GEOTECHNICAL ENGINEERING REPORT

STATE JOB NO. 39041(04) TEXAS COUNTY

TEXAS COUNTY MAINTENANCE FACILITY
1053 MILE 30 ROAD
GUYMON, OKLAHOMA

PROJECT NO. CEC-26-05

HINDERLITER
GEOTECHNICAL ENGINEERING

PREPARED FOR:

CEC CORPORATION
OKLAHOMA CITY

DATE:

FEBRUARY 25, 2026

HINDERLITER
GEOTECHNICAL ENGINEERING

February 25, 2026

CEC Corporation
4555 W Memorial Road
Oklahoma City, OK 73142

Attn: Mr. Brett Cowan, P.E.

Re: Geotechnical Engineering Report
State Job No. 39041(04)
Texas County Maintenance Facility
Guymon, Oklahoma
HGE Project No. CEC-26-05

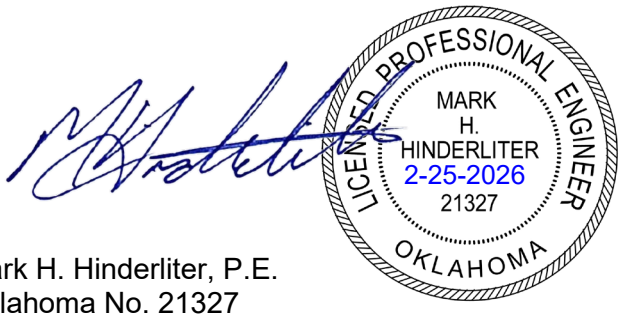
Dear Mr. Cowan:

The Geotechnical Engineering Report has been completed for the proposed Texas County Maintenance Yard in Guymon, Oklahoma. Our services and fee were detailed in Project Scope & Fee Reference: Bryan County Residency & Maintenance – revised, dated October 14, 2025.

The purpose of the attached report is to provide a summary of the field investigation and laboratory testing methods used and provide recommendations for earthwork and the design and construction of on-grade floor slabs, foundations and pavements. Soil test boring results and laboratory test results are provided in the appendices of this report.

Mr. Cowan, please do not hesitate to contact HGE at (405) 942-4090 should you have questions regarding this report.

Respectfully Submitted:
HINDERLITER GEOTECHNICAL ENGINEERING, LLC
Certificate of Authorization No. 5528, Expires 30-June-2027



Mark H. Hinderliter, P.E.
Oklahoma No. 21327

P:\HGE\Reports\2026 Geo\February\CEC-26-05 Report

Copies: brett.cowan@connectcec.com (pdf report & invoice)

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1.0 EXECUTIVE SUMMARY

The geotechnical engineering report is complete for the proposed ODOT Texas County Maintenance Yard in Guymon, Oklahoma. We understand the facility will include the following:

- New prototype combined Maintenance Building / Residency (6,800 SF),
- 12-Bay Equipment Shed with Wash Bay,
- 12-Bay Equipment Shed with 2 Shop Bays,
- Current prototype Salt Shed (108' x 60')
- Current prototype Mix Shed (60' x 40')
- 14-Bay Hopper Rack,
- Fuel Canopy with Drilled Pier Foundations,
- Entry Road and 2 Parking Lots,
- Evaporation Pond (assumed 75' x 75' x 5' deep)

We assume buildings and sheds will feature metal stud walls with metal truss roofs and on-grade concrete floor slabs. Column loads are assumed to be less than 50 kips and exterior wall loads are expected to be less than 2 kips / foot. Less than 3 feet of cut or fill is expected to be required for the development of design grades. New pavements may be Portland cement concrete, asphaltic cement concrete, or a combination of both.

Ten soil test borings were advanced to depths of 20 feet within the footprint areas of the proposed buildings and sheds; one boring was advanced to 20 feet for the fuel canopy; one boring was advanced to 10 feet for the evaporation pond and three borings were advanced to 5 feet for pavements. HGE personnel located the borings in the field based on the Texas County Yard image provided to us by the Client. The approximate location of each boring is displayed on the boring location diagram and is recorded on the boring logs, both attached within Appendix A of this report.

At the time of this investigation, the site was covered with relatively thin amounts of gravel and minimal amounts of vegetation. Subsurface soils included lean clays with varying amounts of sand, and some clayey sands. AASHTO classifications were A-6 with minor inclusion of A-4 soils. Group Index values ranged from 3 to 10. Clay soils tended to be brownish and stiff to very stiff. Borings P-1 through P-3 were terminated within these soils at depths of 5 feet while boring E-1 was terminated at 10 feet. Consistent bedrock was not encountered within borings B-1 through B-11 prior to the boring termination depths of 20 feet.

While sampling, each sample was evaluated for the presence of volatile organic compounds (VOC) using a hand-held meter with a range of zero to 100 ppm. The meter registers with an alarm at 7 ppm.

VOC readings of the sampled soils ranged from zero to 4 ppm with most readings above zero occurring within borings B-1 through B-5. One sample, boring B-3, sample S-2, was packed in glass, placed on ice, and submitted to an independent laboratory for evaluation of the volatile organic compounds, Benzene, Toluene, Ethylbenzene, Xylenes, and Diesel Range Organics. All results were below the reporting limits.

One bulk composite soil sample was obtained from the parking and drive area borings; P-1 thru P-3. The sample was classified and evaluated for soluble sulfate, chloride, laboratory resistivity and pH, moisture-density relationship and resilient modulus. Sulfates were less than 200 ppm, chlorides equal to 225 ppm, resistivity equal to 1,200 ohm-cm and pH of 8.3. The sample displayed a standard-effort maximum dry density of 116.7 pcf at an optimum moisture of 12.2 percent. The average resilient modulus was 8,010 psi and the 25th percentile value was 5,704 psi.

The borings were monitored for the presence of groundwater while drilling, immediately after boring completion and, in some cases, after remaining open overnight. Groundwater was not encountered within the borings at these times. A temporary monitor well was set within boring E-1, located at the Evaporation Pond. No groundwater was observed at 24 hours or 48 hours when the well was abandoned. The borings were backfilled or plugged per OWRB requirements after final groundwater measurements were obtained.

Shallow footing foundations can be used to support the building and sheds. On-grade floor slabs may be used with this foundation system. Drilled pier foundations can be used to support the proposed fuel canopy. Crushed aggregate base materials could be used for pavement support. Subgrade stabilization with Portland cement, fly ash or cement kiln dust could also be considered.

2.0 PROJECT DESCRIPTION

The proposed ODOT Texas County Maintenance Yard will be located at the existing Maintenance Facility at 1035 Mile 30 Road in Guymon, Oklahoma. The new construction project is referred to as State Job No. 39041(04). We understand the facility will include the following:

- New prototype combined Maintenance Building / Residency (6,800 SF),
- 12-Bay Equipment Shed with Wash Bay,
- 12-Bay Equipment Shed with 2 Shop Bays,
- Current prototype Salt Shed (108’ x 60’)
- Current prototype Mix Shed (60’ x 40’)
- 14-Bay Hopper Rack,
- Fuel Canopy with Drilled Pier Foundations,

- Entry Road and 2 Parking Lots,
- Evaporation Pond (assumed 75' x 75' x 5' deep)

We assume buildings and sheds will feature metal stud walls with metal truss roofs and on-grade concrete floor slabs. Column loads are assumed to be less than 50 kips and exterior wall loads are expected to be less than 2 kips / foot. Less than 3 feet of cut or fill is expected to be required for the development of design grades. New pavements may be Portland cement concrete, asphaltic cement concrete, or a combination of both.

3.0 SITE EXPLORATION

3.1 Boring Layout & Elevations

Ten soil test borings were advanced to depths of 20 feet within the footprint areas of the proposed buildings and sheds; one boring was advanced to 20 feet for the fuel canopy; one boring was advanced to 10 feet for the evaporation pond and three borings were advanced to 5 feet for pavements. HGE personnel located the borings in the field based on the Texas County Yard image provided to us by the Client. The approximate location of each boring is displayed on the boring location diagram and is recorded on the boring logs, both attached within Appendix A of this report.

Elevations at the boring locations were determined using a common surveyor's level and grade rod. The finish floor elevation of the existing office building, located as displayed on the attached boring location diagram, was used as an elevation benchmark. The benchmark elevation was estimated to be approximately 3124 feet from Google Earth. Based on this benchmark, estimated elevations at the boring locations ranged from 3117 feet to 3124 feet.

Boring locations and elevations should be considered only roughly accurate and not survey quality. Borings are often offset in the field by drill operators to locations accessible to the drill rig or to avoid utilities. Significant offsets are typically noted on the boring location diagram.

3.2 Subsurface Investigation

An truck-mounted, CME-45 rotary drill rig outfitted with 6-inch solid flight augers was used to advance the borings. Representative soil samples were obtained using the split-barrel sampling procedure, generally as detailed in ASTM D 1586. One bulk sample was obtained directly from the augers. ASTM D 1586 is commonly referred to as the Standard Penetration Test (SPT).

The split-barrel sampling process requires a two-piece sampling tube be used to obtain soil samples.

A two-inch outside diameter sampling tube is hammered into the bottom of the boring with a 140-pound weight falling 30 inches. The number of blows required to advance the sampling tube the last 12 inches, or less, of an 18-inch sampling interval is recorded as the SPT resistance value, N. The in-situ relative density of granular soils, consistency of cohesive soils, and the hardness of weathered bedrock can be estimated from the N value. The N values recorded for each test are displayed on the attached boring logs adjacent to their relative sampling depths.

An automatic drive hammer was used to advance the split-barrel sampler. A greater mechanical efficiency is achieved using an automatic drive hammer when compared to a conventional safety drive hammer operated with a cathead and rope. The effect of this higher efficiency on the N values has been considered in our interpretation and analysis of the subsurface information provided with this report.

The drill crew prepared field boring logs as part of the subsurface exploration operations. The split-barrel samples were packaged in plastic bags to reduce moisture loss, labeled for identification, and transported to the laboratory for further evaluation. An exception to this was sample S-2 from boring B-3 which was placed in a glass jar and packed on ice. Appendix A of this report contains the final boring logs that represent modifications based on the engineer's observations.

The boring was backfilled or plugged per OWRB requirements after the drilling operations were completed. Groundwater level measurements are included in Section 5.3 of this report.

4.0 LABORATORY EVALUATION

As part of the geotechnical investigation, soil samples obtained from the borings were evaluated for moisture content. Selected samples were evaluated for liquid and plastic limits, and grain size. These test results provide the information required to classify the soils and help to determine their engineering properties. One sample was submitted to an independent laboratory for evaluation of volatile organic compounds. One bulk composite sample was classified and evaluated for soluble sulfate and chloride content, laboratory resistivity, pH, moisture-density relationship and resilient modulus. The engineer reviewed all soil descriptions and made modifications based on the materials plasticity, texture, and color along with the laboratory test results.

The laboratory test results and group symbol from the Unified Soil Classification System are displayed on the boring logs included in Appendix A of this report and on the laboratory report sheets located in Appendix B. The following sections provide brief information about some of the tests performed.

4.1 In-Situ Moisture Content

The in-situ moisture content of soil samples was determined in the laboratory in general accordance with specification AASHTO T 265. The results of these tests have been provided in the appropriate column of the boring log. The moisture content is expressed as a percentage and is the ratio of the weight of water in a given amount of soil to the weight of solid particles.

4.2 Liquid & Plastic Limits

The Liquid Limit (LL) and Plastic Limit (PL) of selected soil samples were determined in the laboratory in general accordance with AASHTO T 80 and T 90, respectively. The Liquid Limit (LL) of a soil is the water content at which the soil passes from a liquid state to a plastic state. The Plastic Limit (PL) of a soil is the water content at which the soil passes from a plastic state to a semi-solid state. The Plasticity Index (PI) is the difference between the Liquid Limit and the Plastic Limit (PI = LL – PL). There is a correlation between these limits and experimental shrink / swell data. The results of these tests have been provided in the appropriate column of the boring log.

4.3 Sieve Analysis Test

The amount of material passing the No. 4, No. 10, No. 40 and No. 200 U.S. Standard Sieves was determined in the laboratory in general accordance with AASHTO T 27. Determination of the material grading, combined with the LL, PL and PI provide the information needed to classify the soil according to the Unified Soil Classification System (USCS). The resultant percentage of material passing each sieve has been provided in the appropriate column of the boring log.

4.4 Laboratory Resistivity & pH

Laboratory soil resistivity measurements were determined on the referenced bulk sample using test method AASHTO T 288. A voltage is impressed between the outer electrodes causing a voltage drop. The sample is mixed with increasing amounts of distilled water and pressed into a soil box until a minimum resistivity is achieved at a moisture content near saturation.

The pH of the referenced bulk sample was determined in general accordance with AASHTO T 289, Determining pH of Soil for Use in Corrosion Testing. The principal use of this test is to supplement soil-resistivity measurements and thereby identify conditions under which the corrosion of metals in the soil may be sharply accentuated.

4.5 Total Soluble Sulfates & Chlorides

The total soluble sulfate content of selected samples was determined in general accordance with test method OHD L-49. Soluble chlorides were determined in a similar method. The method measures soluble sulfate or chloride contents in soil by using turbidimetric methods. The results are used to determine whether improved cementitious materials are required for foundation construction or cathodic protection is required for buried ferrous materials.

4.6 Moisture-Density Relationship of Soils

The moisture-density relationship of bulk composite soil samples obtained from the borings was determined in general accordance with AASHTO T 99 (commonly referred to as the standard-effort Proctor test). Results of this test are included in Appendix B of this report. The maximum dry density and optimum moisture content of the sampled materials are determined from this test. These values are used to determine the target molding properties of resilient modulus specimens. The maximum dry density and optimum moisture are determined by constructing a curve from a plot of density vs. moisture.

4.7 Resilient Modulus

The resilient modulus of bulk soil samples obtained was determined in accordance with AASHTO T 307. The test is performed in a triaxial cell on re-molded, cylindrical specimens. Specimens are subjected to repeated axial loadings at various confining pressures and rates of strain. Specimens from the bulk sample were tested at optimum moisture and 95 percent of maximum dry density; and at optimum plus 2 percent.

4.8 BTEX / TPH

Relative amounts of benzene, toluene, ethylbenzene and xylenes (BTEX) were determined by EPA Method 8021. The method is an SW-846 gas chromatography (GC) technique used to detect and quantify aromatic and halogenated volatile organic compounds (VOCs), including BTEX, in solid waste, soil, and water matrices. It uses photoionization (PID) and electrolytic conductivity detectors (ELCD) for high sensitivity.

Relative amounts of diesel range hydrocarbons were determined by test method OK 8000/8100M. This method provides the gas chromatographic conditions for the detection of volatile petroleum fractions such as gasoline. Samples are analyzed using purge-and-trap sample concentration.

5.0 FINDINGS & RECOMMENDATIONS

Shallow footing foundations can be used to support the building and sheds. On-grade floor slabs may be used with this foundation system. Drilled pier foundations can be used to support the proposed fuel canopy. Crushed aggregate base materials could be used for pavement support. Subgrade stabilization with Portland cement, fly ash or cement kiln dust could also be considered.

