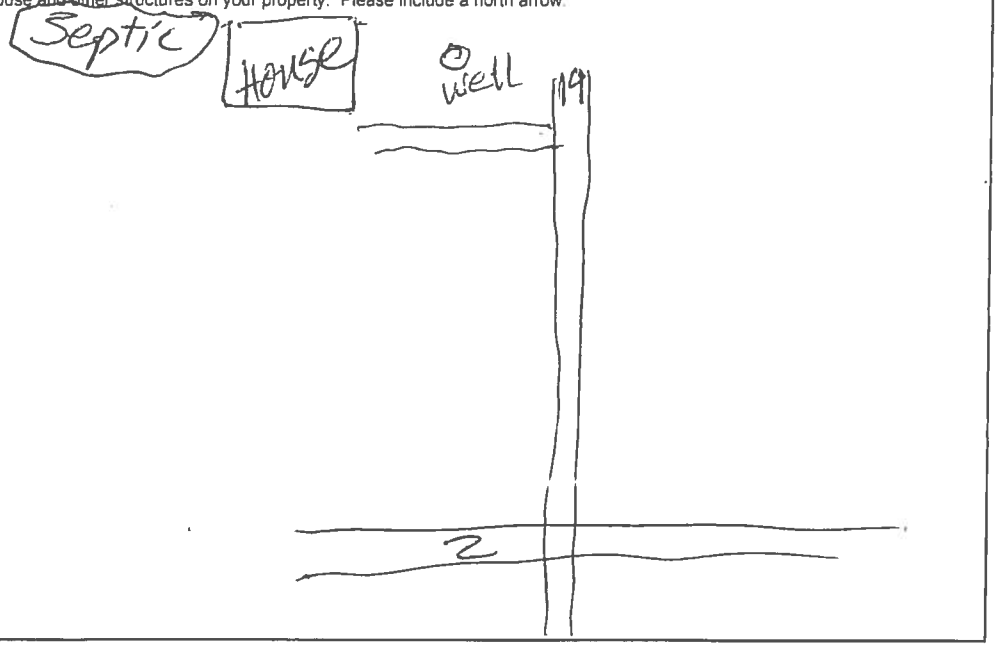
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 2.5 yrs

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Lat -

Lng -

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 16/17

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 1 / 11

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☐ Drinking ☐ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☐ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☐ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed:

Driller:

Well Type (drilled, dug/bored):

Casing Inside Diameter: 3ft.

Depth (below ground surface):

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☐ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☐ Yes ☐ No

When, and what were the results?

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☐ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☐ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☐ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☐ No

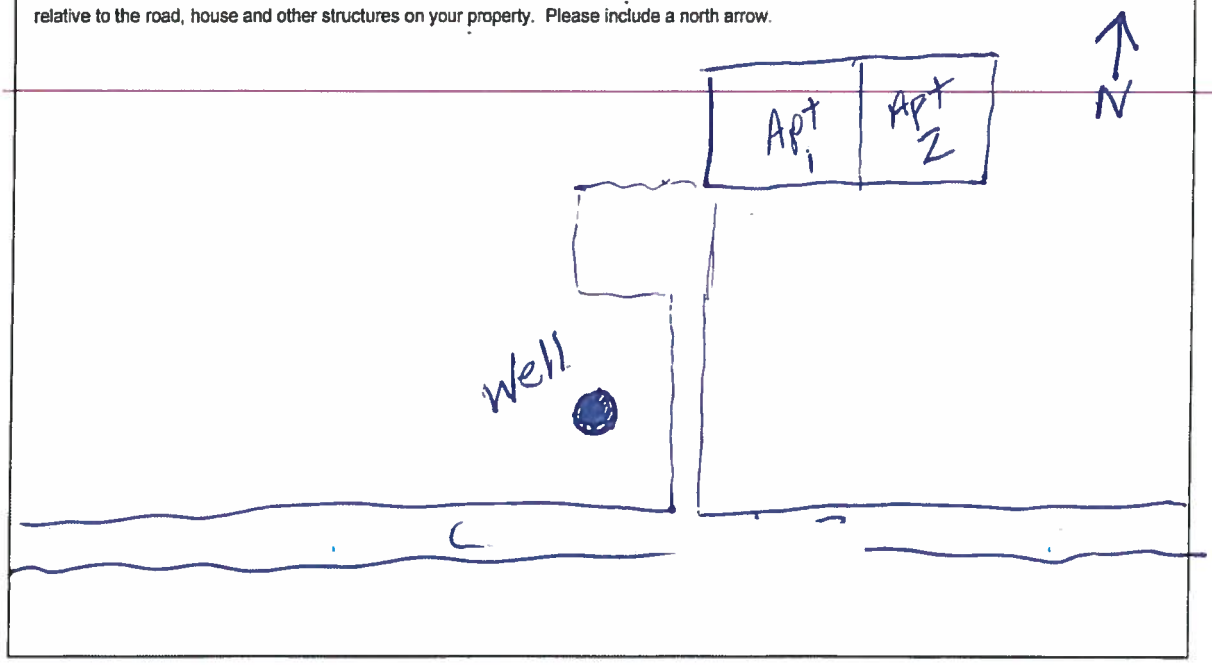
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☐ Yes ☐ No

How regularly / frequency?

