Blossom Solar, LLC

Blossom Solar

Exhibit N

Preliminary Geotechnical Exploration Report

Case No. 22-0151-EL-BGN

Preliminary Geotechnical Engineering Report

Blossom Solar Study
Marion and Morrow Counties, Ohio
May 11, 2021
Terracon Project No. N4215106

Prepared for:
Burns & McDonnell
Columbus, Ohio

Prepared by:
Terracon Consultants, Inc.
Columbus, Ohio

May 11, 2021

Burns & McDonnell
530 W. Spring St, Suite 200
Columbus, Ohio 43215

Attn: Mr. Nathan Textor, P.E. – Associate Geotechnical Engineer
P: (816) 782-6265
E: ntextor@burnsmcd.com

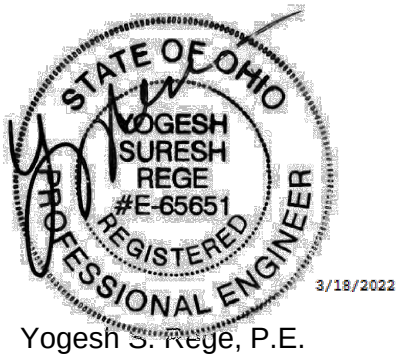
Re: Preliminary Geotechnical Engineering Report
Blossom Solar Study
Marion and Morrow Counties, Ohio
Terracon Project No. N4215106

Dear Mr. Textor:

We have completed the Preliminary Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PN4215106 dated April 5, 2021. This report presents the findings of the subsurface exploration and provides a discussion on the possible geohazard risk components with the proposed development.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.



Ganesh Vairavan
Senior Staff Engineer

Yogesh S. Rege, P.E.
Senior Principal, Office Manager

SME Reviewed by Arin Barkataki, P.E.

REPORT TOPICS

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EXPLORATION AND TESTING PROCEDURES
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS
SUPPORTING INFORMATION

Note: Refer to each individual Attachment for a listing of contents.

Preliminary Geotechnical Engineering Report

Blossom Solar Study

Miller Road

Marion and Morrow Counties, Ohio

Terracon Project No. N4215106

May 11, 2021

INTRODUCTION

This report presents the results of our subsurface exploration and preliminary geotechnical engineering services performed for the proposed Blossom Solar project to be located in Marion and Morrow Counties, Ohio. The purpose of these services is to provide information and a discussion on the possible geohazard risk components with the proposed development.

The geotechnical engineering Scope of Services for this project included the advancement of twelve test borings to depths ranging from approximately 20 to 50 feet below existing site grades.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs and/or as separate graphs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project site is bordered by State Road 100, State Road 61, Bloomingrove-New Winchester Road, and State Road 309 in Morrow County, Ohio. Approximate coordinates of the central portion of the project site are 40.6858, -82.8355. See **Site Location**
Existing Improvements	Agricultural fields, wooded areas, existing roadways, and some residential structures.
Current Ground Cover	Topsoil, grass, and wooded areas.
Existing Topography	Based on publicly available maps (Google Earth), the project site appears to be moderately sloping with ground surface elevations ranging across the site from approximately 1,045 to 1,155 feet.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Information Provided	Scope of Work document prepared by B&McD, dated March 23, 2021, provided via email dated March 29, 2021.
Project Description	This project is being performed as a part of the 'Siting Study' being performed for the Blossom Solar Facility project. Our scope of work included providing the boring logs, laboratory testing results, and a discussion on possible geohazard risks involved with the proposed development. If this site is chosen for the development, we understand that a geotechnical engineering study specific to the project will be performed.

GEOTECHNICAL CHARACTERIZATION

Geology

Based on the Ohio Department of Natural Resources Quaternary Geology Map of Ohio, the project site is located within the Central Ohio Clayey Till Plains section of Central Lowland province within Interior Plains. This physiographic region is characterized with a surface of clayey till and well-defined moraines with intervening flat-lying ground moraine and intermorainal lake basins. Typically, it does not contain boulder belts with limited sand and gravel outwash. The surficial geology at the project site consists of clayey high lime Wisconsinan-age till and lacustrine materials. The glacial till is a heterogeneous mixture of clay, silt, sand, gravel, and rock fragments, which was deposited by glacial ice advancing over bedrock or other glacial deposits. The bedrock geology consists of Berea Sandstone, Bedford and Sunbury Shale. The primary rocks are anticipated to be sandstone and shale.

Subsurface Conditions

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** section and the GeoModel can be found in the **Figures** section of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	Topsoil	About 4 to 6 inches of topsoil [1]
2	Clay	Lean clay with varying amounts of sand and gravel; generally medium stiff to stiff
3	Interbedded Sand	Clayey sand and silty sand with varying amounts of gravel; poorly graded sand with varying amounts of clay and gravel; poorly graded gravel with varying amounts of clay and gravel; generally loose to medium dense
4	Bedrock	Bedrock consisting of very severely weathered shale

1. Topsoil thickness encountered in the borings ranged from approximately 4 to 6 inches; however due to prior usage of the site for agricultural purposes, it is possible that the previously tilled horizon would be comprised of highly organic soils to deeper depths. The actual topsoil depths across the site can vary significantly as the borings represent conditions at widely spaced locations; therefore, the topsoil depths from the borings should not be used for estimating stripping depths.

Groundwater

The borings were observed while drilling and immediately upon completion of drilling for the presence and level of groundwater. Table below shows the groundwater conditions observed.

Boring ID	Approximate Depth of Groundwater Below Existing Site Grade While Drilling (feet)	Approximate Depth of Groundwater Below Existing Site Grade Upon Completion of Drilling (feet)
B-1	18	14
B-2	23.5	40
B-3	Not encountered	Not encountered
B-4	Not encountered	Not encountered
B-5	Not encountered	Not encountered
B-6	11.5	Not encountered
B-7	Not encountered	Not encountered
B-8	Not encountered	Not encountered
B-9	Not encountered	Not encountered
B-10	13	11.5
B-11	Not encountered	Not encountered
B-12	21	34

Groundwater was not encountered in some of the borings during and immediately after completion of drilling. Absence of groundwater in the borings does not necessarily mean these borings were terminated above groundwater. Due to the low permeability of the soils encountered in these borings, a relatively long period of time may be necessary for a groundwater level to develop and stabilize in a borehole in these materials. Long term observations in piezometers or observation

wells sealed from the influence of surface water are often required to define groundwater levels in materials of this type.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

CONTRIBUTORY RISK COMPONENTS

Item	Description
Suitability Statement	The borings typically encountered medium stiff to stiff consistency lean clay and loose to medium dense granular soils. Based on the encountered conditions in the borings, in our opinion, the site appears to be suitable for the proposed solar development. Additional soil test borings should be performed to adequately explore the site as part of a design-level study. Additionally, a full-scale pile load testing (PLT) program should be considered as the project design progresses. The results of a full scale PLT program in conjunction with soil test boring/test pit results are often successful in reducing the design embedment depth when compared to designs solely based on explorative results and analytical methods.
Soil Conditions	Topsoil thickness ranged from about 4 to 6 inches in the borings; however, due to prior usage of the site for agricultural purposes, it is possible that the previously tilled horizon would comprise of highly organic soils to deeper depths. This depth should be determined during the design level study by performing various test pits across the site. The subsurface profile based on the preliminary borings consisted of both native cohesive and granular soils. The granular soils could occur at random locations and random depths in the glacial till soils at the site. Weathered shale was encountered in one boring (B-12) during this exploration at a depth of about 23.5 feet, therefore weathered bedrock can be encountered within the embedment depth of driven piles that will support the PV arrays and inverters. Additional exploration is recommended to map areas of shallow bedrock.
Access	Wet surface conditions, following extended periods of rainfall, could create access issues for rubber-tired vehicles. The site will generally be more accessible in the summer and early fall due to the improved drying conditions.
Groundwater	Groundwater was encountered in some borings during and at completion of drilling at depths ranging from about 11.5 to 34 feet below existing surface. Based on our experience in the project area, groundwater levels could approach the surface at certain times during the year. Excavations, such as trenches for electrical cable and conduit, will likely encounter groundwater and require dewatering. Excavations for shallow foundations could also encounter groundwater, especially if construction is performed during periods of seasonally high groundwater. While precipitation is relatively constant throughout the year, groundwater levels are expected to be deepest during the late summer due to increased evaporation rates.
Site Drainage	Based on publicly available maps (Google Earth), the site topography elevations range from approximately 1,045 to 1,155 feet. Drainage tiles were likely installed to