5.1 Site Conditions

The proposed ODOT Texas County Maintenance Yard will be located at the existing facility located at 1053 Mile 30 Road in Guymon, Oklahoma. At the time of our investigation, the site was covered with minimal amounts of gravel and native grasses. The site appeared relatively flat with buildings, sheds, fuel tanks, stored equipment and material stockpiles across the site. Adjacent properties appeared to be commercial, industrial, residential or agricultural.

5.2 Subsurface Conditions

Subsurface soils included lean clays with varying amounts of sand, and some clayey sands. AASHTO classifications were A-6 with minor inclusion of A-4 soils. Group Index values ranged from 3 to 10. Clay soils tended to be brownish and stiff to very stiff. Borings P-1 through P-3 were terminated within these soils at depths of 5 feet while boring E-1 was terminated at 10 feet. Consistent bedrock was not encountered within borings B-1 through B-11 prior to the boring termination depths of 20 feet.

In accordance with publication ASCE7-10 Chapter 20, a Site Class D should be used for foundation design at this site. This site class is based on Standard Penetration Tests conducted within 20 feet of the ground surface, and the overburden soil classification.

While sampling, each sample was evaluated for the presence of volatile organic compounds (VOC) using a hand-held meter with a range of zero to 100 ppm. The meter registers with an alarm at 7 ppm. VOC readings of the sampled soils ranged from zero to 4 ppm with most readings above zero occurring within borings B-1 through B-5. One sample, boring B-3, sample S-2, was packed in glass, placed on ice, and submitted to an independent laboratory for evaluation of the volatile organic compounds, Benzene, Toluene, Ethylbenzene, Xylenes, and Diesel Range Organics. All results were below the reporting limits.

One bulk composite soil sample was obtained from the parking and drive area borings; P-1 thru P-3. The sample was classified and evaluated for soluble sulfate, chloride, laboratory resistivity and pH,

moisture-density relationship and resilient modulus. The sample displayed a standard-effort maximum dry density of 116.7 pcf at an optimum moisture of 12.2 percent. The average resilient modulus was 8,010 psi and the 25th percentile value was 5,704 psi. Sulfates were less than 200 ppm, chlorides equal to 225 ppm, resistivity equal to 1,200 ohm-cm and pH of 8.3. These results indicate soils corrosive to buried cementitious materials due to low resistivity and elevated pH. The soils have negligible corrosivity to buried ferrous materials due to soluble chlorides.

Results of each boring are included on the boring logs in Appendix A of this report. Every attempt is made to accurately reflect the depths of material change; however, stratification boundaries should be considered approximate. Specific recommendations concerning on-grade floor slabs, foundations and pavements are presented in the following sections of this report.

5.3 Groundwater Conditions

The borings were monitored for the presence of groundwater while drilling, immediately after boring completion and, in some cases, after remaining open overnight. Groundwater was not encountered within the borings at these times. A temporary monitor well was set within boring E-1, located at the Evaporation Pond. No groundwater was observed at 24 hours or 48 hours when the well was abandoned. The borings were backfilled or plugged per OWRB requirements after final groundwater measurements were obtained.

To obtain more accurate groundwater level information, long-term observations in a well or piezometer that is sealed from the influence of surface water would be needed. Groundwater level fluctuations and / or perched water conditions may occur due to seasonal variations in the amount of rainfall and other factors such as drainage characteristics. The possibility of groundwater level fluctuations should be considered during the preparation of construction plans.

5.4 General Site Development

Site preparation for the proposed structures and pavements should include removing any gravel, vegetation and topsoil to a depth of at least 4 inches. Any rocks greater than 3 inches and any matted vegetation should also be removed. Other unsuitable materials encountered during construction operations should be removed and replaced with suitable soil.

After removing the recommended deleterious materials and making any required cuts, but before placing concrete, pavement or fill, we recommend the site be proof-rolled to identify any soft or loose areas. Proof-rolling operations should be observed by qualified geotechnical personnel to identify soft or loose areas to be removed or stabilized, and to verify that all unsuitable materials have been

removed. Proof-rolling should be performed using a loaded, tandem-axle dump truck having a minimum gross weight of 25 tons, or other equipment having a similar subgrade loading. Proof-rolling should be performed slowly and in overlapping passes, repeating the process in a perpendicular direction. Any areas of rutting or pumping should be removed and replaced with moisture-conditioned, low volume change soil (defined in section 5.5 of this report).

The soils encountered on site are susceptible to becoming soft or loose with the addition of moisture. During periods of rain, the site may become unworkable and difficult to travel across. If wet subgrade conditions are encountered during construction, we recommend reducing the soil's moisture content by aeration. The use of calcium-based admixtures (lime, fly ash, cement kiln dust, etc.) to dry the soil could also be considered.

5.5 On-Grade Slab Subgrade

The existing near surface soils at the boring locations consist of low plasticity clay soils for which significant volume changes due to variations in subgrade moisture content are not expected to occur. Therefore, the existing subgrade soils are considered to be suitable for support of floor slabs. We recommend constructing a moisture-conditioned, compacted soil support zone for slab support. The following recommendations are provided to develop this soil support zone beneath on-grade-effort slabs.

After performing any required cuts, but before placing any fill, the exposed subgrade should be scarified to a minimum depth of 8 inches and compacted to at least 95 percent of its maximum dry density as determined by test method ASTM D 698 (commonly referred to as the standard-effort Proctor) at a moisture content within 2 percent of optimum. Any soft or loose areas observed, or over-saturated, rutting or pumping soils observed during the compaction operation should be removed and replaced with moisture-controlled, low volume change soils.

All fill required to develop design grades should consist of suitable low volume change (LVC) fill materials. The LVC pad should extend laterally at least one foot outside the slab footprint for every foot of fill placed. Suitable LVC soils are considered to be lean, cohesive materials with a liquid limit less than 40 and a plasticity index between 5 and 18, or cohesion-less materials with at least 25 percent passing the standard No. 200 sieve. All fill should be placed in lifts not exceeding 9 inches in loose thickness and compacted to at least 95 percent of the material's maximum dry density. Fill soils should be placed at a moisture content within two percent of optimum (test method ASTM D 698).

For direct slab support and to provide a capillary moisture break, at least 4 inches of crushed aggregate, such as ODOT Type A Aggregate Base, should be placed and compacted. Aggregate

base should be compacted to at least 95 percent of the material's standard-effort maximum dry density (ASTM D 698), generally at a moisture content within 2 percent of optimum. Sand is not recommended for direct slab support due to the tendency to loosen when unconfined.

During compaction operations, the exposed subgrade and each lift of compacted fill should be tested for moisture and density and reworked as necessary until the lift is approved by the geotechnical engineer's representative prior to the placement of additional material. We recommend the scarified surface and each lift of fill be tested for density and moisture content at a rate of one test per 2,500 square feet of compacted area with a minimum of two tests per compacted area. In addition, we recommend one test per lift for every 100 linear feet of compacted utility trench backfill.

The ground surface should be sloped away from on-grade slabs on all sides to prevent water collection. Water should not be allowed to pond near the slab during or after construction. The moisture content of the soil pad should be maintained near optimum until the slab is constructed. We recommend the moisture content of the on-grade slab subgrade be evaluated just before concrete for the slab is placed.

If floor slabs will be covered with materials that are impervious to moisture migration, we recommend taking precautions to minimize the potential for floor covering problems relative to moisture emission. These precautions should include the following: Place a heavy-duty vapor retarder immediately below the floor slabs and seal the retarder at all penetration points. All fill materials should be placed *below* the vapor retarder. Concrete for the floor slabs should have a low slump and should be carefully cured due to the retention of mix water at the base of the slab over the vapor retarder. To maximize effectiveness, floor slab concrete should be water-cured for at least 7 days, which will also reduce the potential for slab edge curling. Lastly, after the building is enclosed and the HVAC is operating, slab moisture emission tests should be performed to confirm that vapor emission levels comply with the floor covering manufacturer's specifications.

SUMMARY OF EARTHWORK FOR ON-GRADE SLABS	
Clear & Grub	Remove vegetation & topsoil to at least 4 inches
Proofroll	All exposed soils, including at base of cuts
Scarify & Recompact	Top 8", compact to 95% MDD at moisture within 2 percent of optimum
Low Volume Change Fill	Max. lifts 9" loose, compact to 95% MDD within 2% of optimum moisture
Aggregate Base	4" compacted to 95% MDD within 2% of optimum moisture

5.6 Shallow Footing Foundations

Shallow footing foundations can be used to support the proposed buildings and sheds. Due to medium stiff soils encountered within the top 2-1/2 feet of the borings, and to provide protection against frost heave, footings should bear at a depth of at least 2-1/2 feet below adjacent grade. For the design of footings bearing within undisturbed, native soils at the recommended depth, a maximum net allowable bearing pressure of 2,500 pounds per square foot can be used for foundation design. Footings bearing within tested and approved, compacted fill can also be designed using a maximum net allowable bearing pressure of 2,500 psf. These are the pressures at the base of the footing in excess of the adjacent overburden pressure. A representative of the geotechnical engineer should be retained to evaluate that footings bear on soils suitable for the design pressure prior the placement of concrete. Continuous formed footings should have a minimum width of at least 16 inches, and isolated column footings should have a minimum width of at least 30 inches. Earth formed trench footings also could be used and should have a minimum width of at least 12 inches.

Care should be taken to prevent wetting or drying of the bearing materials during construction. Any extremely wet or dry material, or any loose or disturbed material in the bottom of the footing excavations, should be removed prior to placing concrete.

Long-term movement is expected to be less than 1-inch for footings bearing within the materials described above and proportioned for the recommended maximum net allowable bearing pressure. Differential footing movement is not expected to exceed approximately 1/2 of this value.

5.7 Fuel Canopy Foundations

Boring B-3 was advanced at the location of the proposed fuel canopy. Parameters are given on the following table including recommended design values for effective unit weight, net allowable bearing pressure, allowable passive pressure, allowable side resistance and material strength parameters. Drilled piers should extend at least 3 feet into the desired bearing strata to use the indicated values. No values are given for soils within 3 feet of the ground surface.

Boring No. / Depth (ft)	Effective Material Unit Wt. (pcf)	Estimated Cohesion (psf)	Net Allowable Bearing Pressure (psf)	Allowable Side Resistance (psf)	Allowable Passive Pressure (psf)	Lateral Subgrade Modulus (K) (pci)	Material Strain Parameter ϵ_{50} (in. / in.)
B-3 / 0 – 3	110	N/A	N/A	N/A	N/A	N/A	N/A
B-3 / 3 – 10	110	1,685	2,500	335	2,025	135	0.007
B-3 / 10 – 15	110	3,000	7,500	600	3,675	245	0.005
B-3 / 15 – 20	115	4,500	10,000	900	5,450	365	0.004

N/A = Not Applicable. All values calculated for middle of the depth interval.

Excavation of the overburden soils can be accomplished using an earth auger. However, a rock bit may be required to penetrate hard clay materials. Temporary casing is not expected to be required to prevent caving of the soils. Dewatering is also not expected to be required, but should be anticipated. The need for casing and dewatering will depend on the actual groundwater and soil conditions at the time of construction and should be determined at that time.

Any water deeper than 2 inches and loose or sloughed material should be removed from the bottom of the drilled piers prior to placing concrete. To facilitate pier construction, concrete should be on-site and ready for placement as pier excavations are completed. Concrete should be directed down the center of the pier excavation through use of a tremie or concrete pump. In no case should concrete be allowed to strike reinforcing steel, tie wires or the excavation sides while it is being placed. Pier excavations should not be allowed to remain open for more than 4 hours without approval of the geotechnical engineer.

Straight shaft drilled piers bearing within suitable soil or weathered bedrock and constructed as recommended are expected to experience long-term settlements less than one inch. The net allowable bearing pressure recommended for design in this table has a safety factor of 3 while the side resistance and passive pressure have safety factors of 2. Straight shaft drilled piers should be provided with sufficient reinforcing steel to resist tensile stresses.

5.8 Pavement Thickness & Subgrade Development

Light-duty parking lot pavements are expected to support passenger automobiles only. Drive and parking areas accessible to trucks should be designed as heavy-duty pavements. Based on laboratory testing of the subgrade soils, a resilient modulus value of 5,700 psi should be used for the design of pavements at this site. This correlates roughly to a subgrade modulus, k, value of 80 pci. Heavy-Duty pavement sections were evaluated using WinPAS 12 software; see Appendix C. Total Rigid ESAL's are estimated at 0.98M and Flex ESAL's are estimated at 0.68M. The following table provides minimum pavement thicknesses for rigid pavements.

It is recommended that reinforced concrete pads be constructed in front of and beneath the refuse storage and pick-up area. The dumpster trucks should be parked on rigid Portland cement concrete pavement when the trash receptacles are lifted. The concrete pad should be at least 7 inches thick and fully reinforced.

	Light Duty Pavement	Heavy Duty Pavement
Rigid Pavement	5” Portland Cement Concrete (3500 psi min.) 6” ODOT Type “A” Aggregate Base or 8” Stabilized Subgrade	7” Portland Cement Concrete (3500 psi min. doweled across joints) 6” ODOT Type “A” Aggregate Base or 8” Stabilized Subgrade
Flexible Pavement	2” Type S4 ACC (PG 64-22 OK) 2” Type S4 ACC (PG 64-22 OK) 6” ODOT Type “A” Aggregate Base or 8” Stabilized Subgrade	2” Type S4 ACC (PG 70-28 OK) 2” Type S4 ACC (PG 64-22 OK) 3” Type S3 ACC (PG 64-22 OK) 6” ODOT Type “A” Aggregate Base or 8” Stabilized Subgrade

Before fill is placed, the subgrade should be proof-rolled as recommended in Section 5.4 of this report. Once design grades are developed, 6 inches of ODOT Type “A” Aggregate Base should be placed for direct pavement support. Aggregate base materials should be compacted to at least 98 percent of the materials maximum dry density per test method AASHTO T-180 at a workable moisture content. A separator fabric or geogrid could be placed between the aggregate base and the subgrade soils to provide long-term separation of the materials.

As an alternative to aggregate base, the top 8 inches of the subgrade could be stabilized with an estimated 4 percent hydrated lime, 12 percent cement kiln dust (CKD) (5 percent pre-calciner CKD), or 14 percent class “C” fly ash. The actual percentage of additive should be determined at the time of construction for the exposed subgrade soils. Portland cement could also be considered but will require a mix design. After final mixing of the additive and adjusting the moisture content to within two percent of optimum, the material should be compacted to at least 95 percent of the mixtures target dry density as determined by test method AASHTO T-99.

All fill required to develop final grade lines in the proposed parking and drive areas should consist of low volume change soils that are free of organic matter and debris. Fill should be placed in lifts not exceeding 6 inches and should be compacted to at least 95 percent of the maximum dry density at a moisture content within 2 percent of optimum. Any soft or loose areas observed or over-saturated, rutting or pumping soils observed during compaction operations should be removed and replaced.

During compaction operations, each lift of compacted fill should be tested for moisture and density and reworked as necessary until that surface is approved by the geotechnical engineer’s

representative prior to the placement of additional lifts. We recommend the aggregate base or stabilized subgrade, and each lift of fill be tested for density and moisture content at a rate of one test per 10,000 square feet of compacted area with a minimum of two tests per compacted area. In addition, we recommend one test per lift for every 100 linear feet of compacted utility trench backfill. The moisture content of the aggregate base or stabilized soil should be maintained near optimum during construction. We recommend the moisture content be evaluated immediately before pavement is placed.