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Spoke with tenant, who is landowners daughter. She did not have knowledge of the well, but gave landowners phone number.

Lat -

Lng -

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 17/17

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: December 11, 2017

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☑ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☒ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☒ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: 1988

Driller:

Well Type (drilled, dug/bored): Dug Well

Casing Inside Diameter: 4ft

Depth (below ground surface): 12 feet – 14 feet.

Water Level (below ground surface):

Pump

Brand/Type: ?

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☒ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☑ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? Good. (Long time ago)

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☒ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

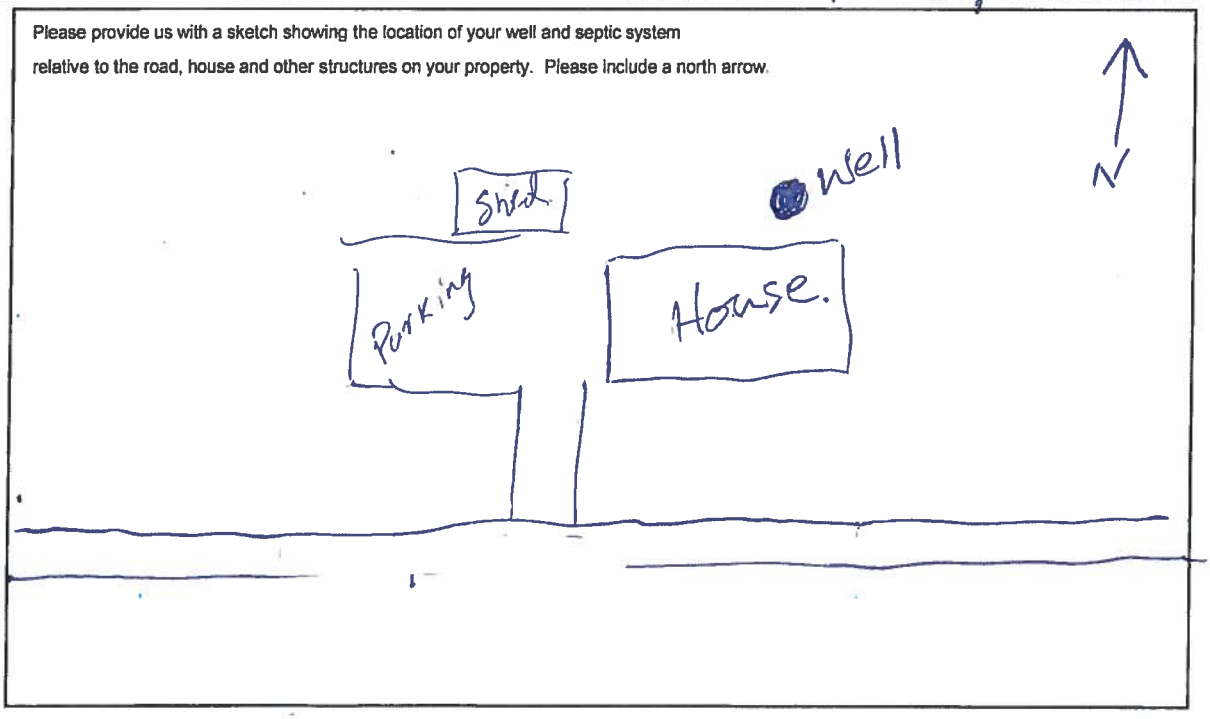
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 1-2 times per year

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Lat

Lng —

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 17/17

(field personnel) (date)

Signatures: _____

(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

addres ~~Tenant's Name~~:

Mailing Address:

911 Address of well: 11

Township, Con #, Lot #:

Telephone #:

Date of Inventory: Dec 15/17

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☐ Drinking ☑ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☑ Yes ☐ No

Alternative Sources (cistern, bottled): Water system for drinking water.

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can.

This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed: 1999

Driller:

Well Type (drilled, dug/bored): Drilled.