Item	Description
	facilitate farming activities and site access. Filling the drainage ditches, swales or destruction of other site drainage systems (e.g., drainage tiles) will result in increased groundwater levels, softer soils, and generally undesirable subsurface conditions.
Karst	There are no karst related hazards mapped within the project area.
Mines	There are no surficial and underground mines mapped within the project site.
Frost Heave Potential	We anticipate the solar arrays for this project to be supported by driven piles. The driven piles should be designed to resist design loads including compression, uplift, frost heave action (adfreeze), and lateral forces. Equipment pad or slab-on-ground foundations should be designed and constructed to reduce effects of frost heave. Developing a zone of non-frost susceptible material below structures or embedding foundation below conventional frost protection depths should be planned.
Corrosion Hazard	The soil properties that can significantly affect the aggressiveness of corrosion to buried metal structures include pH, oxidation-reduction potential, sulfates, sulfides, total dissolved salts, chlorides, resistivity, and moisture content. These properties were measured, and the results are included in the **Attachments** section. These test results are provided to assist a qualified engineer to design corrosion protection for the production piles and other project elements. Based on National Resources Conservation Service's (NRCS) soil mapping, majority of the site is mapped within moderate susceptibility to corrosion of concrete with some areas mapped within low and high susceptibility. Based on NRCS soil mapping, majority of the site is mapped within high susceptibility to corrosion of steel. More laboratory testing is recommended to be performed to investigate this.
Excavation Hazards	As a minimum, all temporary excavations should be sloped or braced as required by Occupational Health and Safety Administration (OSHA) regulations to provide stability and safe working conditions. Temporary excavations will probably be required during grading operations. The grading contractor, by his contract, is usually responsible for designing and constructing stable, temporary excavations and should shore, slope or bench the sides of the excavations as required, to maintain stability of both the excavation sides and bottom. All excavations should comply with applicable local, state and federal safety regulations, including the current OSHA Excavation and Trench Safety Standards.
Anticipated Pile Drivability	A full-scale pile load testing (PLT) program should be considered as the project design progresses. We anticipate pile driving can be accomplished with conventional equipment based on encountered soil conditions frozen ground conditions.
Expansive Soil Hazards	Test borings encountered low plasticity clayey soils. We do not anticipate that the shrink-swell potential of soils will be an issue for the design and construction at the proposed site.
General Construction Considerations	The near-surface soils are moderately moisture sensitive and subject to degradation in strength and stability with exposure to moisture. To the extent practical, earthwork should be performed during warmer and drier periods of weather to reduce the amount

Item	Description
	of necessary subgrade remedial measures for soft and unsuitable conditions beneath access roadways, equipment pads, etc.

Once the site is selected and project information is developed, additional test borings, test pits, laboratory testing (including thermal resistivity tests), in-situ electrical resistivity tests, pile load testing, and geotechnical engineering reporting services should be performed. We can provide a proposal for these services, upon request.

The **General Comments** section provides an understanding of the report limitations.

GENERAL COMMENTS

Our opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our preliminary site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide further geotechnical testing in the design phases, observation and materials testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client, and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for preliminary study purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly

impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

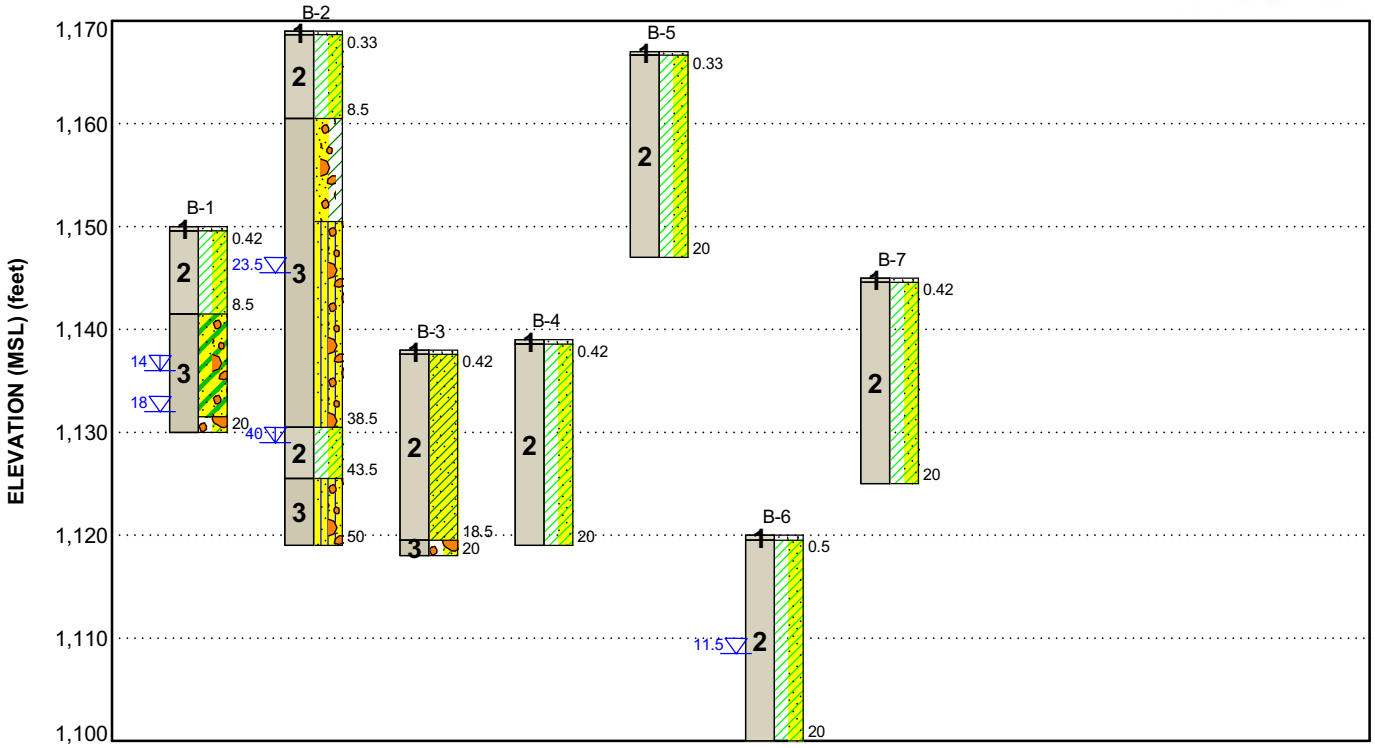
FIGURES

Contents:

GeoModel (2 pages)

GEOMODEL

Blossom Solar Study ■ Marion and Morrow Counties, OH
Terracon Project No. N4215106



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	**Topsoil**	About 4 to 6 inches topsoil
2	**Clay**	Lean clay with varying amounts of sand and gravel; generally medium stiff to stiff
3	**Interbedded Sand**	Clayey sand and silty sand with varying amounts of gravel; poorly graded sand with varying amounts of clay and gravel; poorly graded gravel with varying amounts of clay and gravel; generally loose to medium dense
4	**Bedrock**	Bedrock consisting of very severely weathered shale

LEGEND

- Topsoil
- Lean Clay with Sand
- Clayey Sand with Gravel
- Poorly-graded Gravel with Clay and Sand
- Poorly-graded Sand with Clay and Gravel
- Silty Sand with Gravel
- Sandy Lean Clay

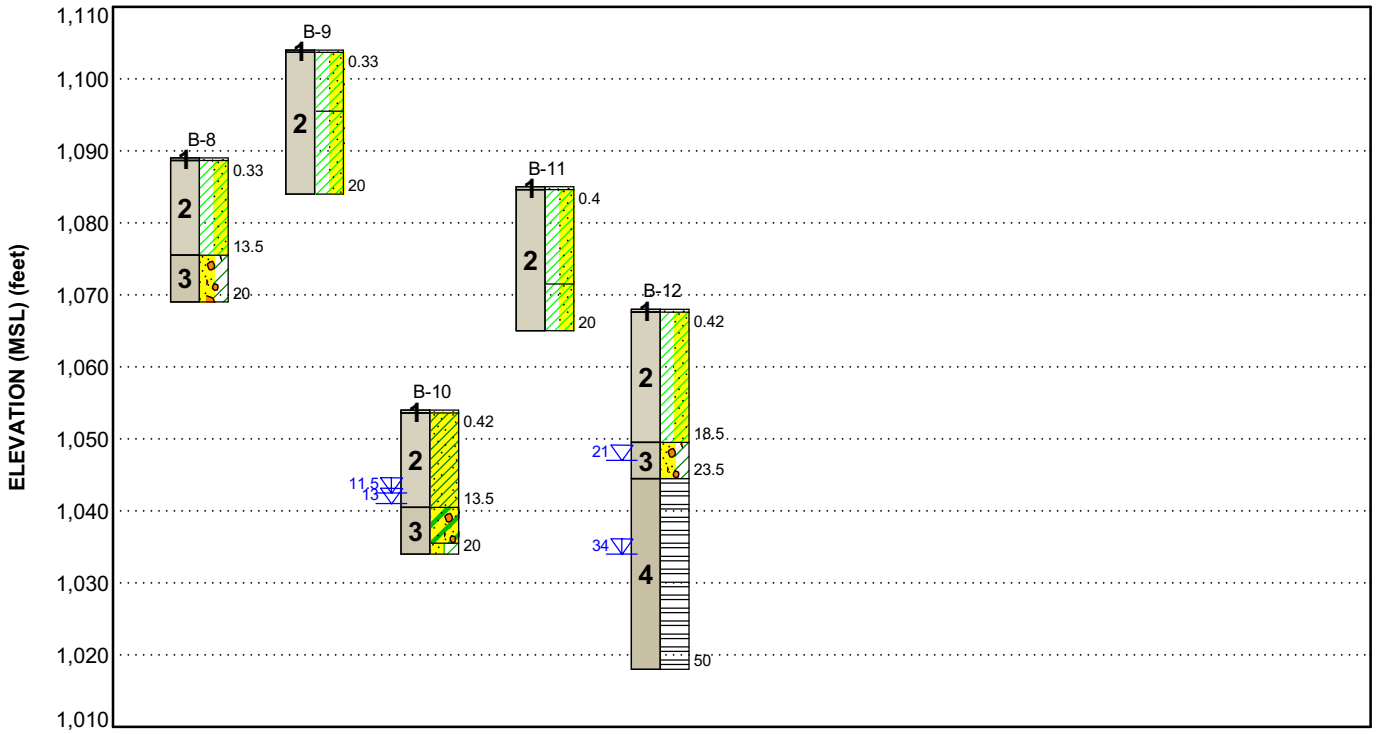
▽ First Water Observation
▽ Second Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

GEOMODEL

Blossom Solar Study ■ Marion and Morrow Counties, OH
Terracon Project No. N4215106



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
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4	Bedrock	Bedrock consisting of very severely weathered shale

LEGEND

- Topsoil
- Sandy Lean Clay
- Shale
- Lean Clay with Sand
- Clayey Sand with Gravel
- Poorly-graded Sand with Clay and Gravel
- Poorly-graded Sand with Clay

▽ First Water Observation
▽ Second Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

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ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Number of Borings	Boring Depth (feet)	Planned Location
10	20	Array Area
2	50	Substation

Boring Layout and Elevations: Unless otherwise noted, Terracon personnel provided the boring layout. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ±10 feet) and approximate elevations were obtained by interpolation from the publicly available maps.