Minimizing subgrade saturation is an important factor in maintaining subgrade strength. Water allowed to pond on or adjacent to pavements could saturate the subgrade and cause premature pavement deterioration. The pavement and subgrade should be sloped approximately ¼ inch per foot to provide rapid surface drainage, and positive surface drainage should be maintained away from the edge of the paved areas. Design alternatives that would reduce the risk of subgrade saturation and improve long-term pavement performance include placing a separator fabric between the aggregate base and subgrade soils, crowning the pavement subgrade to drain toward the edges, rather than to the center of the pavement areas and installing surface drains next to any areas where surface water could pond.

Maintenance of the pavement will be required to obtain a satisfactory design life. Maintenance should include crack sealing, surface sealing and patching of any deteriorated areas. In addition, thicker pavement sections could be used to reduce the required maintenance and extend the service life of the pavement.

SUMMARY OF EARTHWORK FOR PAVEMENTS	
Clear & Grub	Remove vegetation & topsoil to at least 4”
Remove	Unstable soils
Proofroll	All areas to be paved
Suitable Fill	Max. lifts 9” loose, compact to 95% MDD within 2% of optimum moisture
6” Aggregate Base or 8” Stabilized Subgrade	Compact Aggregate to 98% T-180 MDD at a workable moisture. Compact stabilized subgrade to 95% T-99 MDD within 2% of optimum.

5.9 Evaporation Pond

Boring E-1 was advanced at the location of the proposed Evaporation Pond. The pond is expected to be excavated to a maximum depth of 5 feet. The boring encountered dark brown to light brown, stiff, lean clay with sand for the entire boring depth of 10 feet. A temporary groundwater monitor well was set in the boring after drilling was completed. No groundwater was encountered within the boring within approximately 48 hours of drilling completion. The monitor well was abandoned after final groundwater level observations were obtained.

6.0 CONCLUDING REMARKS

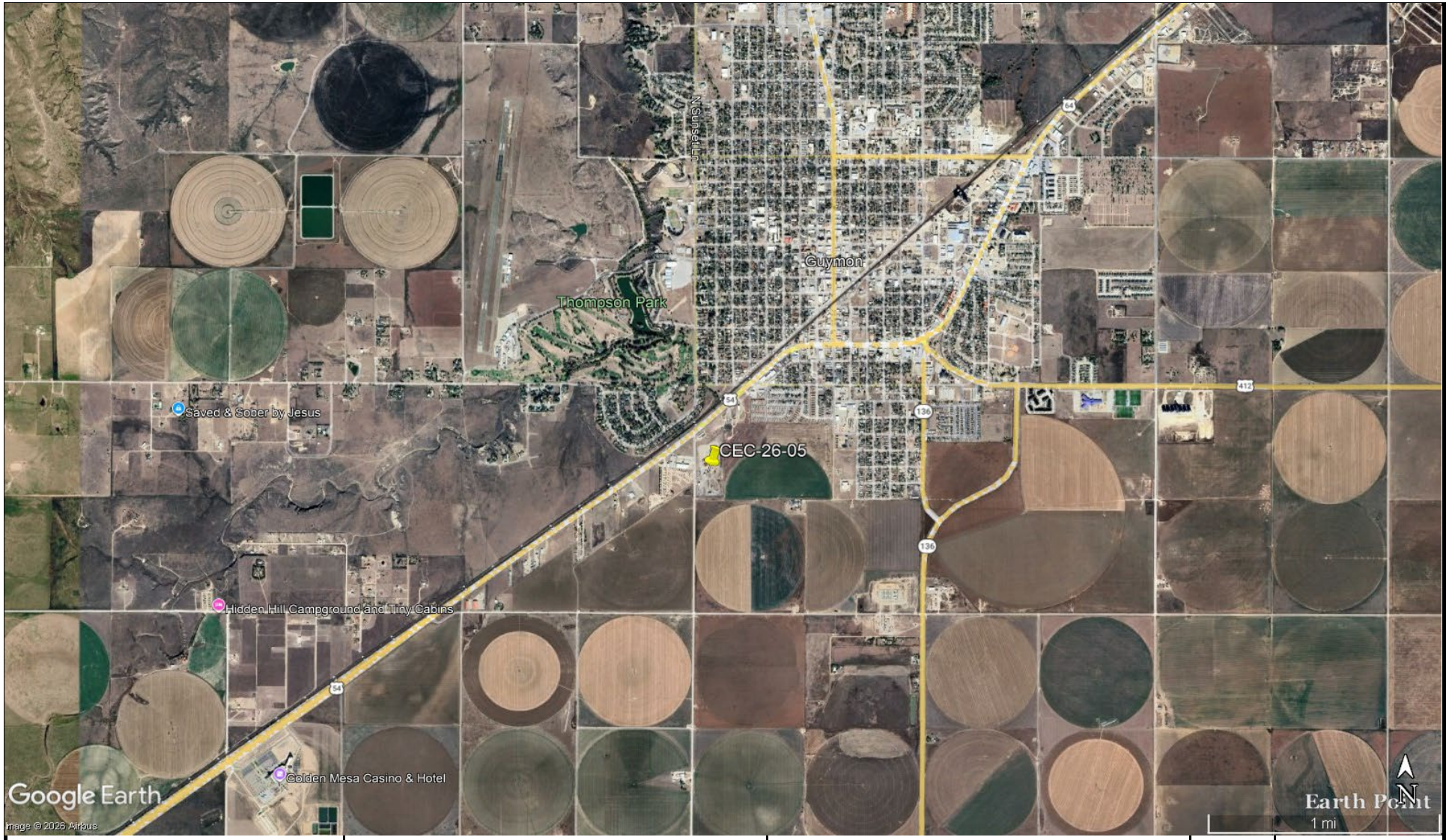
Recommendations provided in this report are based on information from discrete borings (generally 4 to 8 inches in diameter) and, in some cases, from an engineer's general surficial observations. All site conditions cannot be detailed based on a limited number of borings and increasing the number of borings so that all site conditions can be defined is generally not practical. Variations in site conditions between boring locations should be expected and, on occasion, revised recommendations will be required. Hinderliter Geotechnical Engineering, LLC (HGE) should be retained to review final plans and specifications so that comments can be provided regarding the implementation of recommendations provided in this report. HGE should also be retained to provide monitoring of site construction.

This report provides recommendations concerning site construction and, while it may provide limited analysis of soil corrosiveness and / or contaminant content, is not an Environmental Site Assessment (ESA). If the Owner is concerned about environmental and / or biological assessment, a separate study specifically focused on environmental issues should be undertaken.

This report has been prepared specifically for the referenced project and for the exclusive use of our Client. Third-party reliance may be granted upon specific written request of the Client. This report has been prepared using locally specific and generally accepted geotechnical engineering practices based on structural information provided by the Client and information gained from the site. No warranties are implied or granted regarding site recommendations not specifically discussed in this report.

APPENDIX A

SITE VICINITY MAP
BORING LOCATION DIAGRAM
SUBSURFACE FENCE DIAGRAM
BORING LOGS



SITE VICINITY MAP

HINDERLITER GEOTECHNICAL ENGINEERING

STATE JOB NO. 39041(04) TEXAS
COUNTY MAINTENANCE
1053 MILE 30 ROAD
GUYMON, OKLAHOMA

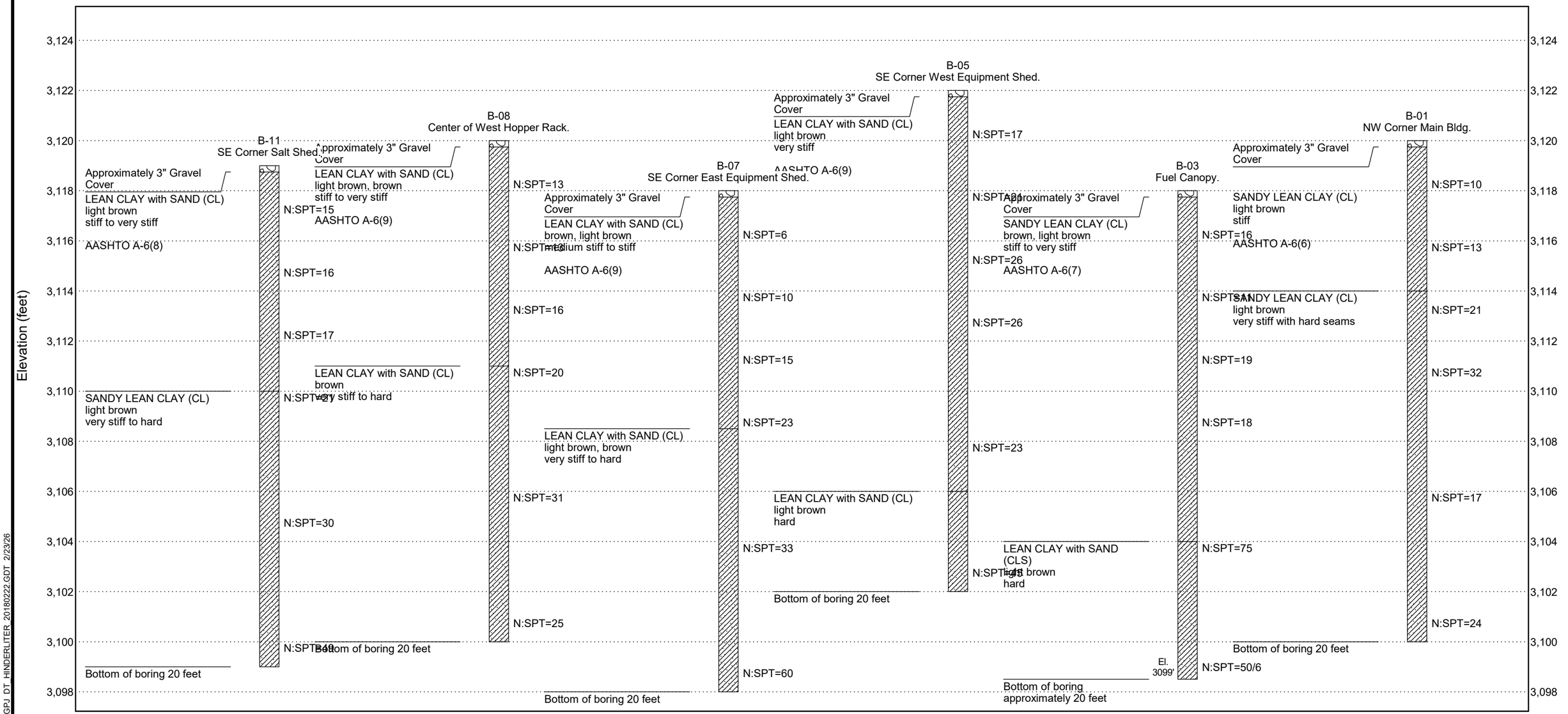
ENGINEER	SCALE
MHH	NOT TO SCALE
DRAWN BY	PROJECT NO.
MHH	CEC-26-05
REVISIONS	DATE
	FEBRUARY 2026

BORING LOCATION DIAGRAM

HINDERLITER GEOTECHNICAL ENGINEERING

STATE JOB NO. 39041(04) TEXAS
COUNTY MAINTENANCE
1053 MILE 30 ROAD
GUYMON, OKLAHOMA

ENGINEER	SCALE
MHH	NOT TO SCALE
DRAWN BY	PROJECT NO.
MHH	CEC-26-05
REVISIONS	DATE
	FEBRUARY 2026



Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

LEGEND:
N:SPT=Standard Penetration Test
TCP=Texas Cone Penetrometer
R=Recovery
RQD=Rock Quality Designation
UC=Unconfined Compressive Strength

SUBSURFACE FENCE DIAGRAM

Project: State Job No. 39041(04) Texas County Maintenance

Location: 1053 Mile 30 Rd - Guymon, Oklahoma

Number: CEC-26-05

LOG OF BORING B-01

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/6/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3120

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 3" Gravel Cover
			N = 10 VOC=0 ppm	9.6									SANDY LEAN CLAY (CL) light brown stiff
			N = 13 VOC=0 ppm	13.3	129	15	114		100	100	93	61.4	AASHTO A-6(6)
	5												
			N = 21 VOC=0 ppm	13.2									SANDY LEAN CLAY (CL) light brown very stiff with hard seams
			N = 32 VOC=0 ppm	11.8									
	10												
			N = 17 VOC=2 ppm	8.7									
	15												
			N = 24 VOC=0 ppm	9.1									
	20												Bottom of boring 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
NW Corner Main Bldg.

LOG OF BORING B-02

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/6/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3122

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 2" Gravel Cover
			N = 27 VOC=0 ppm	14.3									SANDY LEAN CLAY (CL) light brown very stiff with hard seams AASHTO A-6(5)
	5		N = 51 VOC=2 ppm	6.9									
			N = 34 VOC=3 ppm	8.5	27	13	14		100	100	93	58.3	
	10		N = 20 VOC=4 ppm	10.0									
													CLAYEY, SILTY SAND (SC-SM) light brown dense to very dense
	15		N = 45 VOC=2 ppm	9.2									
			N = 50/5 VOC=2 ppm	7.6									
													Bottom of boring approximately 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
SE Corner Main Bldg.

LOG OF BORING B-03

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/6/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3118

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 3" Gravel Cover
			N = 16 VOC=2 ppm	12.2									SANDY LEAN CLAY (CL) brown, light brown stiff to very stiff AASHTO A-6(7)
			N = 11 VOC=3 ppm										
	5												
			N = 19 VOC=2 ppm	10.0									
			N = 18 VOC=1 ppm	13.1	28	14	14		100	100	94	68.5	
	10												
			N = 75 VOC=1 ppm	11.8									LEAN CLAY with SAND (CLS) light brown hard
	15												
			N = 50/6 VOC=1 ppm	12.3									
													Bottom of boring approximately 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
Fuel Canopy.

LOG OF BORING B-04

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/6/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3124

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 2" Gravel Cover
			N = 19 VOC=1 ppm	15.4	27	17	10		100	100	97	81.5	LEAN CLAY with SAND (CL) light brown, brown very stiff AASHTO A-4(6)
	5		N = 24 VOC=0 ppm	15.6									
			N = 33 VOC=0 ppm	14.0									SANDY LEAN CLAY (CL) light brown very stiff to hard
	10		N = 26 VOC=2 ppm	6.0									
	15		N = 17/6 50/6 VOC=2 ppm	10.3									
	20		N = 31 VOC=0 ppm	12.6									
													Bottom of boring 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
NW Corner West Equipment Shed.

LOG OF BORING B-05

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/6/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3122

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 3" Gravel Cover
			N = 17 VOC=2 ppm	12.3									LEAN CLAY with SAND (CL) light brown very stiff AASHTO A-6(9)
	5		N = 21 VOC=2 ppm	10.5									
			N = 26 VOC=2 ppm	13.2	31	18	13		100	100	100	79.8	
	10		N = 26 VOC=2 ppm	10.1									
	15		N = 23 VOC=2 ppm	10.4									
													LEAN CLAY with SAND (CL) light brown hard
	20		N = 45 VOC=2 ppm	10.3									
													Bottom of boring 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
SE Corner West Equipment Shed.