Casing Inside Diameter: 4 ~~feet~~

Depth (below ground surface): Est. 20ft

Water Level (below ground surface):

Pump

Brand/Type: Jet pump in basement and pump in well.

Horsepower / Rating (L/min):

Date installed: 1999

Date of last service / Maintenance: wiring service: Summer 2016

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☑ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☑ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☐ Consistent ☑ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

Yellow in seasons (fall)

How often does it change? Seasonal.

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? Once a year

(3) Water Well Treatment

(a) Do you treat your well water? ☑ Yes ☐ No

(b) If you answered yes, what method of treatment do you use (e.g. chlorination, UV, filtration, water softener)?

DeForge water treatment

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

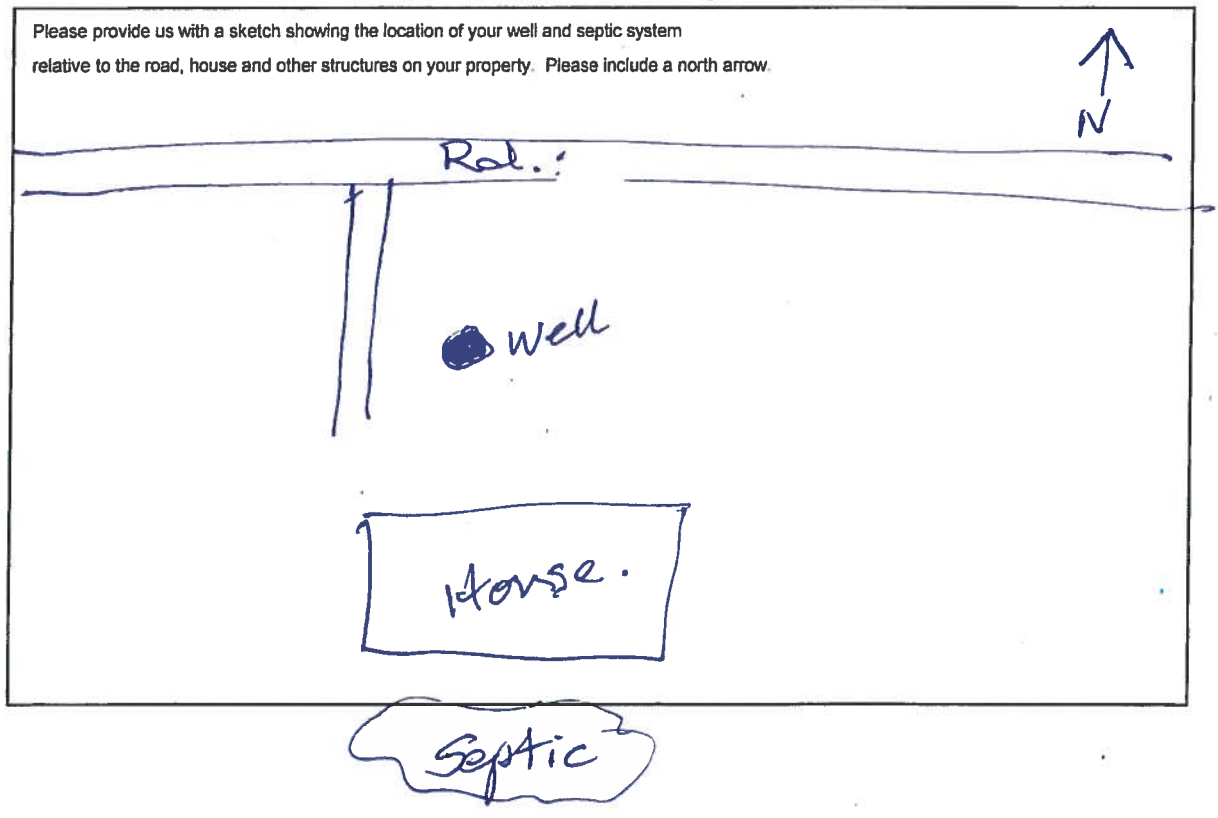
If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? 5 yrs.

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.



Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

Lng: --

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ Dec 15/17
(field personnel) (date)

Signatures: _____
(project manager) (date)

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

(1) General Information

Owner's Name:

Tenant's Name:

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory:

(2) Water Well Information

a) Do you have a private water well? ☑ Yes ☐ No

b) Are you connected to the municipal water supply system? ☐ Yes ☑ No

c) Do you use your private water well? ☑ Yes ☐ No

For what uses? ☑ Drinking ☑ Washing ☑ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☑ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☑ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner: ?

Date Constructed: ?

Driller: ?