Subsurface Exploration Procedures: We advanced the test borings with a track-mounted drill rig using rotary wash techniques. Four samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. Soil sampling was performed using a standard 2-inch outer diameter split barrel sampling spoon that was driven into the ground by a 140-pound rope and cathead operated safety hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of an 18-inch sampling interval was recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. The samples were placed in appropriate containers, taken to our soil laboratory for testing, and classified by a geotechnical engineer. In addition, we observed and recorded groundwater levels during sampling and immediately upon completion of drilling.

Our exploration team prepared field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs included visual classifications of materials encountered during drilling, and our interpretation of subsurface conditions between samples. Final boring logs, prepared from field logs, represent the geotechnical engineer's interpretation, and include modifications based on observations and laboratory tests.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil and rock strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D422 Standard Test Method for Particle-Size Analysis of Soils
- ASTM D2166/D2166M Standard Test Method for Unconfined Compressive Strength of Cohesive Soil

The laboratory testing program often included examination of soil samples by an engineer. Based on the material's texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System.

Corrosion Testing: SPT soil samples collected from 1 to 4 feet bgs at two locations at the project site were assigned for corrosivity testing. The testing included water-soluble sulfate ion content in soil in accordance with ASTM C1580 presented in percent by weight, water-soluble chloride ion content in accordance with ASTM D512 presented in percent by weight, pH in accordance with ASTM D4972, Sulfides in accordance with ASTM D4658, Oxidation Reduction Potential in accordance with ASTM G200, and electrical resistivity using the "soil box" method in accordance with ASTM G187.

SITE LOCATION AND EXPLORATION PLANS

Contents:

Site Location Plan
Exploration Plan

Note: All attachments are one page unless noted above.

SITE LOCATION

Blossom Solar Study ■ Iberia, OH
May 11, 2021 ■ Terracon Project No. N4215106

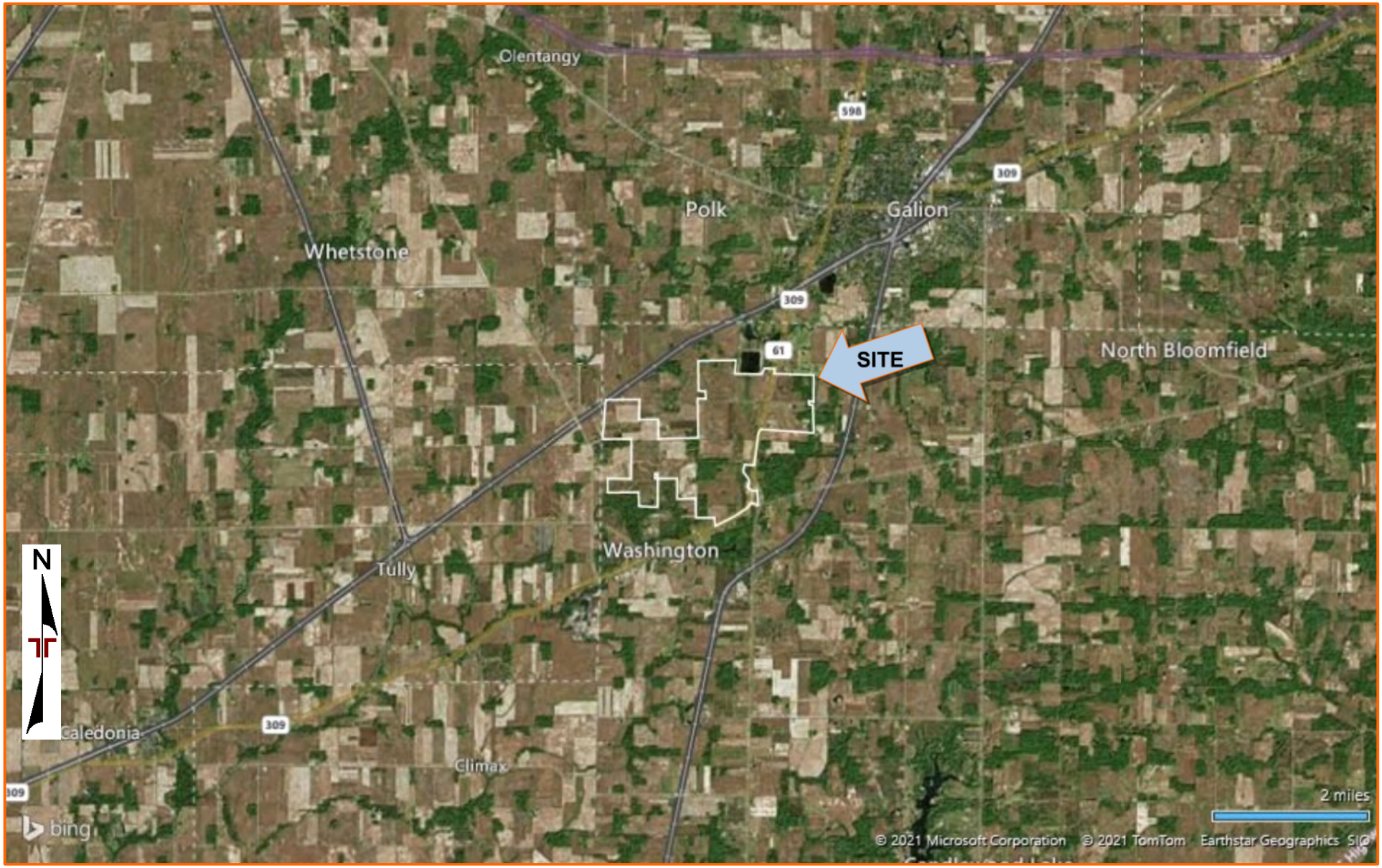


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: GALION, OH (1/1/1973).

EXPLORATION PLAN
Blossom Solar Study ■ Iberia, OH
May 11, 2021 ■ Terracon Project No. N4215106