LOG OF BORING B-06

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/6/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3117

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 2" Gravel Cover
			N = 8 VOC+0 ppm	11.1	34	19	15		100	100	92	72.5	LEAN CLAY with SAND (CL) light brown, brown stiff to very stiff AASHTO A-6(9)
	5		N = 10 VOC+0 ppm	10.0									
			N = 23 VOC+0 ppm	11.6									
	10		N = 21 VOC+0 ppm	13.2									
	15		N = 14 VOC+0 ppm	9.7									
	20		N = 35/6 50/4 VOC+0 ppm	8.4									CLAYEY SAND (SC) light brown very dense
													Bottom of boring 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
NW Corner East Equipment Shed.

LOG OF BORING B-07

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/7/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3118

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 3" Gravel Cover
			N = 6 VOC=0 ppm	15.3									LEAN CLAY with SAND (CL) brown, light brown medium stiff to stiff AASHTO A-6(9)
	5		N = 10 VOC=0 ppm	12.4									
			N = 15 VOC=0 ppm	15.1	30	16	14		100	100	96	79.8	
			N = 23 VOC=0 ppm	12.4									
	10												LEAN CLAY with SAND (CL) light brown, brown very stiff to hard
			N = 33 VOC=0 ppm	11.5									
	15												
			N = 60 VOC=0 ppm	8.5									
	20												Bottom of boring 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
SE Corner East Equipment Shed.

LOG OF BORING B-08

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/6/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3120

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 3" Gravel Cover
			N = 13 VOC=0 ppm	18.0	32	18	14		100	100	96	73.7	LEAN CLAY with SAND (CL) light brown, brown stiff to very stiff AASHTO A-6(9)
	5		N = 13 VOC=0 ppm	14.4									
			N = 16 VOC=0 ppm	16.5									
	10		N = 20 VOC=0 ppm	15.0									LEAN CLAY with SAND (CL) brown very stiff to hard
	15		N = 31 VOC=2 ppm	16.3									
	20		N = 25 VOC=0 ppm	10.7									
													Bottom of boring 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
Center of West Hopper Rack.

LOG OF BORING B-09

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/6/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3119

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 2" Asphalt Cover
			N = 11 VOC=0 ppm	18.6									LEAN CLAY with SAND (CL) dark brown, light brown stiff to very stiff AASHTO A-6(10)
			N = 10 VOC=0 ppm	15.5									
	5												
			N = 18 VOC=0 ppm	14.3	31	15	16		100	100	96	76.9	
			N = 23 VOC=0 ppm	9.9									
	10												
			N = 20 VOC=0 ppm	15.6									
	15												LEAN CLAY with SAND (CL) light brown very stiff to hard
			N = 35 VOC=0 ppm	7.8									
	20												Bottom of boring 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
Center of East Hopper Rack.

LOG OF BORING B-10

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/5/26 - 2/6/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3119

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 4 " Gravel Cover
			N = 8 VOC=0 ppm	17.9									SANDY LEAN CLAY (CL) dark brown, light brown stiff to very stiff AASHTO A-6(7)
			N = 17 VOC=0 ppm	16.9	31	17	14		100	100	94	65.1	
	5		N = 16 VOC=0 ppm	12.6									
			N = 19 VOC=0 ppm	10.3									
	10												
			N = 22 VOC=0 ppm	14.7									
	15												
			N = 27 VOC=0 ppm	17.4									
	20												Bottom of boring 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
NW Corner Salt Shed.

LOG OF BORING B-11

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/5/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3119

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 3" Gravel Cover
			N = 15 VOC=1 ppm	16.7	29	16	13		100	100	96	75.4	LEAN CLAY with SAND (CL) light brown stiff to very stiff AASHTO A-6(8)
			N = 16 VOC=0 ppm	13.9									
	5												
			N = 17 VOC=0 ppm	14.2									
			N = 21 VOC=0 ppm	12.5									SANDY LEAN CLAY (CL) light brown very stiff to hard
	10												
			N = 30 VOC=0 ppm	14.3									
	15												
			N = 49 VOC=0 ppm	23.0									
	20												Bottom of boring 20 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
SE Corner Salt Shed.

LOG OF BORING E-1

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/5/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination. Monitor well set for overnight groundwater measurements. Boring was dry after remaining open overnight and approximately 48 hours.

SURFACE ELEVATION: 3119

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 2" Gravel Cover
			N = 9 VOC=3 ppm	18.9									LEAN CLAY with SAND (CL) dark brown, light brown stiff AASHTO A-6(5)
			N = 14	20.9									
	5												
			N = 9	16.6	25	14	11		100	100	91	71.0	
			N = 8	14.9									
	10												Bottom of boring 10 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
Evaporation Pond.

LOG OF BORING P-1

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/7/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3117

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 2" Gravel Cover
			N = 20 VOC=0 ppm	10.9	28	12	16		100	100	91	61.1	SANDY LEAN CLAY (CL) light brown very stiff AASHTO A-6(6)
			N = 16 VOC=0 ppm	8.8									
	5												Bottom of boring 5 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
Main Bldg Parking Lot.

LOG OF BORING P-2

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/7/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3118

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 3" Gravel Cover
			N = 11 VOC=0 ppm	9.8	24	12	12		100	100	88	56.6	SANDY LEAN CLAY (CL) light brown, dark brown stiff AASHTO A-6(3)
			N = 9 VOC=0 ppm	16.5									
	5												Bottom of boring 5 feet

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
Main Bldg Entrance Drive.

LOG OF BORING P-3

Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

CLIENT: CEC Corporation
PROJECT: State Job No. 39041(04) Texas County Maintenanc
LOCATION: 1053 Mile 30 Rd - Guymon, Oklahoma
NUMBER: CEC-26-05
DATE(S) DRILLED: 2/7/26

DRILLING METHOD(S):
CME-45 truck-mounted drill. 6" solid flight augers. SPT penetration testing & sampling.

GROUNDWATER INFORMATION:
No groundwater encountered prior to boring termination.

SURFACE ELEVATION: 3124

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT.	MINUS NO. 4 SIEVE (%)	MINUS NO. 10 SIEVE (%)	MINUS NO. 40 SIEVE (%)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Approximately 3" Gravel Cover
			N = 14 VOC=0 ppm	14.9	31	17	14		100	100	96	70.1	SANDY LEAN CLAY (CL) light brown stiff AASHTO A-6(8)
			N = 11	11.0									
	5												bOTTOM OF BORING 5 FEET

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Approximate Boring Location:
South entrance Drive.

APPENDIX B

GEOTECHNICAL LAB SUMMARY
PARTICLE SIZE DISTRIBUTION REPORTS
MOISTURE-DENSITY RELATIONSHIP REPORT
RM TEST SUMMARY DATA
ETI LABORATORY ANALYTICAL REPORT

Geotechnical Lab Summary

Texas County Maintenance Facility

Project No.: 260085

Client: ODOT

Sample	Classification				Atterberg Limits				% Passing					Sulfate PPM	Remarks
	Color	Description	AASHTO	USCS	LL	PL	PI	NM (%)	#4	#10	#40	#100	#200		
B-1															
B-1 S-1	lt brown	lean clay						9.6							
B-1 S-2	lt brown	sandy lean clay	A-6(6)	CL	29	15	14	13.3	100.0	100.0	93.1	72.9	61.4		
B-1 S-3	lt brown	lean clay						13.2							
B-1 S-4	lt brown	lean clay						11.8							
B-1 S-5	lt brown	lean clay						8.7							
B-1 S-6	lt tan	lean clay						9.1							
B-2															
B-2 S-1	lt brown	lean clay						14.3							
B-2 S-2	lt tan	lean clay						6.9							
B-2 S-3	lt brown	sandy lean clay	A-6(5)	CL	27	13	14	8.5	100.0	100.0	93.2	71.7	58.3		
B-2 S-4	lt brown	silty lean clay						10.0							
B-2 S-5	lt tan	lean clay						9.2							
B-2 S-6	lt tan	lean clay						7.6							
B-3															
B-3 S-1	brown	lean clay						12.2							
B-3 S-2	lt brown	lean clay													
B-3 S-3	lt brown	lean clay						10.0							
B-3 S-4	lt brown	sandy lean clay	A-6(7)	CL	28	14	14	13.1	100.0	100.0	94.4	79.5	68.5		
B-3 S-5	lt tan	lean clay						11.8							
B-3 S-6	lt tan	lean clay						12.3							
B-4															
B-4 S-1	lt brown	lean clay with sand	A-4(6)	CL	27	17	10	15.4	100.0	100.0	97.2	88.5	81.5		
B-4 S-2	brown	lean clay						15.6							
B-4 S-3	lt brown	lean clay						14.0							
B-4 S-4	lt brown	lean clay						6.0							
B-4 S-5	lt tan	lean clay						10.3							
B-4 S-6	lt tan	lean clay						12.6							
B-5															
B-5 S-1	lt brown	lean clay						12.3							
B-5 S-2	lt brown	lean clay						10.5							
B-5 S-3	lt brown	lean clay with sand	A-6(9)	CL	31	18	13	13.2	100.0	100.0	96.6	89.9	79.8		
B-5 S-4	lt brown	silty lean clay						10.1							
B-5 S-5	lt brown	lean clay						10.4							
B-5 S-6	lt tan	lean clay						10.3							
B-6															
B-6 S-1	lt brown	lean clay with sand	A-6(9)	CL	34	19	15	11.1	100.0	100.0	91.8	80.6	72.5		
B-6 S-2	lt brown	lean clay						10.0							
B-6 S-3	lt brown	lean clay						11.6							
B-6 S-4	brown	lean clay						13.2							
B-6 S-5	brown	lean clay						9.7							
B-6 S-6	lt tan	lean clay						8.4							
B-7															
B-7 S-1	brown	lean clay						15.3							
B-7 S-2	brown	lean clay						12.4							
B-7 S-3	lt tan	lean clay with sand	A-6(9)	CL	30	16	14	15.1	100.0	100.0	96.4	88.3	79.8		

Geotechnical Lab Summary

Texas County Maintenance Facility

Project No.: 260085

Client: ODOT

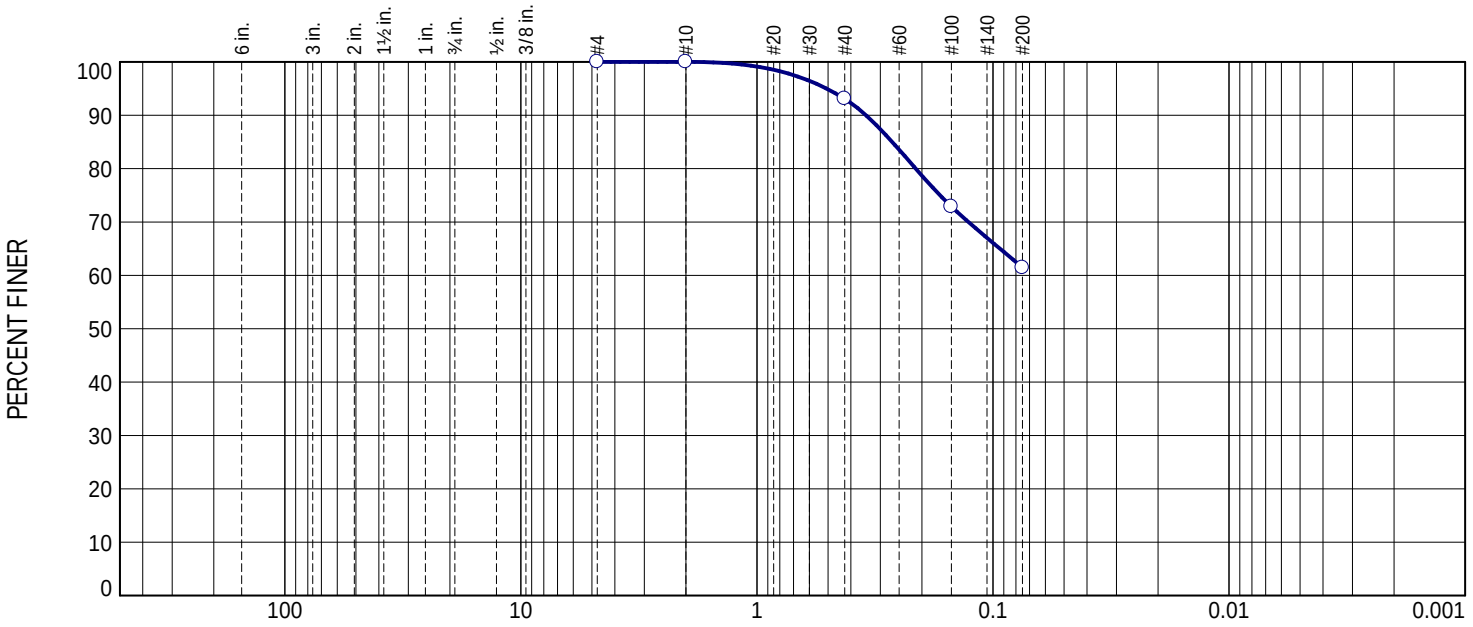
Sample	Classification				Atterberg Limits				% Passing					Sulfate PPM	Remarks
	Color	Description	AASHTO	USCS	LL	PL	PI	NM (%)	#4	#10	#40	#100	#200		
B-7 S-4	lt brown	lean clay						12.4							
B-7 S-5	brown	lean clay						11.5							
B-7 S-6	lt brown	lean clay						8.5							
B-8															
B-8 S-1	lt brown	lean clay with sand	A-6(9)	CL	32	18	14	18.0	100.0	100.0	95.5	83.5	73.7		
B-8 S-2	brown	lean clay						14.4							
B-8 S-3	lt tan	lean clay						16.5							
B-8 S-4	brown	silty lean clay						15.0							
B-8 S-5	brown	silty lean clay						16.3							
B-8 S-6	brown	silty lean clay						10.7							
B-9															
B-9 S-1	dk brown	lean clay						18.6							
B-9 S-2	lt brown	lean clay						15.5							
B-9 S-3	lt brown	lean clay with sand	A-6(10)	CL	31	15	16	14.3	100.0	100.0	96.3	86.4	76.9		
B-9 S-4	lt brown	lean clay						9.9							
B-9 S-5	lt brown	lean clay						15.6							
B-9 S-6	lt brown	lean clay						7.8							
B-10															
B-10 S-1	dk brown	lean clay						17.9							
B-10 S-2	lt brown	sandy lean clay	A-6(7)	CL	31	17	14	16.9	100.0	100.0	93.7	78.7	65.1		
B-10 S-3	lt brown	lean clay						12.6							
B-10 S-4	lt brown	lean clay						10.3							
B-10 S-5	lt brown	lean clay						14.7							
B-10 S-6	lt tan	lean clay						17.4							
B-11															
B-11 S-1	lt brown	lean clay with sand	A-6(8)	CL	29	16	13	16.7	100.0	100.0	95.9	83.5	75.4		
B-11 S-2	lt brown	lean clay						13.9							
B-11 S-3	lt brown	lean clay						14.2							
B-11 S-4	lt brown	lean clay						12.5							
B-11 S-5	lt brown	lean clay						14.3							
B-11 S-6	lt brown	lean clay						23.0							
E-1															
E-1 S-1	dk brown	lean clay						18.9							
E-1 S-2	dk brown	lean clay						20.9							
E-1 S-3	lt brown	lean clay with sand	A-6(5)	CL	25	14	11	16.6	100.0	100.0	91.2	79.8	71.0		
E-1 S-4	lt brown	lean clay						14.9							
P-1															
P-1 S-1	lt brown	sandy lean clay	A-6(6)	CL	28	12	16	10.9	100.0	100.0	90.8	74.2	61.1		
P-1 S-2	lt brown	lean clay						8.8							
P-2															
P-2 S-1	lt brown	sandy lean clay	A-6(3)	CL	24	12	12	9.8	100.0	100.0	87.7	66.9	56.6		
P-2 S-2	dk brown	lean clay						16.5							
P-3															
P-3 S-1	lt brown	sandy lean clay	A-6(8)	CL	31	17	14	14.9	100.0	100.0	96.3	84.3	70.1		
P-3 S-2	lt brown	lean clay						11.0							