Well Type (drilled, dug/bored): Surface well

Casing Inside Diameter: ?

Depth (below ground surface): ?

Water Level (below ground surface): ?

Pump ?

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe): ?

i) Has the well ever gone dry? ☐ Yes ☑ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☐ Excellent ☐ Poor ☐ Good ☑ Excellent

How would you describe your water quality? Excellent

How consistent is your water quality? ☑ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☑ Yes ☐ No

When, and what were the results? 18 July, 2016 Total Coliform per 100ml - 2 E. coli - Ø

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☑ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☑ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☑ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☑ No

If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☑ Yes ☐ No

How regularly / frequency? Pumped out Summer 2017

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: 5410901B3

(1) General Information

Owner's Name:

Tenant's Name: N/A

Mailing Address:

911 Address of well:

Township, Con #, Lot #:

Telephone #:

Date of Inventory: DEC 12, 2017

(2) Water Well Information

a) Do you have a private water well? ☐ Yes ☑ No

b) Are you connected to the municipal water supply system? ☐ Yes ☐ No

c) Do you use your private water well? ☐ Yes ☐ No

For what uses? ☐ Drinking ☐ Washing ☐ Lawn ☐ Other

d) Do you use any other sources of water? ☐ Yes ☐ No

Alternative Sources (cistern, bottled):

e) Do you have a copy of the driller's log for the well? ☐ Yes ☐ No

If so, please forward a copy of the well log along with this inventory form.

f) If you are unable to provide us a copy of the well log, please provide as much of the following information as you can. This information may help us to locate your well record. If we are able to locate your well record, we will mail you a copy.

Original Well Owner:

Date Constructed:

Driller:

Well Type (drilled, dug/bored): SEE PAGE 3

Casing Inside Diameter:

Depth (below ground surface):

Water Level (below ground surface):

Pump

Brand/Type:

Horsepower / Rating (L/min):

Date installed:

Date of last service / Maintenance:

Depth set in well (below ground surface)

Initial setting (at construction):

Present setting:

g) Please circle the terms that best describe the accessibility of your well:

buried in a pit or concrete chamber casing sticks above the ground

other (please describe):

h) If the well is in a pit or concrete chamber, please circle the type of lid:

single circular concrete slab two semi-circular concrete slabs square lid within a larger circular concrete slab

other (please describe):

i) Has the well ever gone dry? ☐ Yes ☐ No

Date when this event last occurred:

How long did the well remain dry?

Do you know reason why?

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

j) How would you rate your water quality? ☐ Poor ☐ Good ☐ Excellent ☐ Poor ☐ Good ☐ Excellent

How would you describe your water quality?

How consistent is your water quality? ☐ Very Consistent ☐ Consistent ☐ Variable ☐ Very Variable

If you answered Variable or Very Variable

How does your water quality change (e.g., taste, smell, appearance)?

How often does it change?

Reasons for why it changes (if known)

k) Do you test the water quality through the Health Unit? ☐ Yes ☐ No

When, and what were the results?

(3) Water Well Treatment

(a) Do you treat your well water? ☐ Yes ☐ No

(b) If you answered yes, what method of treatment do you use (e.g., chlorination, UV, filtration, water softener)?

(c) What issue(s) occurred that prompted your decision to treat your drinking water?

(4) Septic System Information

a) Do you have a private septic system? ☐ Yes ☐ No

b) Are you connected to the municipal sewer system? ☐ Yes ☐ No

c) Have you ever experienced problems with your septic system? ☐ Yes ☐ No

If yes, what was the problem?

Does this problem still occur? How often?

d) Do you get your septic system pumped out? ☐ Yes ☐ No

How regularly / frequency?

Please provide us with a sketch showing the location of your well and septic system relative to the road, house and other structures on your property. Please include a north arrow.

Stantec

WATER WELL INVENTORY FORM

Project Reference: **Pendleton Solar Energy Centre**

Stantec Assigned Well ID Number: _____

Please provide any other comments:

- INFORMED ME THERE IS NO WATER WELL ON PROPERTY. HAS INFORMED ALL OWNERS OF THIS PROPERTY OF OUR RECENT NOTIFICATIONS OF WATER WELL SURVEY AND FUTURE CONSTRUCTION DATES OF PENDLETON SOLAR ACTIVITIES. IS THE MAIN CONTACT FOR THIS PROPERTY. J IS ALSO OWNER OF PIN : . AND HAS COMPLETED A SURVEY FOR ALL CONTACT INFO MOVING FORWARD

Thank you for taking the time to complete this inventory.

Please note that the completed form may be included as an appendix in Stantec's report to our client.