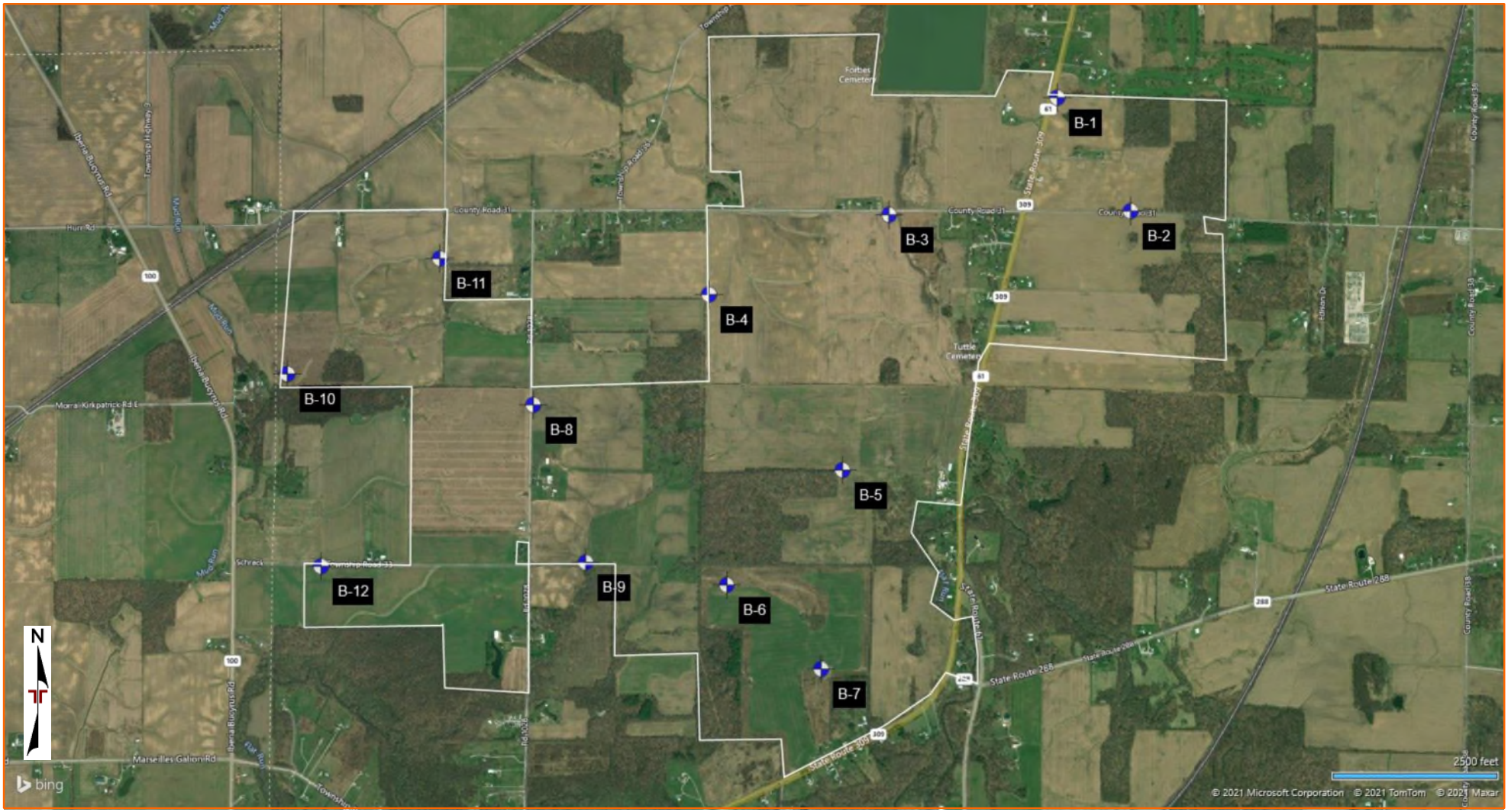


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION RESULTS

Contents:

Boring Logs (B-1 through B-12)
Atterberg Limits
Grain Size Distribution (2 pages)
Unconfined Compressive Strength (2 pages)
Corrosivity

Note: All attachments are one page unless noted above.

BORING LOG NO. B-1

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.7030° Longitude: -82.8159°

Approximate Surface Elev.: 1150 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.4	1149.5+/-									
			TOPSOIL (5.0")									
			LEAN CLAY WITH SAND (CL), brown, moist, medium stiff				18	2-2-3-3 N=5	3.5		23.0	
2							18	2-3-3 N=6	3.5		30.0	
				5								
			@ 5.5' - 7' very stiff				10	2-10-8 N=18	3		19.0	29-15-14
		8.5	1141.5+/-									
			CLAYEY SAND WITH GRAVEL (SC), brown, moist, medium dense				18	3-5-5 N=10	-		17.0	
3				10								
			@ 13.5' color changes to gray		▽		18	3-3-4 N=7	-			
				15	▽							
		18.5	1131.5+/-									
			POORLY GRADED GRAVEL WITH CLAY AND SAND (GP-GC), brown, wet, medium dense				18	11-10-8 N=18	-			
		20.0	1130+/-	20								
			Boring Terminated at 20 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water observed at 18' while drilling*

▽ *Water encountered at 14' after completion*

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-20-2021 | Boring Completed: 04-20-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-2

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6983° Longitude: -82.8119°

Approximate Surface Elev.: 1169 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.3	1168.5+/-									
		TOPSOIL (4.0")										
2		**LEAN CLAY WITH SAND (CL)**, brown, moist, medium stiff to stiff					18	1-2-2-3 N=4	1.5		19.0	
							18	3-5-8 N=13	4.5		16.0	
				5			10	5-6-6 N=12	4.5		16.0	
		8.5	1160.5+/-									
3		**POORLY GRADED SAND WITH CLAY AND GRAVEL (SP-SC)**, brown, moist, loose					18	3-4-3 N=7	-		19.0	
				10			10	2-1-2 N=3	-		14.0	
		18.5	1150.5+/-	15								
		SILTY SAND WITH GRAVEL (SM), brown, moist, loose to medium dense					8	2-2-3 N=5	-		12.0	NP
				20								
		@ 23.5' changes wet			▽		8	3-4-8 N=12	-		18.0	
				25								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water observed at 23.5' while drilling*

▽ *Water encountered at 40' after completion*

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-20-2021 | Boring Completed: 04-20-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-2

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6983° Longitude: -82.8119°

Approximate Surface Elev.: 1169 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
3			**SILTY SAND WITH GRAVEL (SM)**, brown, moist, loose to medium dense *(continued)*									
							6		-			
				30								
							0	7-7-7 N=14	-			
				35								
		38.5	1130.5+/-									
2			**LEAN CLAY WITH SAND (CL)**, trace gravel, dark gray, wet, stiff									
					▽		16	3-7-7 N=14	4.0		12.0	
				40								
		43.5	1125.5+/-									
3			**SILTY SAND WITH GRAVEL (SM)**, dark gray, wet, very dense									
							18	19-44-50 N=94	-			
				45								
							8	50/4"	-			
		50.0	1119+/-	50								
			Boring Terminated at 50 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water observed at 23.5' while drilling*

▽ *Water encountered at 40' after completion*

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-20-2021 | Boring Completed: 04-20-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-3

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6982° Longitude: -82.8251°

Approximate Surface Elev.: 1138 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.4	1137.5+/-									
			TOPSOIL (5.0)									
			SANDY LEAN CLAY (CL), dark brown, moist, medium stiff to stiff				10	3-4-5-6 N=9	3.5		33.0	
							2	3-3-4 N=7	-		23.0	
				5								
			@ 5.5' color changes to brown				18	2-3-3 N=6	3.0		22.0	
2							10	2-2-2 N=4	3.0		26.0	
				10			18			2960	17.3	28-14-14
			@ 13.5' color changes to gray				18	3-3-5 N=8	4.0			
				15								
		18.5	1119.5+/-									
3			**POORLY GRADED GRAVEL WITH CLAY AND SAND (GP-GC)**, brown, moist, medium dense				10	5-5-5 N=10	-			
		20.0	1118+/-	20								
			Boring Terminated at 20 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No water observed while drilling

No water encountered upon completiong

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-20-2021 | Boring Completed: 04-20-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-4

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6949° Longitude: -82.8349°

Approximate Surface Elev.: 1139 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.4	1138.5+/-									
		TOPSOIL (5.0")										
		LEAN CLAY WITH SAND (CL), trace gravel, brown, moist, medium stiff to stiff					24	1-3-3-5 N=6	2.5		22.0	
							18	4-6-9 N=15	4.5		12.0	
				5			18	4-5-8 N=13	4.5		15.0	
		@ 8.5' color changes to gray					18	4-5-9 N=14	2.5		15.0	
2				10								
							10	4-5-6 N=11	3.0			
				15								
							10	3-4-5 N=9	2.0			
		20.0	1119+/-	20								
		Boring Terminated at 20 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No water observed while drilling

No water encountered upon completiong

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-20-2021 | Boring Completed: 04-20-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-5

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6876° Longitude: -82.8276°

Approximate Surface Elev.: 1167 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.3	1166.5+/-									
			TOPSOIL (4.0")									
			LEAN CLAY WITH SAND (CL), trace gravel, brown, moist, medium stiff to stiff				18	3-3-4-5 N=7	4.0		21.0	
			@ 8.5' color changes to dark brown				18	6-6-7 N=13	4.5		14.0	27-15-12
				5								
							10	5-6-8 N=14	4.5		13.0	
							18	6-8-13 N=21	4.5		15.0	
2				10								
							18	4-5-5 N=10	3.5			
				15								
			@ 18.5' color changes to gray				18	2-3-4 N=7	3.0			
		20.0	1147+/-	20								
			Boring Terminated at 20 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No water observed while drilling

No water encountered upon completiong

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-20-2021 | Boring Completed: 04-20-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-6

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6829° Longitude: -82.8339°

Approximate Surface Elev.: 1120 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.5	1119.5+/-									
			TOPSOIL (6")									
			LEAN CLAY WITH SAND (CL), trace gravel, brown, moist, medium stiff to stiff				24	0-0-2-3 N=2	2			
			@ 0' - 2' soft									
							18	3-6-6 N=12	2.5			
				5								
			@ 5.5' color changes to gray				18	3-6-7 N=13	2.5			
							18	1-2-4 N=6	2			
2				10	▽							
							18	3-4-7 N=11	2.5			
				15								
							18	3-4-5 N=9	2			
		20.0	1100+/-	20								
			Boring Terminated at 20 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water observed at 11.5' while drilling*

No water encountered upon completiong

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-21-2021 | Boring Completed: 04-21-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-7

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6794° Longitude: -82.8288°

Approximate Surface Elev.: 1145 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.4	1144.5+/-									
			TOPSOIL (5.0")									
			LEAN CLAY WITH SAND (CL), trace gravel, brown, moist, medium stiff to stiff				22	0-1-2-2 N=3	2.5		20.0	
							18	2-3-4 N=7	3.0		18.0	27-14-13
			@ 5.5' color changes to gray	5			18	3-5-4 N=9	3.0		16.0	
2							18	2-3-6 N=9	2.5		17.0	
				10								
							18	2-3-3 N=6	2.5			
				15								
		20.0	1125+/-				4	1-2-3 N=5	2.5			
			Boring Terminated at 20 Feet	20								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No water observed while drilling

No water encountered upon completiong

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-21-2021 | Boring Completed: 04-21-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-8