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-1 Depth: 3.5 - 5
Sample Number: S-2 Sample Date: 2/9/26



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.9	31.7	61.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	93.1		
#100	72.9		
#200	61.4		

* (no specification provided)

Material Description

sandy lean clay

Atterberg Limits

PL= 15 LL= 29 PI= 14

Coefficients

D_{85}= 0.2674 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(6)

Remarks

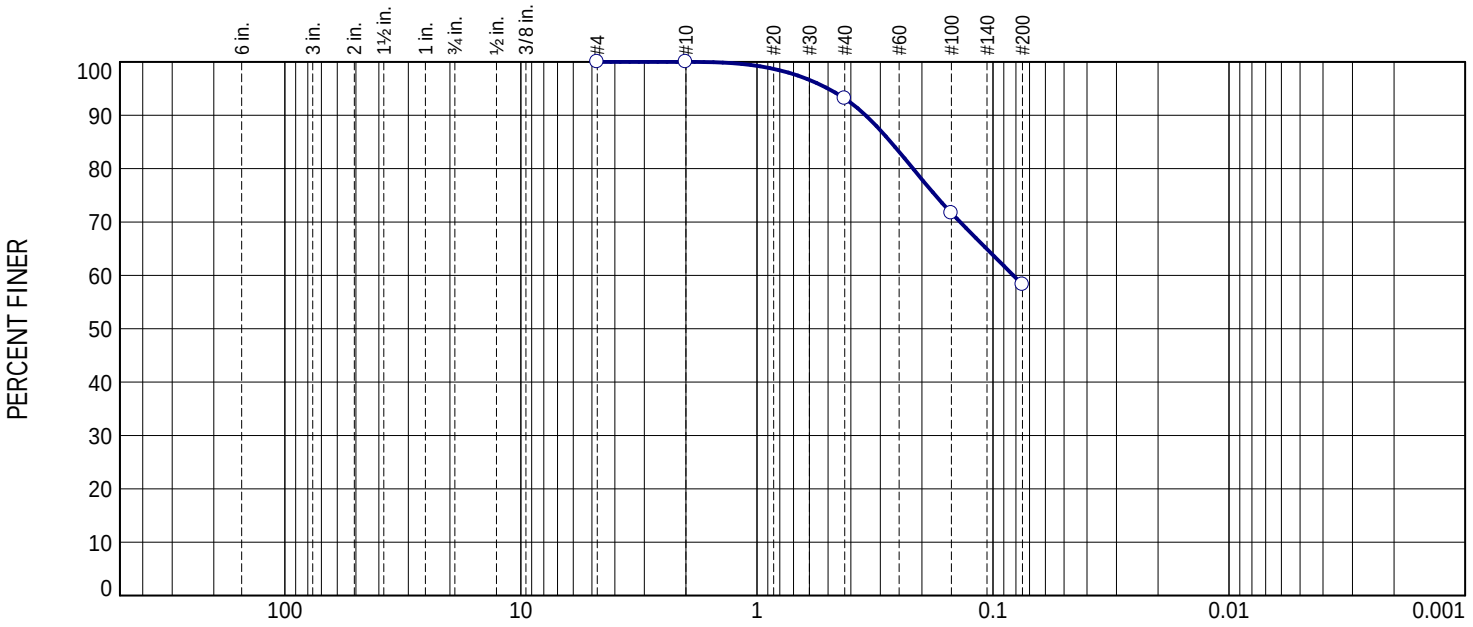
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-2 Depth: 6 - 7.5
Sample Number: S-3 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.8	34.9	58.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	93.2		
#100	71.7		
#200	58.3		

* (no specification provided)

Material Description

sandy lean clay

Atterberg Limits

PL= 13 LL= 27 PI= 14

Coefficients

D_{85}= 0.2713 D_{60}= 0.0820 D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(5)

Remarks

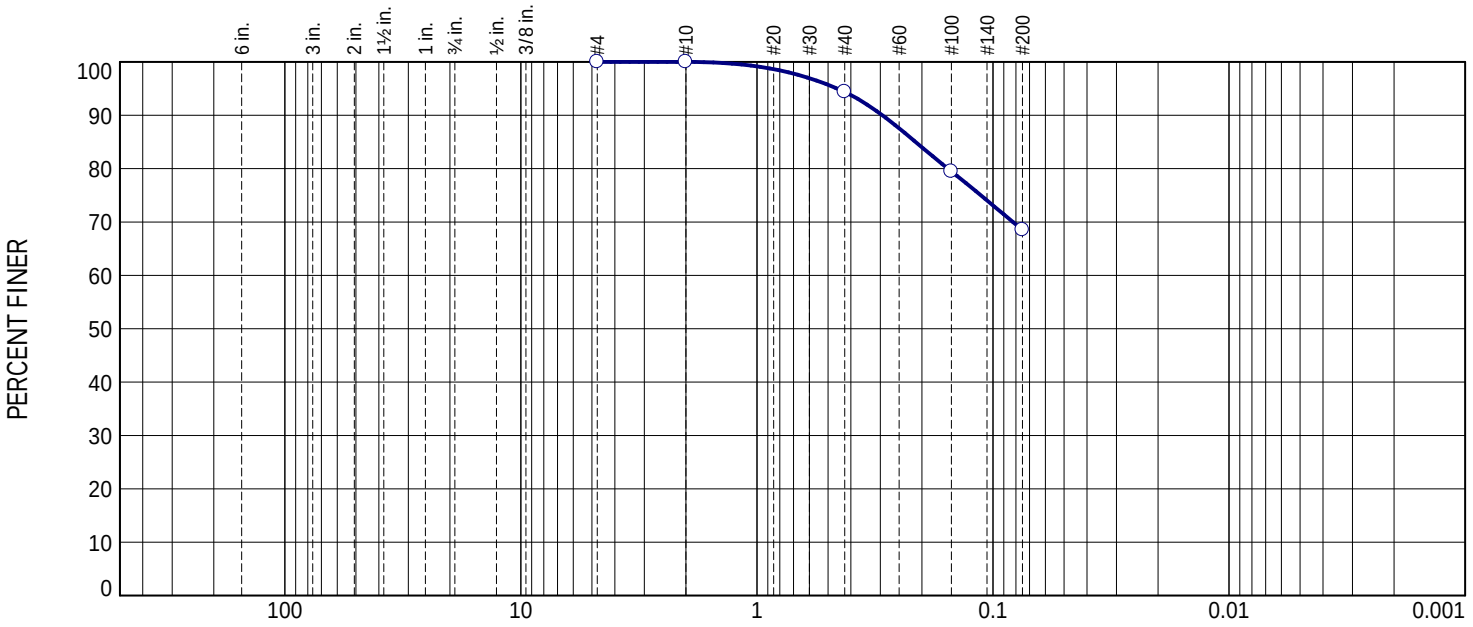
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-3 Depth: 8.5 - 10
Sample Number: S-4 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.6	25.9	68.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	94.4		
#100	79.5		
#200	68.5		

* (no specification provided)

Material Description

sandy lean clay

Atterberg Limits

PL= 14 LL= 28 PI= 14

Coefficients

D_{85}= 0.2127 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(7)

Remarks

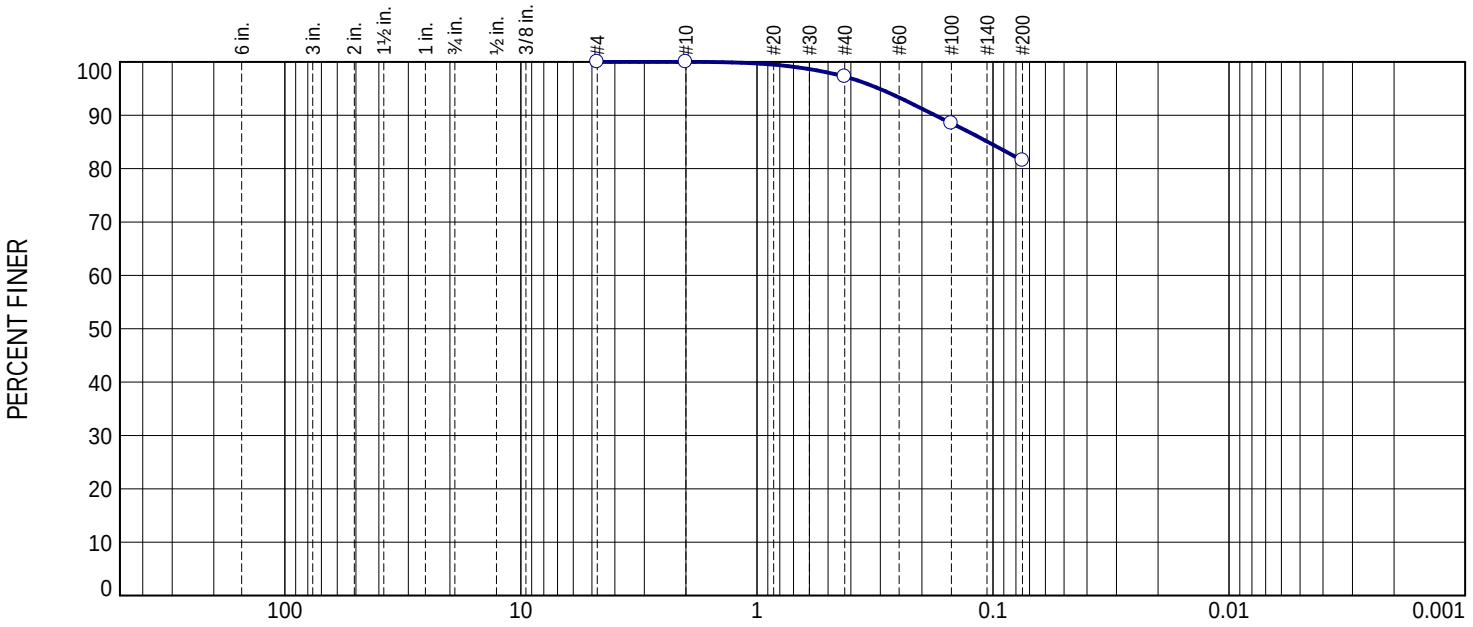
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-4 Depth: 1 - 2.5
Sample Number: S-1 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.8	15.7	81.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	97.2		
#100	88.5		
#200	81.5		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 17 LL= 27 PI= 10

Coefficients

D_{85}= 0.1051 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-4(6)

Remarks

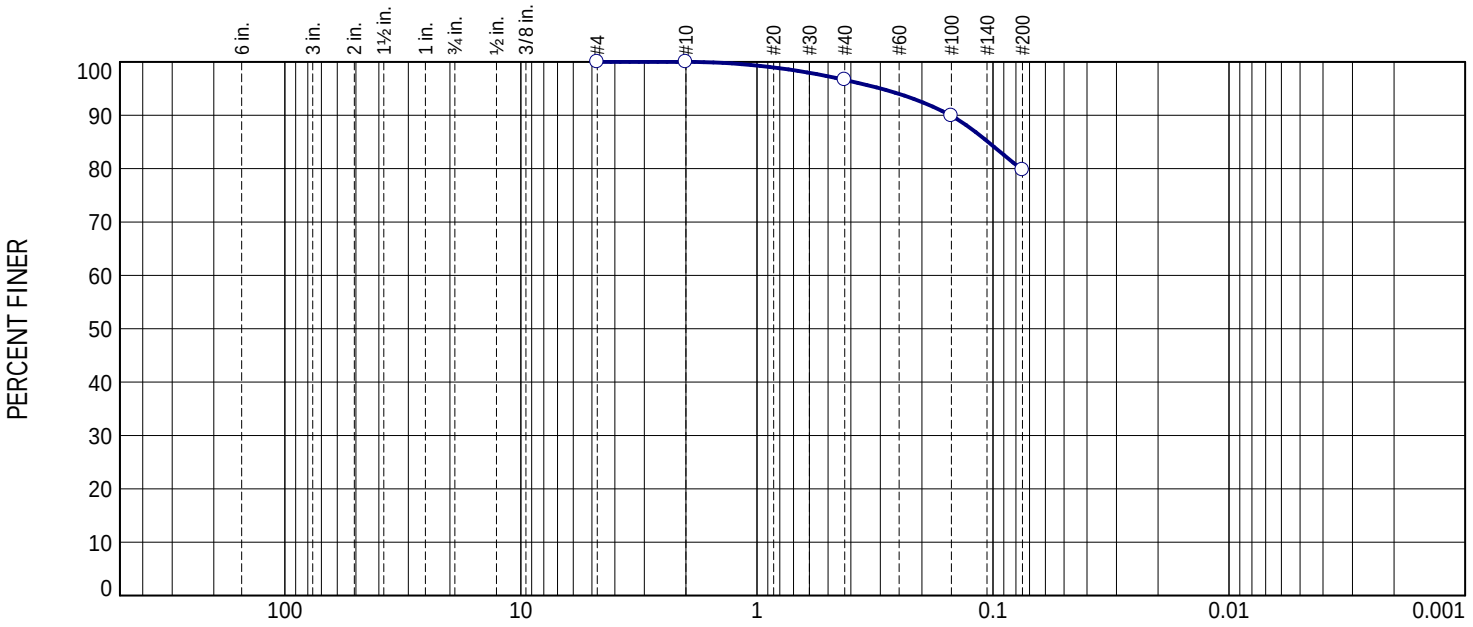
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-5 Depth: 6 - 7.5
Sample Number: S-3 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.4	16.8	79.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	96.6		
#100	89.9		
#200	79.8		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 18 LL= 31 PI= 13

Coefficients

D_{85}= 0.1049 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(9)