Signatures: _____ DEC 12, 2017

(field personnel) (date)

Signatures: _____

(project manager) (date)

APPENDIX F:
DEWATERING CALCULATIONS

Dupuit Forcheimer Equation - Trench/Linear Excavation

To calculate flow from a line source in an unconfined aquifer using a derivation of the Dupuit Forcheimer equation, and assuming a trench with flow from both sides including flow from ends of trench, where each end of the trench is treated as one half of a circular well with radial flow:

$$Q = \frac{2xK\left(H^2 - {h_w}^2\right)}{2L} + \frac{\pi K(H^2 - h^2)}{\ln\frac{R_o}{R_s}}$$

Where:

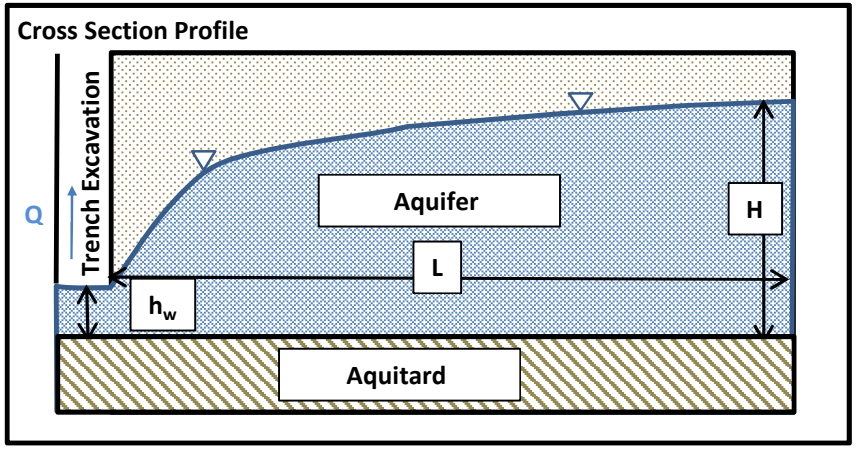
- Q = pumping rate in m^3/s
- K = hydraulic conductivity in m/s
- H = hydraulic head of the original water table (m)
- h_w = hydraulic head at the base of the trench (m)
- R_o = radius of influence at end of trench (m)
- L = equivalent radius of influence for a line source (m) from centre of the excavation
- x = length of the trench (m)
- R_s = equivalent radius of the dewatering system / trench (m)

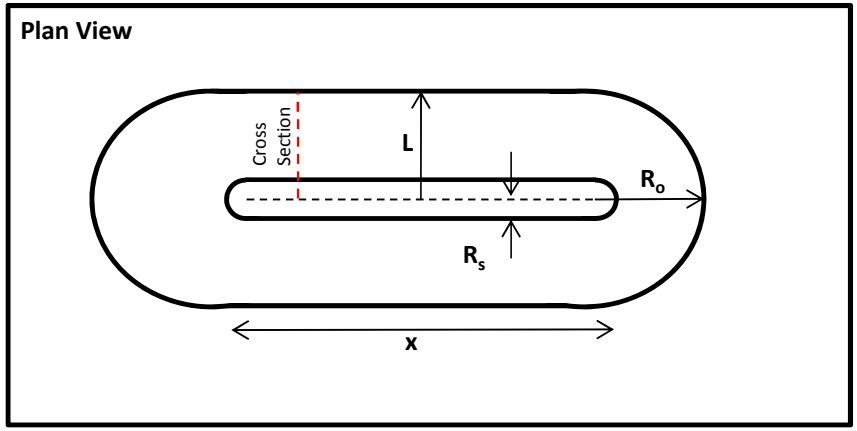
The equivalent radius of influence (R_o) for a point source is approximated using the Sichart and Kryieleis method:

$$R_o = R_w + 3000(H - h_w)\sqrt{K}$$

and from R_o, the equivalent radius of influence (L) for a line source can be approximated by:

$$L = \frac{R_o}{2}$$





Calculations:

Trench Excavation (300 m in length)

K =	7.7E-06 m/s	x =	300 m	Q=	0.001995995 m^3/s
H =	2.6 m	R_s =	0.25 m		**172,454 L/day**
h_w =	1 m	Base of Aquifer	2.7 m BGS		
R_o =	13.6 m	Static Water Level	0.1 m BGS		
L =	6.8 m	Depth requiring dewatering	1.7 m BGS		

Equations obtained from Powers, J.P., A.B. Corwin, P.C. Schmall, and W.E. Kaeck, 2007. Construction Dewatering and Groundwater Control, New Methods and Applications. John Wiley & Sons, Inc., 3rd Edition.