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6903° Longitude: -82.8445°

Approximate Surface Elev.: 1089 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.3	1088.5+/-									
			TOPSOIL (4.0")									
2			**LEAN CLAY WITH SAND (CL)**, trace gravel, brown to gray, moist, medium stiff to stiff				24	2-2-3-4 N=5	3		21.0	
							18	4-6-6 N=12	3		15.0	
				5			18	3-6-8 N=14	3		14.0	
			@ 8.5' color changes to gray				16	4-6-7 N=13	3.5		12.0	
			@ 8.5' - 10' trace sand	10								
		13.5	1075.5+/-									
3			**POORLY GRADED SAND WITH CLAY AND GRAVEL (SP-SC)**, gray, moist, very dense, contains shale fragments				18	12-25-31 N=56	-			
				15								
							10	34-50/3"	-			
		20.0	1069+/-	20								
			Boring Terminated at 20 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No water observed while drilling

No water encountered upon completiong

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-20-2021 | Boring Completed: 04-20-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-9

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6838° Longitude: -82.8416°

Approximate Surface Elev.: 1104 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.3	1103.5+/-									
		TOPSOIL (4.0")										
		LEAN CLAY WITH SAND (CL), brown, moist, medium stiff to stiff					24	3-4-4-4 N=8	4.0		24.0	
							4	4-2-4 N=6	3.5		23.0	
				5			16	3-3-4 N=7	3.5		18.0	
		8.5	1095.5+/-									
2		**LEAN CLAY WITH SAND (CL)**, trace gravel, dark brown, moist, stiff					14	4-9-6 N=15	-		13.0	
				10								
							16	3-4-5 N=9	3.5			
				15								
							2	3-6-7 N=13				
		20.0	1084+/-	20								
		Boring Terminated at 20 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No water observed while drilling

No water encountered upon completiong

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-20-2021 | Boring Completed: 04-20-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-10

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6916° Longitude: -82.8579°

Approximate Surface Elev.: 1054 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.4	1053.5+/-									
2							22	1-2-2-3 N=4	2.0		23.0	
							16	2-3-6 N=9	3.5		15.0	
				5			23			5920	15.3	30-15-15
							18	3-3-5 N=8	-3.5		12.0	
				10								
		13.5	1040.5+/-									
3							16	12-19-16 N=35	-		11.0	
		18.5	1035.5+/-	15								
		20.0	1034+/-				16	14-12-13 N=25	-			
				20								

TOPSOIL (5.0")

SANDY LEAN CLAY (CL), trace gravel, brown, moist, medium stiff to stiff, contains rootlets

@ 8.5' color changes to gray

CLAYEY SAND WITH GRAVEL (SC), gray, wet, dense

POORLY GRADED SAND WITH CLAY (SP-SC), gray, wet, dense

Boring Terminated at 20 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water observed at 13' while drilling

Water encountered at 11.5' after completion

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-22-2021 | Boring Completed: 04-22-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-11

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6964° Longitude: -82.8496°

Approximate Surface Elev.: 1085 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.4	1084.5+/-									
			TOPSOIL (5")									
			LEAN CLAY WITH SAND (CL), trace gravel, brown, moist, medium stiff to stiff				18	1-1-2-2 N=3	2		26.0	
							18	4-6-8 N=14	4		13.0	
				5								
							18	3-4-6 N=10	3		15.0	
							18	2-4-7 N=11	3		12.0	
2				10								
		13.5	1071.5+/-									
			LEAN CLAY WITH SAND (CL), trace gravel, gray, moist, very stiff to hard				18	4-6-10 N=16	3			
				15								
							18	15-17-16 N=33	3			
		20.0	1065+/-	20								
			Boring Terminated at 20 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No water observed while drilling

No water encountered upon completiong

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-21-2021 | Boring Completed: 04-21-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-12

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6837° Longitude: -82.8560°

Approximate Surface Elev.: 1068 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
1		0.4	1067.5+/-									
			TOPSOIL (5.0")									
			LEAN CLAY WITH SAND (CL), trace gravel, brown, moist, medium stiff to stiff				24	2-2-3-4 N=5	2.5		20.0	
							18	3-4-4 N=8	3.5		16.0	
			@ 5.5' - 7' very stiff	5			18	4-7-9 N=16	4.0		14.0	
2							18	3-4-7 N=11	3.5		15.0	24-14-10
				10								
							4	3-3-3 N=6			16.0	
				15								
		18.5	1049.5+/-									
3			**POORLY GRADED SAND WITH CLAY AND GRAVEL (SP-SC)**, dark gray, moist, medium dense				10	7-8-9 N=17	-		12.0	
				20	▽							
		23.5	1044.5+/-									
4			**SHALE**, very severely weathered, gray				12	23-30-50/4"	-		11.0	
				25								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water observed at 21' while drilling*

▽ *Water encountered at 34' after completion*

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-21-2021 | Boring Completed: 04-21-2021

Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

BORING LOG NO. B-12

PROJECT: Blossom Solar Study

CLIENT: Burns & McDonnell Engineering Company Inc Columbus, OH

SITE: Marion and Morrow Counties, OH

LOCATION See Exploration Plan

Latitude: 40.6837° Longitude: -82.8560°

Approximate Surface Elev.: 1068 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	H.P. (tsf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI
4			**SHALE**, very severely weathered, gray *(continued)*	30			8	32-50/3"	-		12.0	
					▽		11	22-50/4"	-		11.0	
				35								
				40			17	25-40-50/5"	-			
							5	50/5"	-			
				45			5	50/5"	-			
		50.0	1018+/-	50								
			Boring Terminated at 50 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25" HSA

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water observed at 21' while drilling*

▽ *Water encountered at 34' after completion*

Terracon
800 Morrison Rd
Gahanna, OH

Boring Started: 04-21-2021 | Boring Completed: 04-21-2021

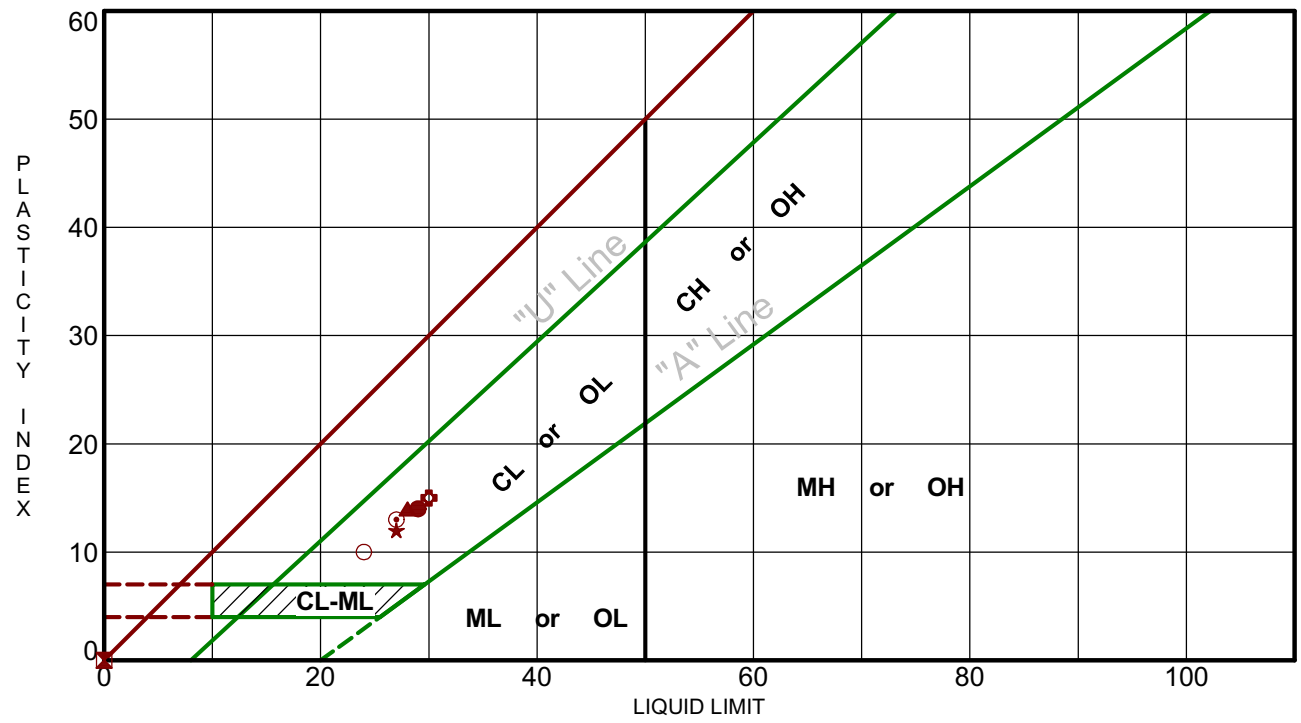
Drill Rig: ATV | Driller: S. Guyer

Project No.: N4215106

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID		Depth	LL	PL	PI	Fines	USCS	Description
●	B-1	5.5 - 7	29	15	14		CL	LEAN CLAY with sand
⊠	B-2	18.5 - 20	NP	NP	NP	17.9	SM	SILTY SAND with GRAVEL
▲	B-3	10 - 12	28	14	14	68.1	CL	SANDY LEAN CLAY
★	B-5	3 - 4.5	27	15	12		CL	LEAN CLAY with SAND
⊙	B-7	3 - 4.5	27	14	13		CL	LEAN CLAY with SAND
✿	B-10	5 - 7	30	15	15	59.2	CL	SANDY LEAN CLAY
○	B-12	8.5 - 10	24	14	10		CL	LEAN CLAY with sand