Remarks

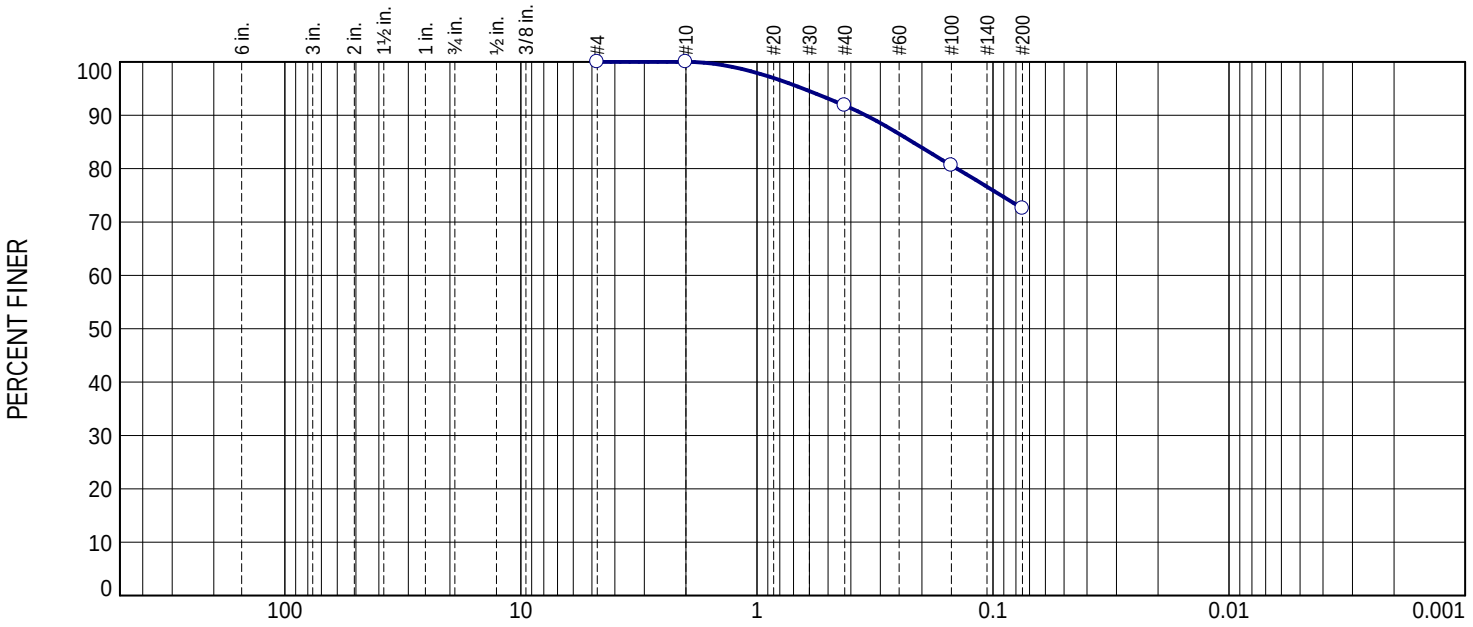
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-6 Depth: 1 - 2.5
Sample Number: S-1 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.2	19.3	72.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	91.8		
#100	80.6		
#200	72.5		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 19 LL= 34 PI= 15

Coefficients

D_{85}= 0.2192 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(9)

Remarks

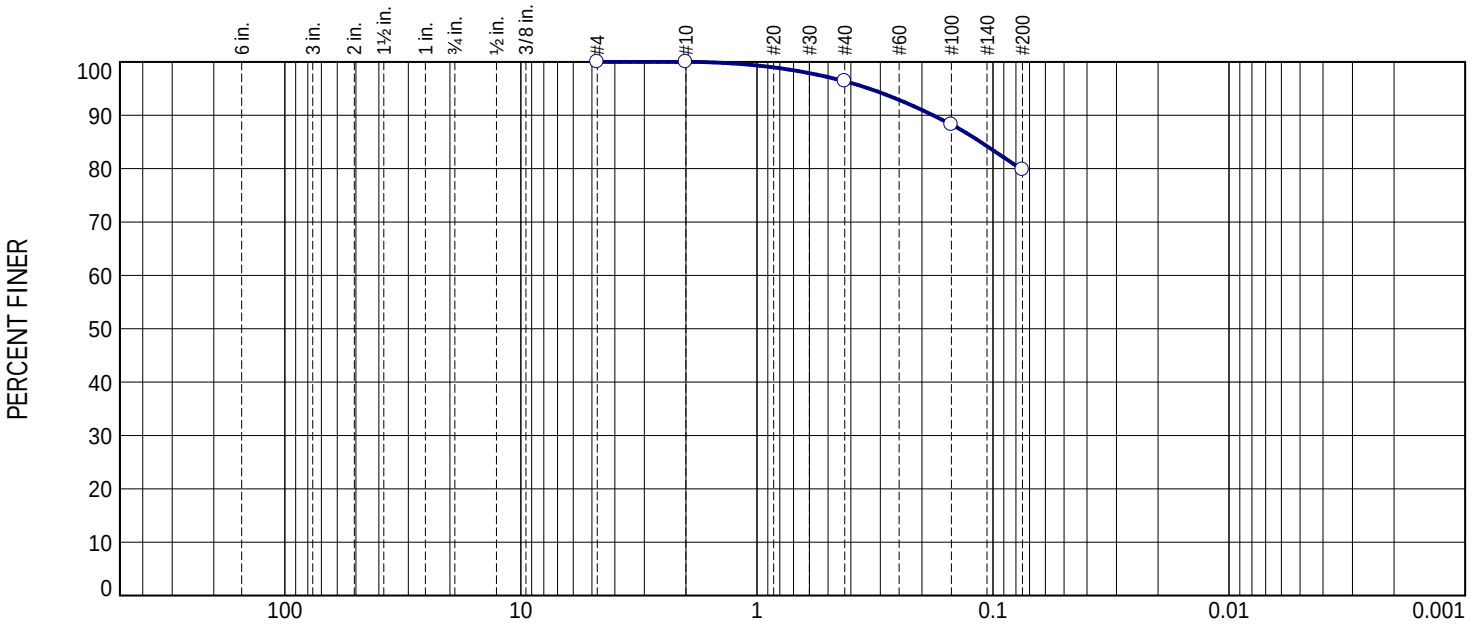
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-7 Depth: 6 - 7.5
Sample Number: S-3 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.6	16.6	79.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	96.4		
#100	88.3		
#200	79.8		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 16 LL= 30 PI= 14

Coefficients

D_{85}= 0.1128 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(9)

Remarks

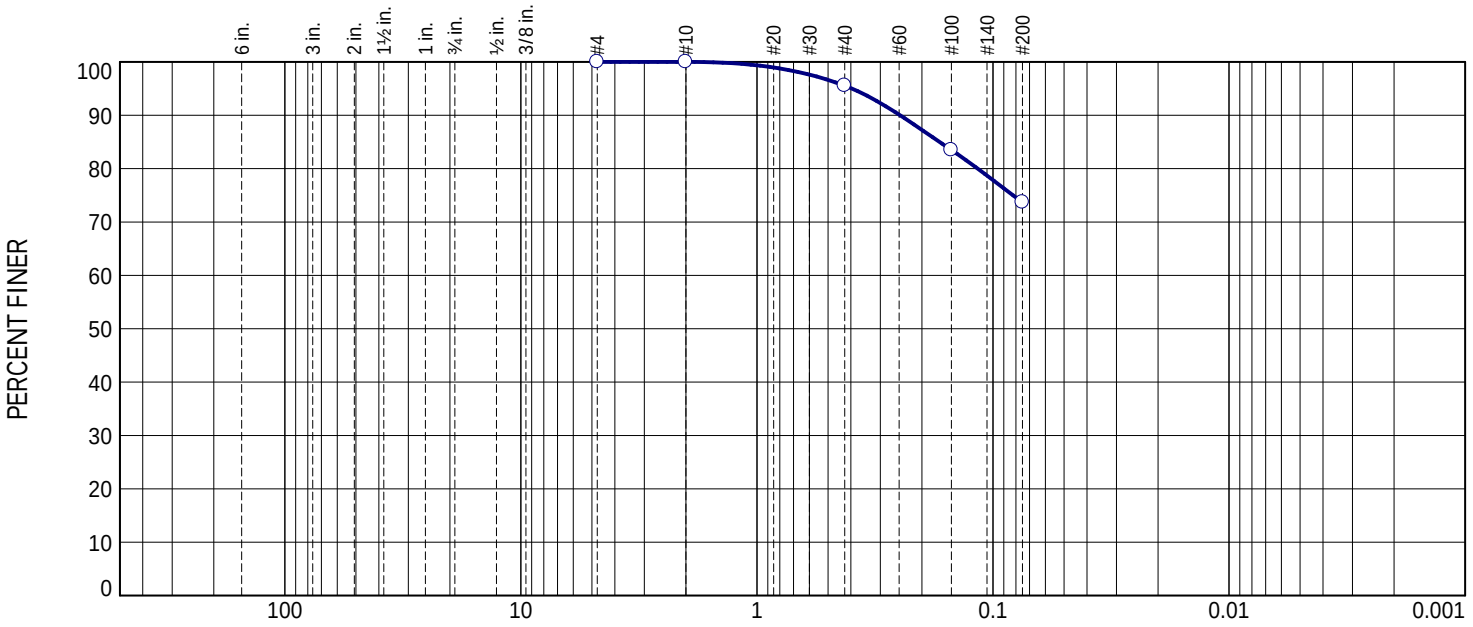
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-8 Depth: 1 - 2.5
Sample Number: S-1 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.5	21.8	73.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	95.5		
#100	83.5		
#200	73.7		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 18 LL= 32 PI= 14

Coefficients

D_{85}= 0.1685 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(9)

Remarks

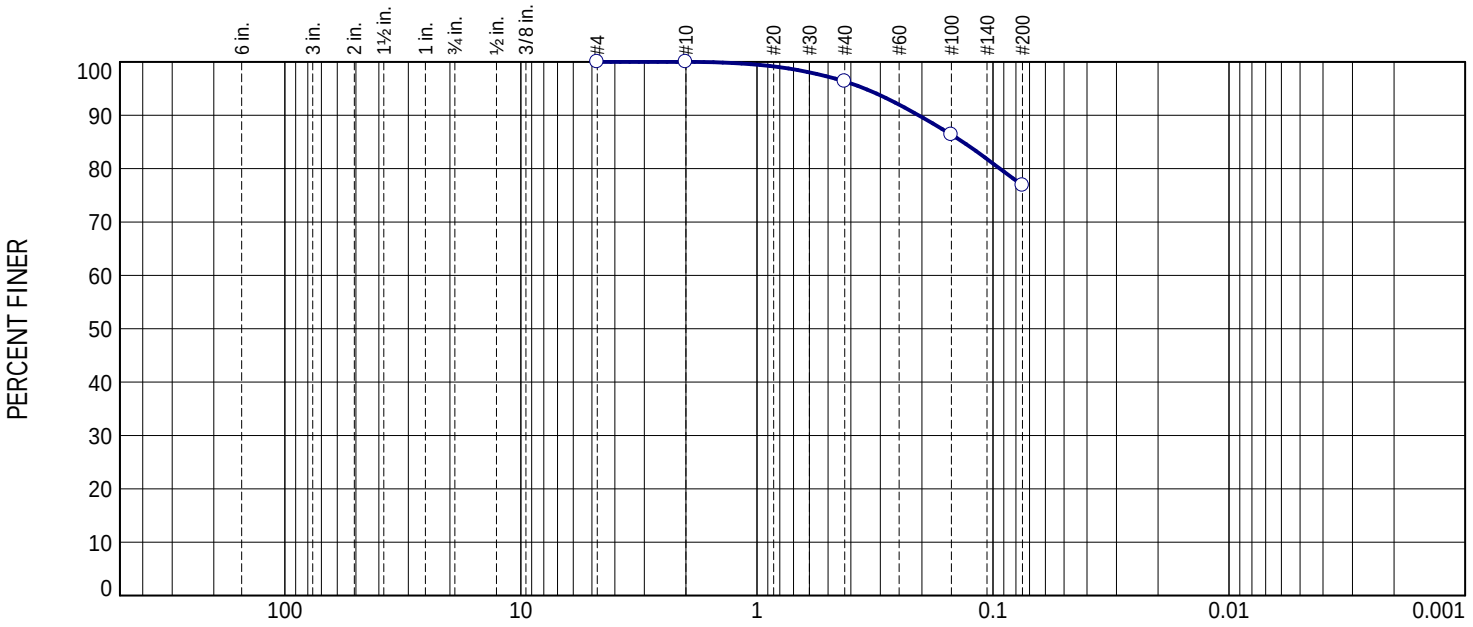
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-9 Depth: 6 - 7.5
Sample Number: S-3 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.7	19.4	76.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	96.3		
#100	86.4		
#200	76.9		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 15 LL= 31 PI= 16

Coefficients

D_{85}= 0.1342 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(10)

Remarks

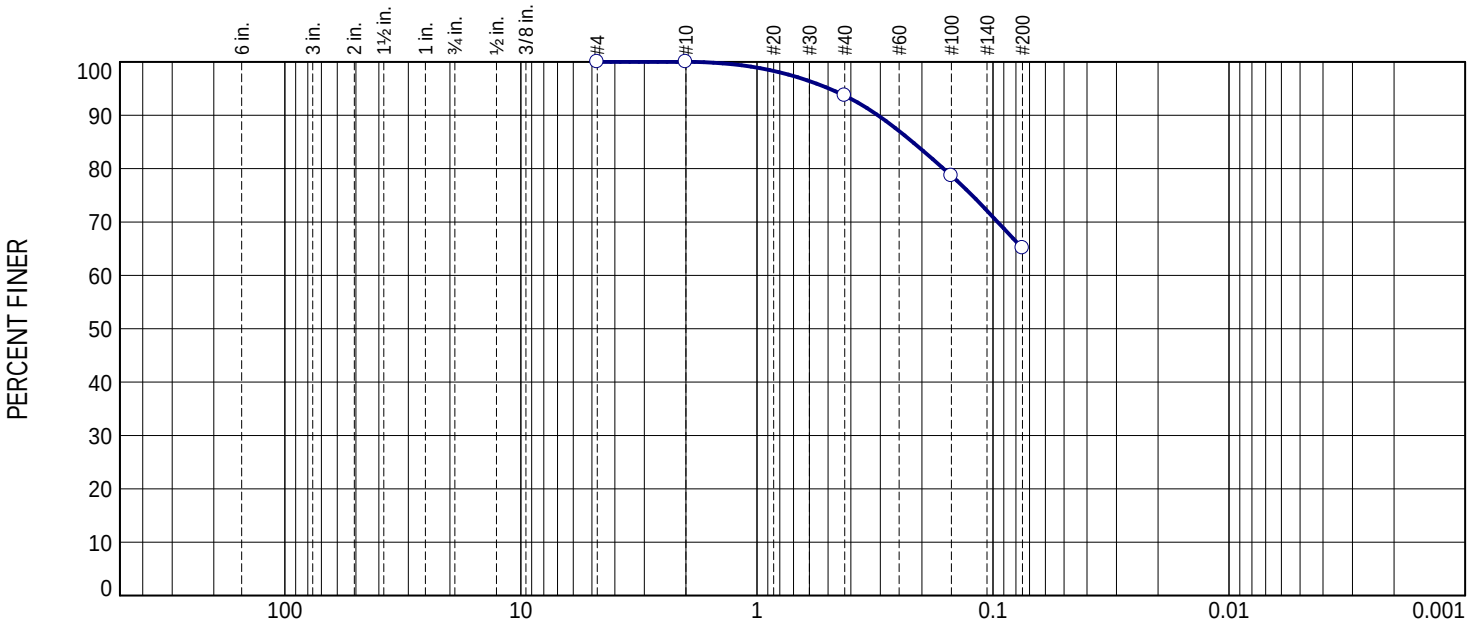
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-10 Depth: 3.5 - 5
Sample Number: S-2 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	6.3	28.6	65.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	93.7		
#100	78.7		
#200	65.1		

* (no specification provided)

Material Description

sandy lean clay

Atterberg Limits

PL= 17 LL= 31 PI= 14

Coefficients

D_{85}= 0.2192 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(7)