PROJECT: Blossom Solar Study

PROJECT NUMBER: N4215106

SITE: Marion and Morrow Counties, OH

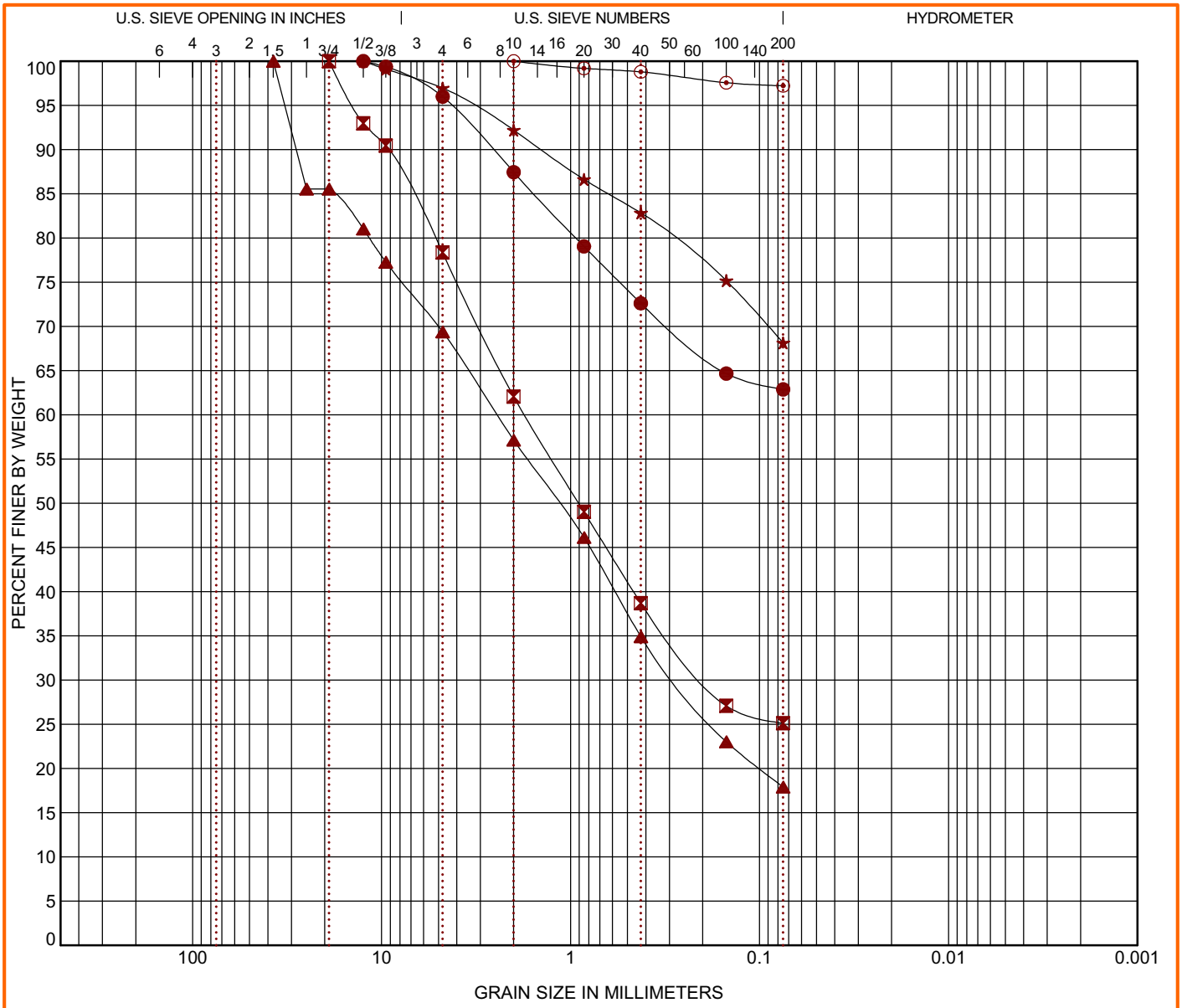
Terracon
800 Morrison Rd
Gahanna, OH

CLIENT: Burns & McDonnell Engineering Company Inc
Columbus, OH

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ATTERBERG LIMITS N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID		Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
●	B-1	8.5 - 10	SANDY LEAN CLAY (CL)	17.0					
⊠	B-2	8.5 - 10	POORLY GRADED SAND with CLAY and GRAVEL (SP-SC)	19.0					
▲	B-2	18.5 - 20	SILTY SAND with GRAVEL (SM)	12.0	NP	NP	NP		
★	B-3	10 - 12	SANDY LEAN CLAY (CL)		28	14	14		
⊙	B-8	8.5 - 10	LEAN CLAY (CL)	12.0					

Boring ID		Depth	D_{90}	D_{50}	D_{30}	D_{10}	%Gravel	%Sand	%Silt	%Fines	%Clay
●	B-1	8.5 - 10	2.59				4.0	33.1		62.9	
⊠	B-2	8.5 - 10	9.255	0.905	0.195		21.6	53.2		25.1	
▲	B-2	18.5 - 20	28.325	1.148	0.276		30.6	51.5		17.9	
★	B-3	10 - 12	1.426				3.0	28.8		68.1	
⊙	B-8	8.5 - 10					0.0	2.8		97.2	

PROJECT: Blossom Solar Study

PROJECT NUMBER: N4215106

SITE:
Marion and Morrow Counties, OH

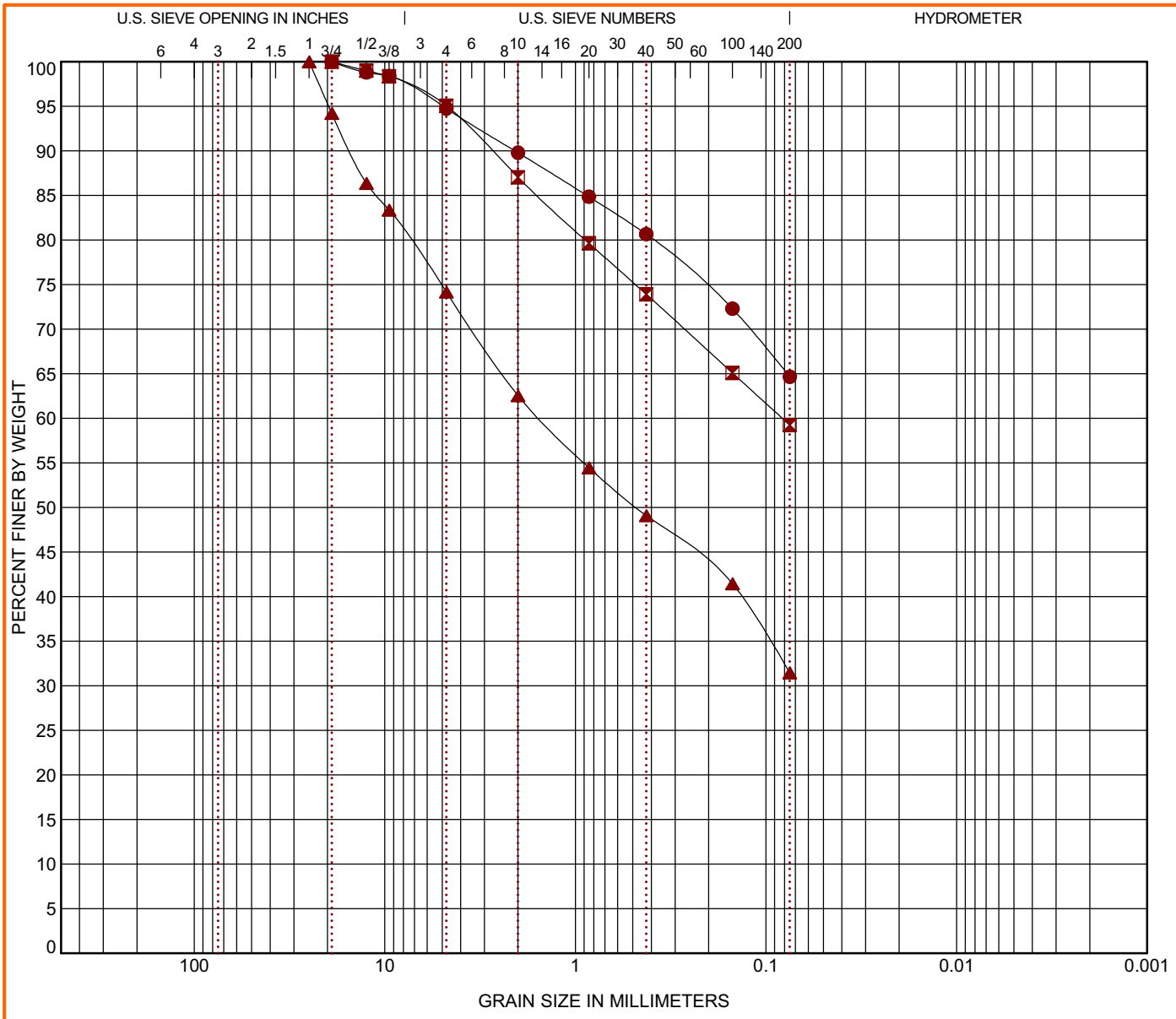
Terracon
800 Morrison Rd
Gahanna, OH

CLIENT: Burns & McDonnell Engineering Company Inc
Columbus, OH

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE USCS-2_SCOUR N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID		Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
●	B-9	8.5 - 10	LEAN CLAY with sand (CL)	13.0					
⊠	B-10	5 - 7	SANDY LEAN CLAY (CL)		30	15	15		
▲	B-10	13.5 - 15	CLAYEY SAND with gravel (SC)	11.0					

Boring ID		Depth	D_{90}	D_{50}	D_{30}	D_{10}	%Gravel	%Sand	%Silt	%Fines	%Clay
●	B-9	8.5 - 10	2.075				5.2	30.1		64.7	
⊠	B-10	5 - 7	2.752				4.9	35.8		59.2	
▲	B-10	13.5 - 15	15.181	0.478			25.8	42.7		31.5	

PROJECT: Blossom Solar Study

PROJECT NUMBER: N4215106

SITE: Marion and Morrow Counties, OH

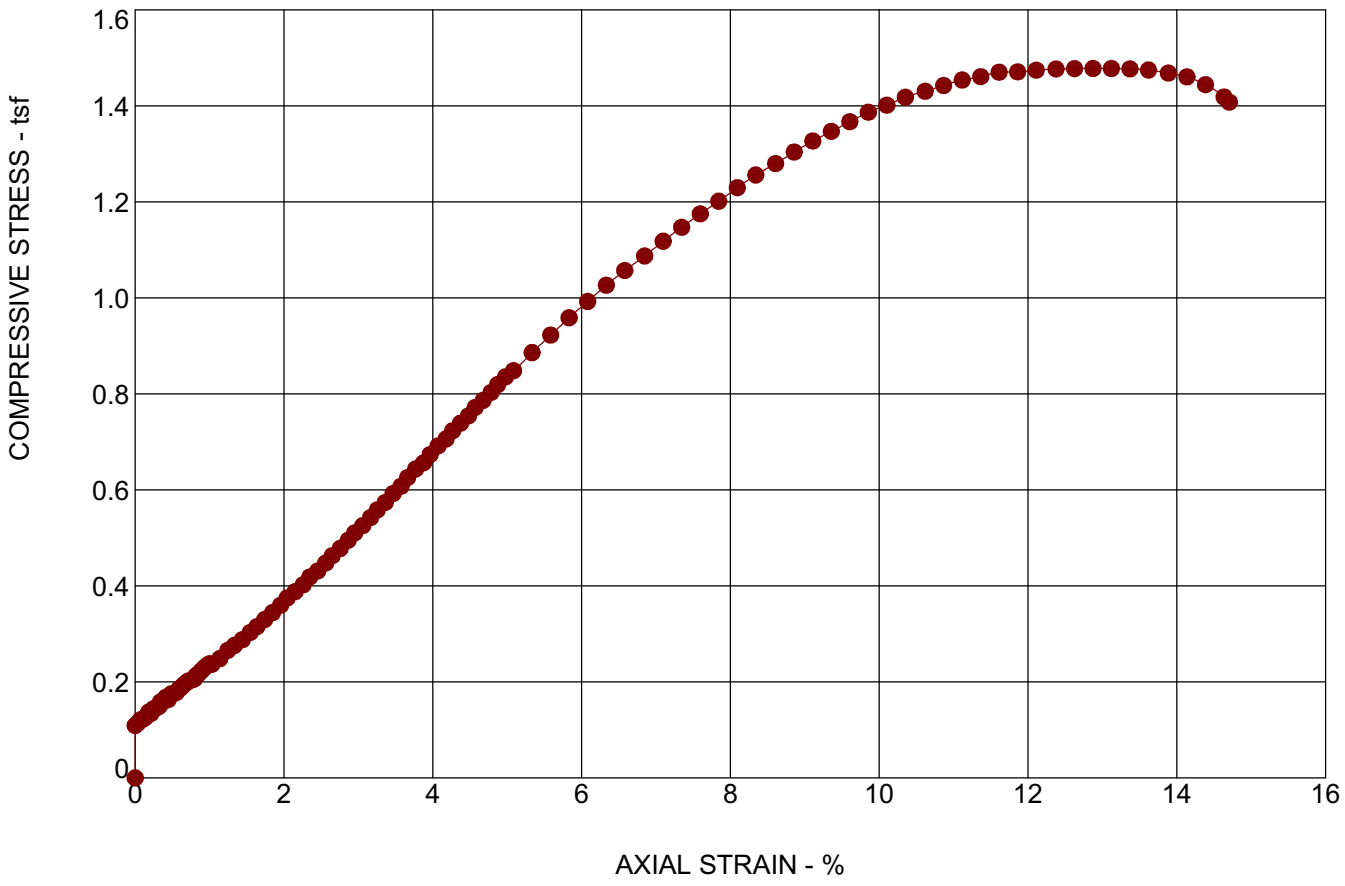
Terracon
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Gahanna, OH

CLIENT: Burns & McDonnell Engineering Company Inc
Columbus, OH

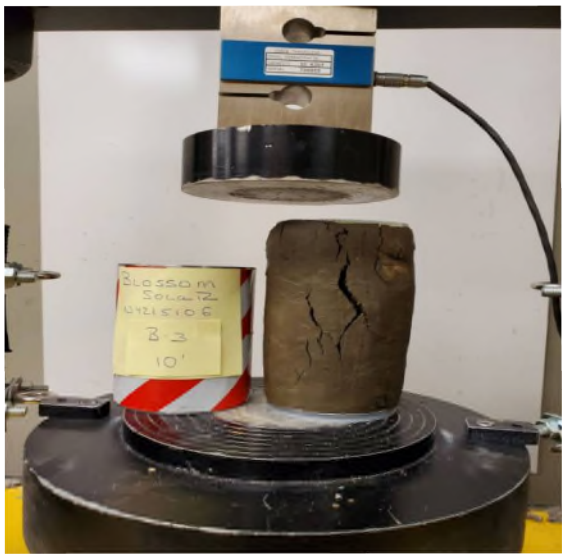
LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE USCS-2_SCOUR N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22

UNCONFINED COMPRESSION TEST

ASTM D2166



SPECIMEN FAILURE PHOTOGRAPH



SPECIMEN TEST DATA

Moisture Content:	%	17.3
Dry Density:	pcf	115
Diameter:	in.	2.84
Height:	in.	5.69
Height / Diameter Ratio:		2.01
Calculated Saturation:	%	
Calculated Void Ratio:		
Assumed Specific Gravity:		
Failure Strain:	%	12.87
Unconfined Compressive Strength	(tsf)	1.48
Undrained Shear Strength:	(tsf)	0.74
Strain Rate:	in/min	0.1139
Remarks:		

SAMPLE TYPE: Shelby Tube

SAMPLE LOCATION: B-3 @ 10 - 12 feet

DESCRIPTION:

LL	PL	PI	Percent < #200 Sieve

PROJECT: Blossom Solar Study

PROJECT NUMBER: N4215106

SITE: Marion and Morrow Counties, OH

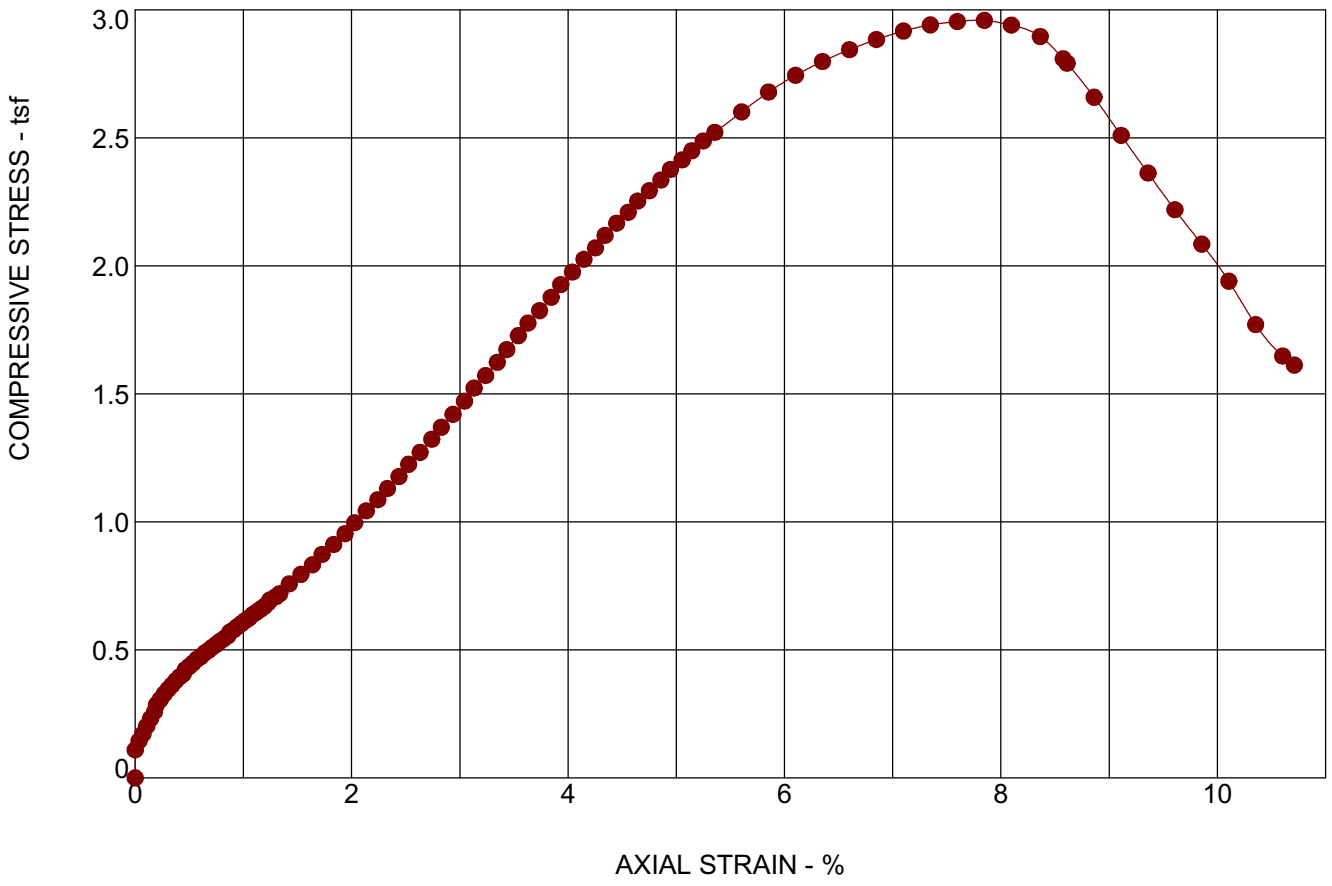
Terracon
800 Morrison Rd
Gahanna, OH

CLIENT: Burns & McDonnell Engineering Company Inc
Columbus, OH

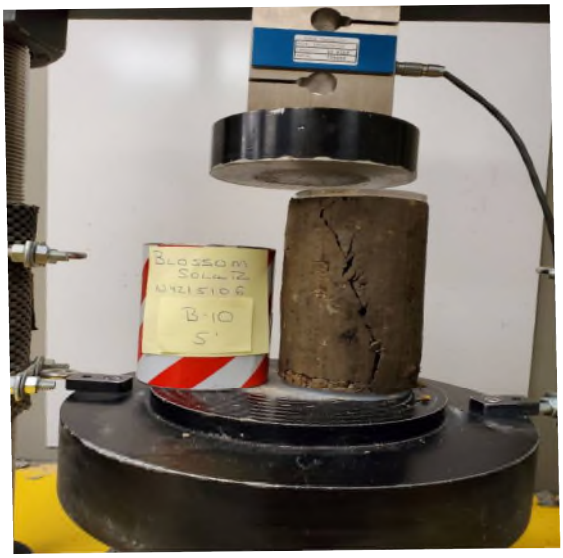
LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. UNCONFINED WITH PHOTOS N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 5/5/21

UNCONFINED COMPRESSION TEST

ASTM D2166



SPECIMEN FAILURE PHOTOGRAPH



SPECIMEN TEST DATA

Moisture Content:	%	15.3
Dry Density:	pcf	123
Diameter:	in.	2.76
Height:	in.	5.69
Height / Diameter Ratio:		2.06
Calculated Saturation:	%	
Calculated Void Ratio:		
Assumed Specific Gravity:		
Failure Strain:	%	7.85
Unconfined Compressive Strength	(tsf)	2.96
Undrained Shear Strength:	(tsf)	1.48
Strain Rate:	in/min	0.1140
Remarks:		

SAMPLE TYPE: Shelby Tube

SAMPLE LOCATION: B-10 @ 5 - 7 feet

DESCRIPTION:

LL	PL	PI	Percent < #200 Sieve

PROJECT: Blossom Solar Study

PROJECT NUMBER: N4215106

SITE: Marion and Morrow Counties, OH

Terracon
800 Morrison Rd
Gahanna, OH

CLIENT: Burns & McDonnell Engineering Company Inc
Columbus, OH

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. UNCONFINED WITH PHOTOS N4215106 BLOSSOM SOLAR SIT.GPJ TERRACON_DATATEMPLATE.GDT 5/5/21

CHEMICAL LABORATORY TEST REPORT

Project Number: N4215106
Service Date: 05/03/21
Report Date: 05/03/21

Terracon
10400 State Highway 191
Midland, Texas 79707
432-684-9600

Client

Burns & McDonnell Engineering Company Inc
530 W Spring St, Suite 200
Columbus, OH 43215

Project

Blossom Solar Study
S R 288
Iberia, OH

Sample Location	B-1	B-12
Sample Depth (ft.)	0-4	0-4
pH Analysis, ASTM - G51-18	7.10	7.40
Water Soluble Sulfate (SO4), ASTM C 1580 (mg/kg)	98	108
Sulfides, ASTM - D4658-15, (mg/kg)	nil	nil
Chlorides, ASTM D 512 , (mg/kg)	16	15
RedOx, ASTM D-1498, (mV)	+487	+375
Total Salts, ASTM D1125-14, (mg/kg)	487	501
Resistivity, ASTM G187, (ohm-cm)	4,233	3,924

Analyzed By: Nohelia Monasterios
Field Engineer

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

SUPPORTING INFORMATION

Contents:

General Notes
Unified Soil Classification System
Description of Rock Properties

Note: All attachments are one page unless noted above.

GENERAL NOTES
DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING	WATER LEVEL	FIELD TESTS
Rock Core Standard Penetration Test	**Water Initially Encountered** **Water Level After a Specified Period of Time** **Water Level After a Specified Period of Time** Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	**N** Standard Penetration Test Resistance (Blows/Ft.) **(HP)** Hand Penetrometer **(T)** Torvane **(DCP)** Dynamic Cone Penetrometer **UC** Unconfined Compressive Strength **(PID)** Photo-Ionization Detector **(OVA)** Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no ctual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength Qu, (tsf)**	**Standard Penetration or N-Value Blows/Ft.**
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

RELATIVE PROPORTIONS OF SAND AND GRAVEL		RELATIVE PROPORTIONS OF FINES	
Descriptive Term(s) of other constituents	Percent of Dry Weight	**Descriptive Term(s) of other constituents**	**Percent of Dry Weight**
Trace	<15	Trace	<5
With	15-29	With	5-12
Modifier	>30	Modifier	>12

GRAIN SIZE TERMINOLOGY		PLASTICITY DESCRIPTION	
Major Component of Sample	**Particle Size**	**Term**	**Plasticity Index**
Boulders	Over 12 in. (300 mm)	Non-plastic	0
Cobbles	12 in. to 3 in. (300mm to 75mm)	Low	1 - 10
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)	Medium	11 - 30
Sand	#4 to #200 sieve (4.75mm to 0.075mm	High	> 30
Silt or Clay	Passing #200 sieve (0.075mm)		

UNIFIED SOIL CLASSIFICATION SYSTEM

Terracon GeoReport

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or $1 > Cc > 3$ [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F,G,H]
			Fines classify as CL or CH		GC	Clayey gravel [F,G,H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or $1 > Cc > 3$ [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G,H,I]
			Fines classify as CL or CH		SC	Clayey sand [G,H,I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A" line [J]		CL	Lean clay [K,L,M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K,L,M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OL	Organic clay [K,L,M,N] / Organic silt [K,L,M,O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K,L,M]
			PI plots below "A" line		MH	Elastic Silt [K,L,M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OH	Organic clay [K,L,M,P] / Organic silt [K,L,M,Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

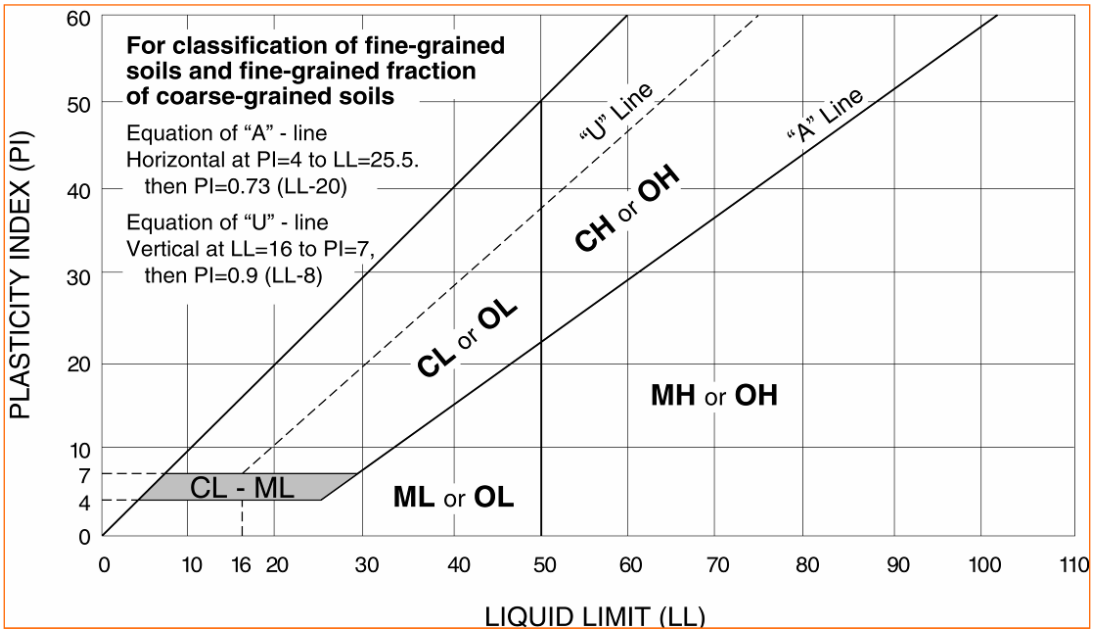
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



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5/27/2022 2:22:10 PM

in

Case No(s). 22-0151-EL-BGN

Summary: Application Application Exhibit N (Preliminary Geotechnical Report) electronically filed by Mr. Michael J. Settineri on behalf of Blossom Solar, LLC