Remarks

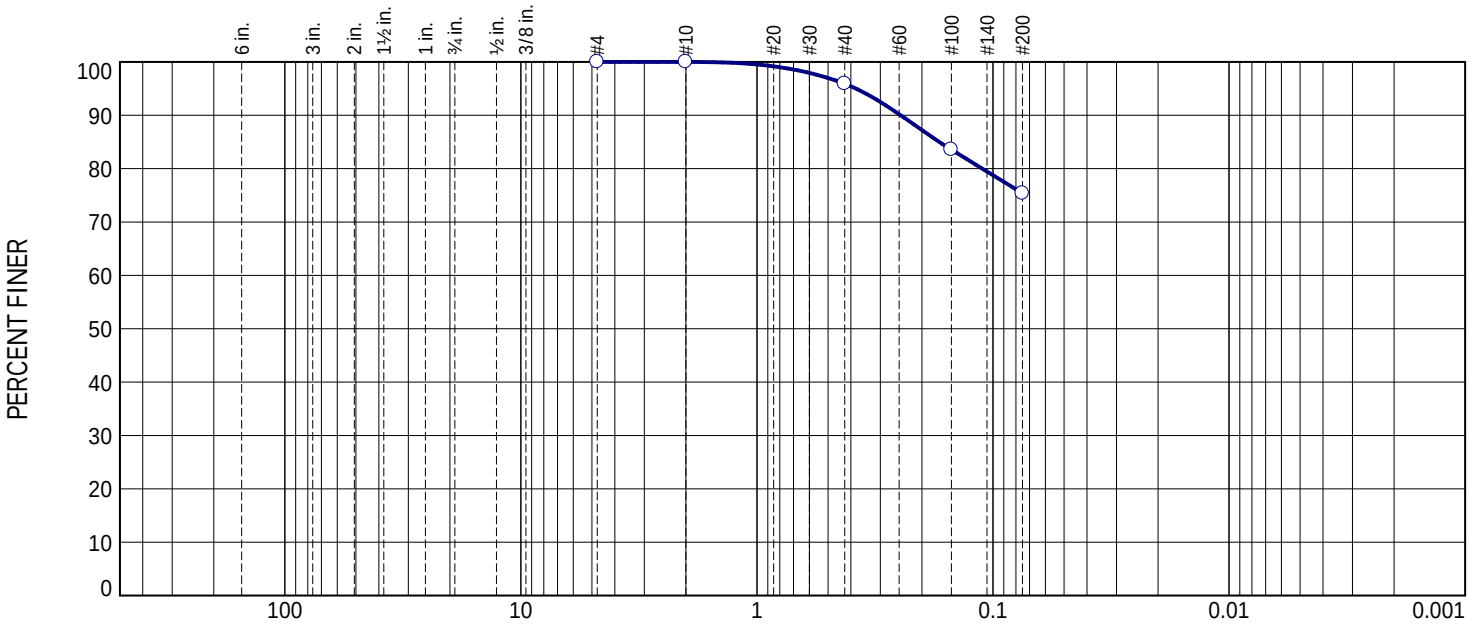
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: B-11 Depth: 1 - 2.5
Sample Number: S-1 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.1	20.5	75.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	95.9		
#100	83.5		
#200	75.4		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 16 LL= 29 PI= 13

Coefficients

D_{85}= 0.1688 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(8)

Remarks

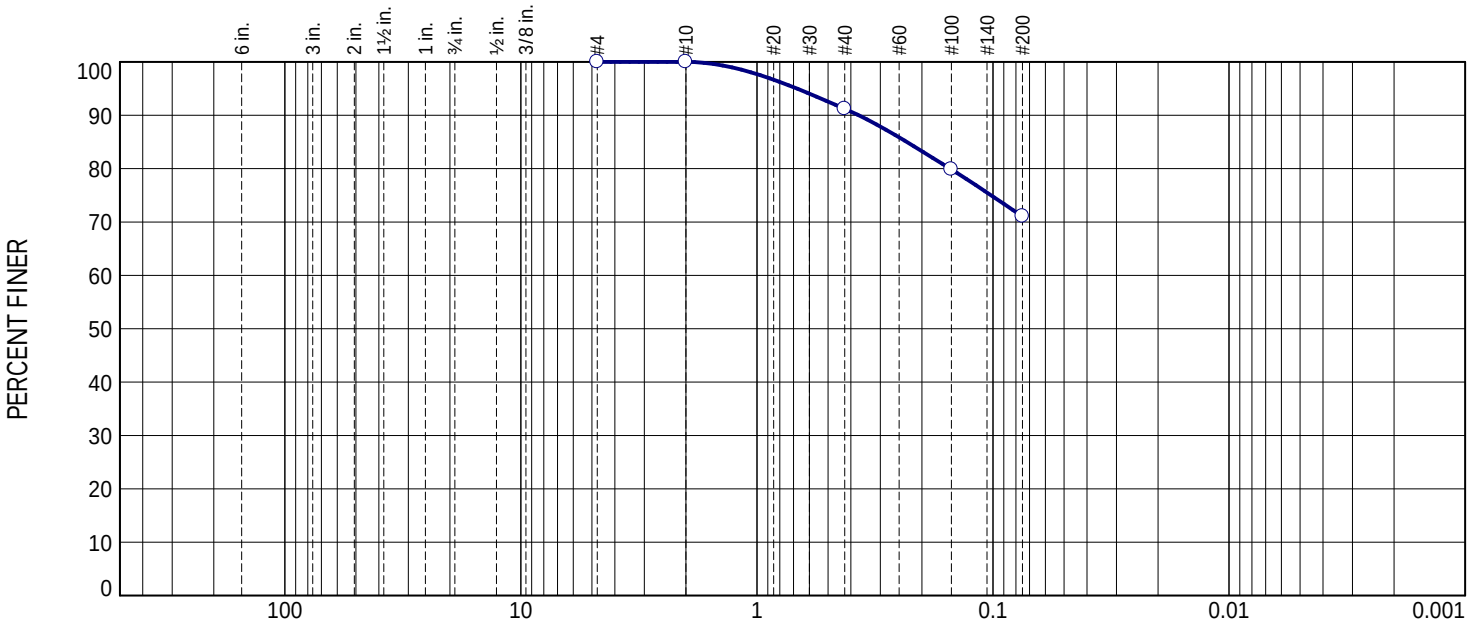
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: E-1 Depth: 6 - 7.5
Sample Number: S-3 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.8	20.2	71.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	91.2		
#100	79.8		
#200	71.0		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 14 LL= 25 PI= 11

Coefficients

D_{85}= 0.2318 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(5)

Remarks

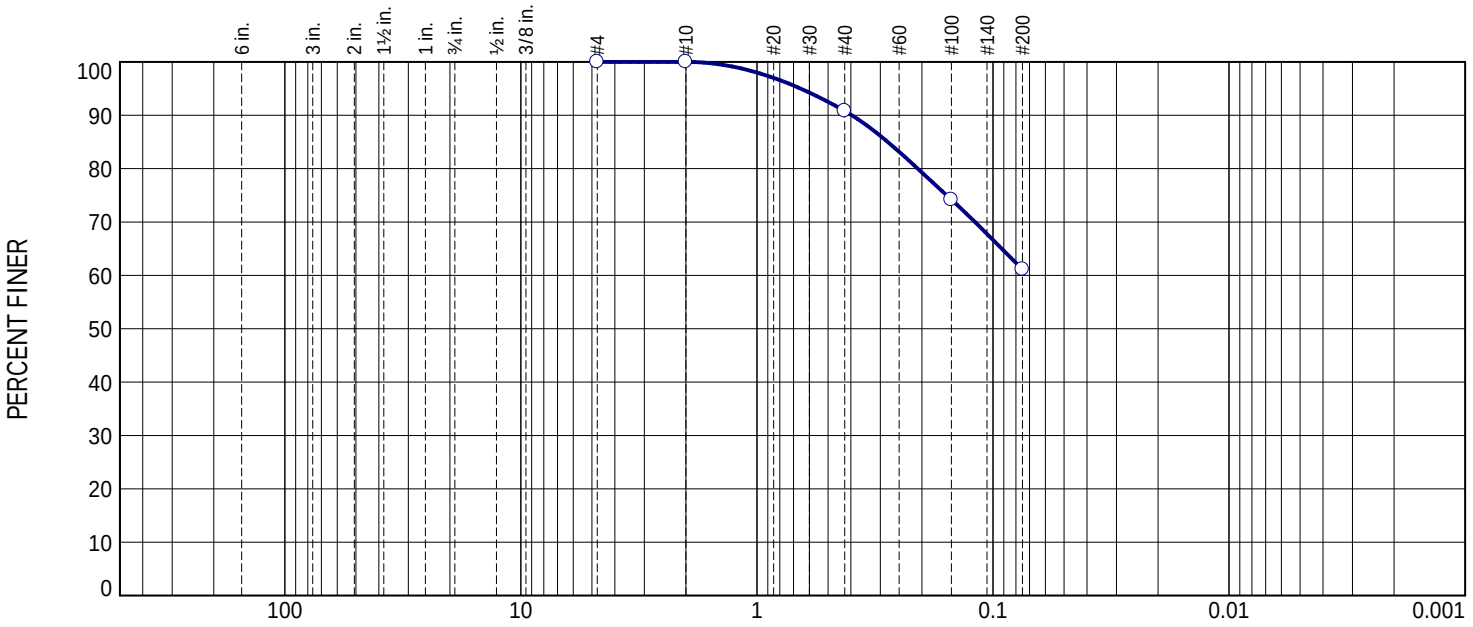
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: P-1 Depth: 1 - 2.5
Sample Number: S-1 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	9.2	29.7	61.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	90.8		
#100	74.2		
#200	61.1		

* (no specification provided)

Material Description

sandy lean clay

Atterberg Limits

PL= 12 LL= 28 PI= 16

Coefficients

D_{85}= 0.2793 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(6)

Remarks

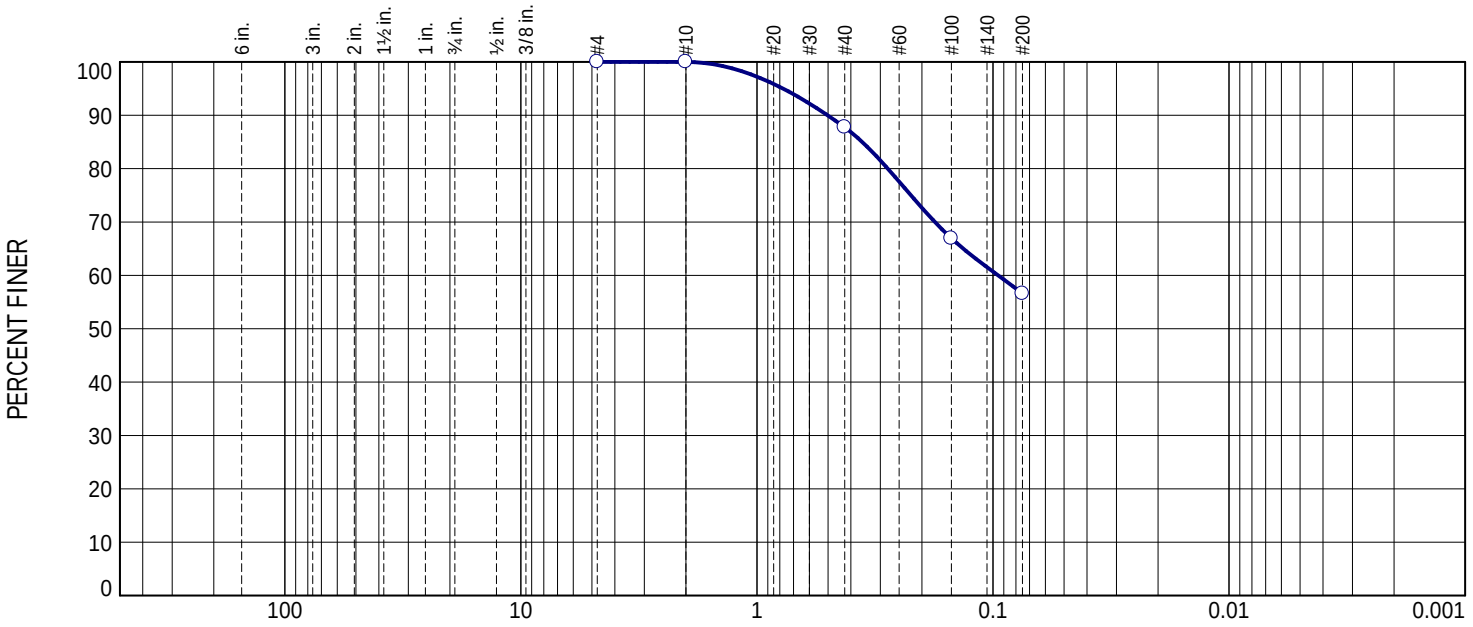
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: P-2 Depth: 1 - 2.5
Sample Number: S-1 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	12.3	31.1	56.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	87.7		
#100	66.9		
#200	56.6		

* (no specification provided)

Material Description

sandy lean clay

Atterberg Limits

PL= 12 LL= 24 PI= 12

Coefficients

D_{85}= 0.3583 D_{60}= 0.0952 D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(3)

Remarks

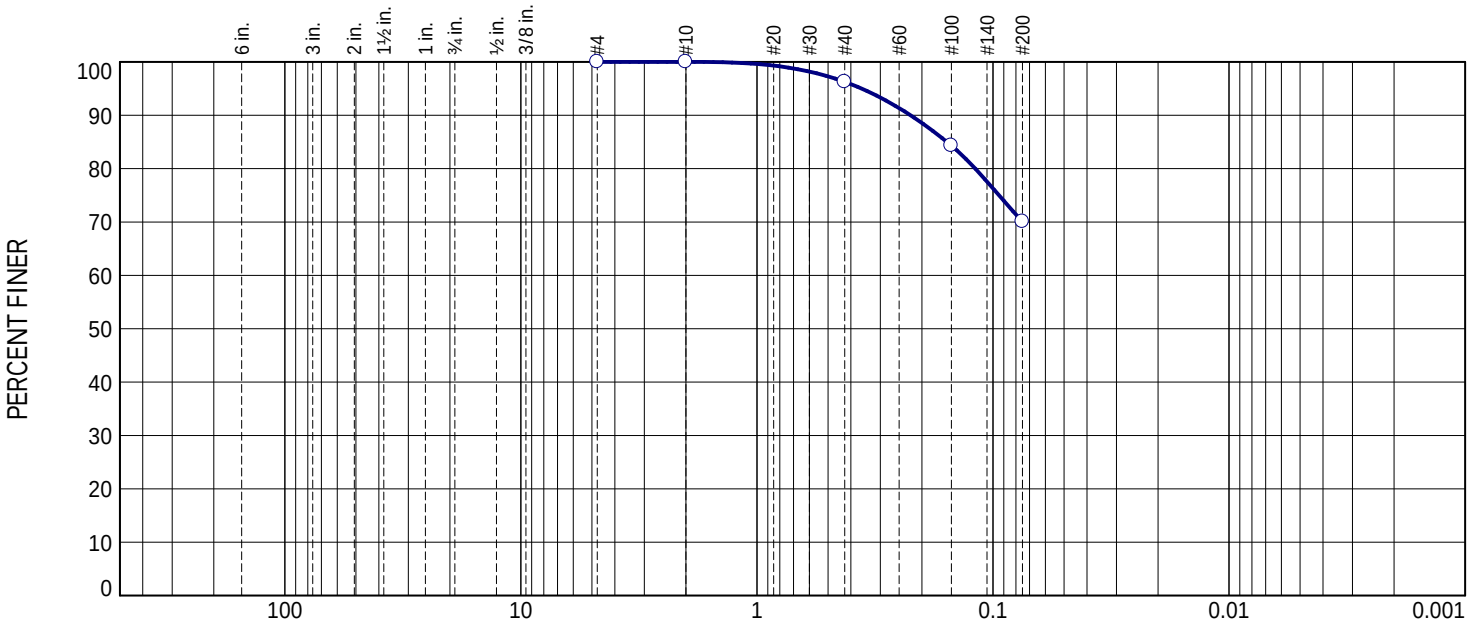
Figure

Particle Size Distribution Report

Project: Texas County Maintenance Facility Project No.: 260085

Client: ODOT

Source of Sample: P-3 Depth: 1 - 2.5
Sample Number: S-1 Sample Date:



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.7	26.2	70.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	96.3		
#100	84.3		
#200	70.1		

* (no specification provided)

Material Description

sandy lean clay

Atterberg Limits

PL= 17 LL= 31 PI= 14

Coefficients

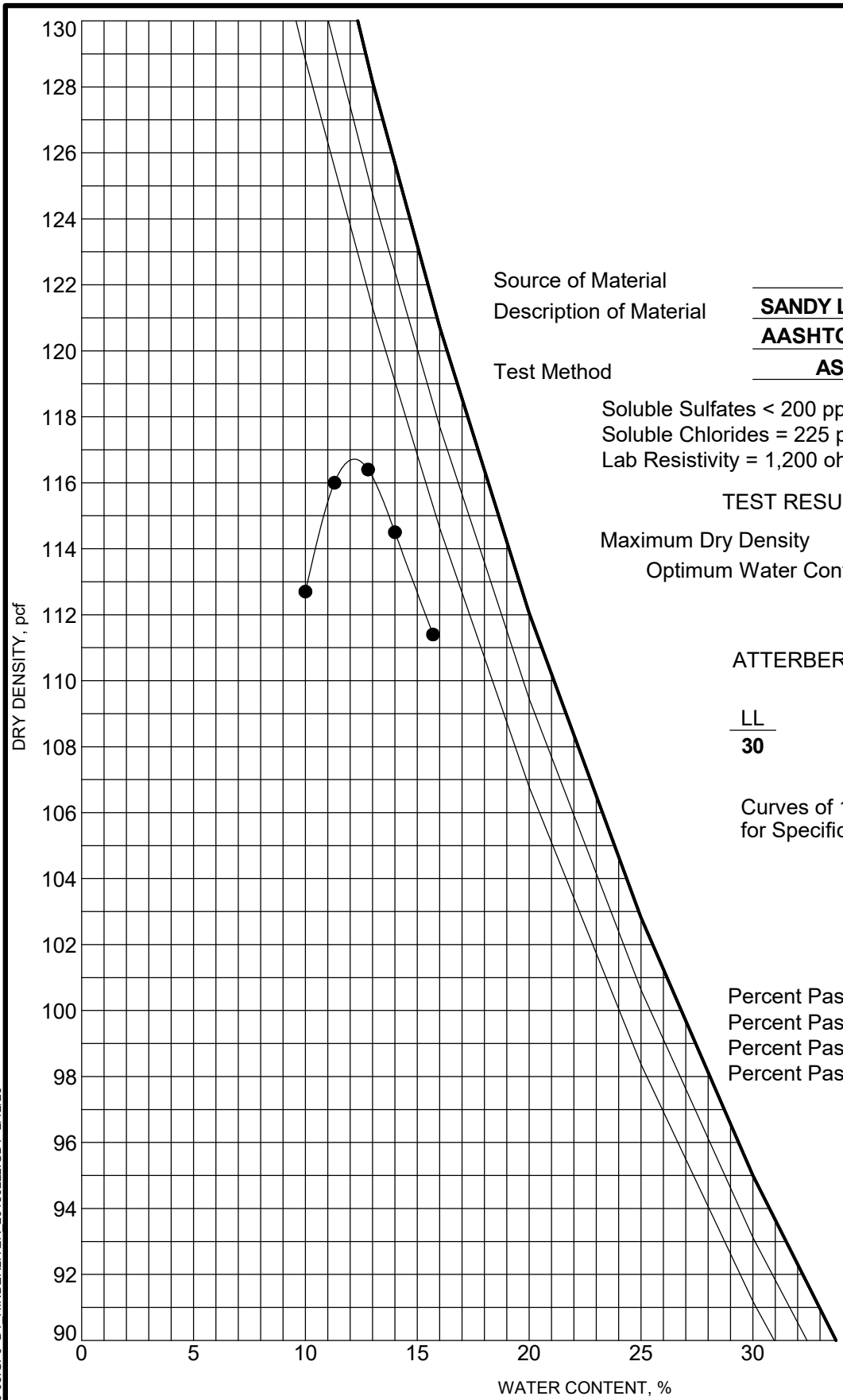
D_{85}= 0.1568 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO= A-6(8)

Remarks

Figure



Source of Material	**HGE-595 1.0**
Description of Material	**SANDY LEAN CLAY(CL)**
	AASHTO A-6(7)
Test Method	**ASTM D698 Method A**

Soluble Sulfates < 200 ppm
Soluble Chlorides = 225 ppm
Lab Resistivity = 1,200 ohm-cm; pH = 8.3

TEST RESULTS

Maximum Dry Density	**116.7**	**PCF**
Optimum Water Content	**12.2**	**%**

ATTERBERG LIMITS

LL	PL	PI
30	**12**	**18**

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

Percent Passing No. 4 Sieve = 100
Percent Passing No. 10 Sieve = 97
Percent Passing No. 40 Sieve = 85
Percent Passing No. 200 Sieve = 57.7

HGE
Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Website: www.HinderliterGeo.com

MOISTURE-DENSITY RELATIONSHIP

Project: State Job No. 39041(04) Texas County Maintenance

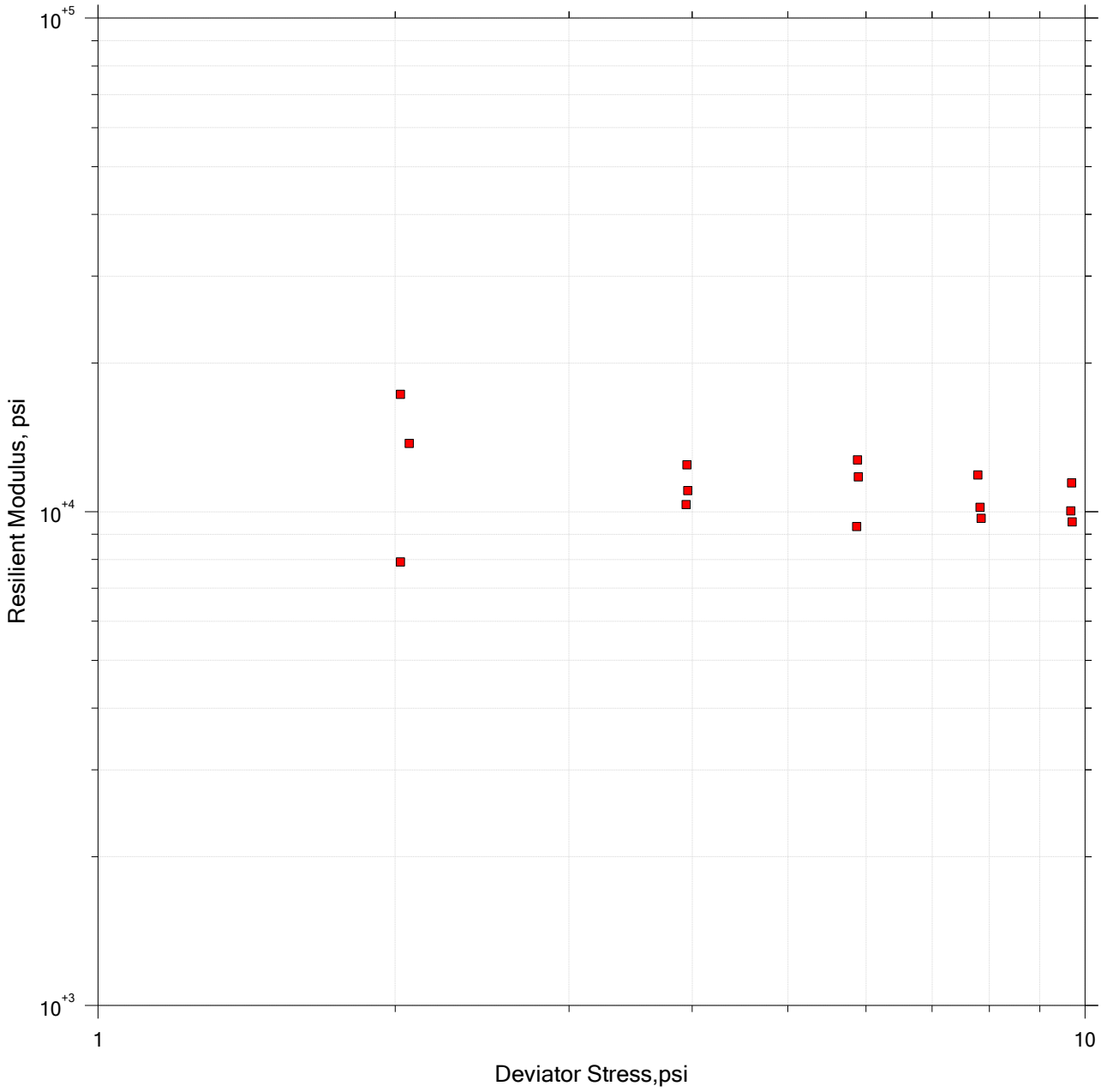
Location: 1053 Mile 30 Rd - Guymon, Oklahoma

Number: CEC-26-05

RM TEST

Summary Data

$Mr = 13312 * Sd^{-0.111}$ r = -0.33775



KLEINFELDER Bright People. Right Solutions.	Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
	Boring Number: State 39041(04)	Tester: SS	Checker: SYW
	Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
	Test Number: 95% MDD at OMC	Preparation: AASHTO T307	Elevation: N/A
	Description: Sandy Lean Clay - AASHTO A-6(7)		
	Remarks: Remolded Specimen Dry Density 110.8 pcf at 12.2% Moisture		

RM TEST

Summary Data

Confining Stress S3 psi	Nom. Max. Deviator Stress psi	Mean Deviator Stress psi	Std. Dev. Deviator Stress psi	Mean Bulk Stress psi	Mean Resilient Strain %	Std. Dev. Resilient Strain %	Mean Resilient Modulus psi	Std. Dev. Resilient Modulus psi
5.934	2.000	2.066	0.0504	19.87	0.01	0.00	13760.	417.51
5.975	4.000	3.951	0.0487	21.88	0.03	0.00	12448.	354.58
5.970	6.000	5.880	0.0503	23.79	0.04	0.00	12736.	241.73
5.942	8.000	7.789	0.0643	25.62	0.06	0.00	11871.	107.01
5.977	10.00	9.691	0.0354	27.62	0.08	0.00	11433.	33.888
3.945	2.000	2.025	0.0171	13.86	0.01	0.00	17287.	236.24
3.951	4.000	3.959	0.0424	15.81	0.03	0.00	11038.	78.646
3.984	6.000	5.894	0.0423	17.85	0.05	0.00	11762.	199.53
3.977	8.000	7.828	0.0643	19.76	0.07	0.00	10205.	32.713
3.918	10.00	9.675	0.0163	21.43	0.09	0.00	10042.	71.150
1.894	2.000	2.025	0.0335	7.705	0.02	0.00	7912.5	38.703
1.882	4.000	3.943	0.0227	9.590	0.03	0.00	10341.	126.35
1.929	6.000	5.870	0.0503	11.66	0.06	0.00	9336.1	103.97
1.907	8.000	7.849	0.0425	13.57	0.07	0.00	9691.9	32.969
1.940	10.00	9.705	0.0417	15.52	0.09	0.01	9534.2	330.28

Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% MDD at OMC	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.8 pcf at 12.2% Moisture		

RM TEST

Results Data

Sequence: 1 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 4 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
496	24.377	21.936	2.4408	3.9674	3.5701	0.39724	0.0016177	0.028846	12376	0.041964
497	24.415	22.015	2.4005	3.9736	3.583	0.39069	0.001653	0.029475	12156	0.042227
498	24.109	21.668	2.4408	3.9237	3.5265	0.39724	0.0016686	0.029755	11852	0.041768
499	24.259	21.82	2.4391	3.9483	3.5513	0.39696	0.0016568	0.029543	12021	0.042159
500	23.681	21.244	2.4374	3.8542	3.4575	0.39669	0.0016177	0.028846	11986	0.041947
AVG	24.168	21.737	2.4317	3.9334	3.5377	0.39576	0.0016428	0.029293	12078	0.042013
SD	0.26594	0.27267	0.015638	0.043281	0.044377	0.0025451	2.1105e-05	0.00037635	177.75	0.00016338

Sequence: 2 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 2 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	12.591	11.372	1.219	2.0492	1.8508	0.19839	0.00077713	0.013857	13356	0.037122
97	12.21	10.988	1.2223	1.9873	1.7883	0.19894	0.00069452	0.012384	14440	0.037385
98	13.173	11.913	1.2592	2.1438	1.9389	0.20494	0.00081196	0.014479	13392	0.037173
99	12.748	11.566	1.1821	2.0748	1.8824	0.19239	0.00077758	0.013866	13576	0.037181
100	12.748	11.57	1.1787	2.0748	1.883	0.19184	0.00075234	0.013415	14036	0.037811
AVG	12.694	11.482	1.2123	2.066	1.8687	0.1973	0.0007627	0.0136	13760	0.037334
SD	0.30962	0.30228	0.029608	0.050392	0.049196	0.0048187	3.9019e-05	0.00069577	417.51	0.00025453

KLEINFELDER
Bright People. Right Solutions.

Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% MDD at OMC	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.8 pcf at 12.2% Moisture		

RM TEST

Results Data

Sequence: 3 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 4 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	24.494	22.129	2.3653	3.9865	3.6015	0.38496	0.0015388	0.027439	13125	0.040236
97	24.417	21.934	2.4827	3.9739	3.5699	0.40406	0.0016343	0.029143	12249	0.038448
98	23.688	21.242	2.4458	3.8553	3.4572	0.39806	0.0016024	0.028573	12099	0.038329
99	24.461	22.013	2.4475	3.981	3.5827	0.39833	0.00162	0.028888	12402	0.038914
100	24.306	21.859	2.4475	3.9559	3.5576	0.39833	0.0016133	0.028769	12366	0.038803
AVG	24.273	21.835	2.4378	3.9505	3.5538	0.39675	0.0016018	0.028562	12448	0.038946
SD	0.29941	0.30982	0.038769	0.048729	0.050424	0.0063098	3.3152e-05	0.00059115	354.58	0.00068027

Sequence: 4 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 6 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	35.985	32.264	3.7213	5.8566	5.251	0.60565	0.0022301	0.039766	13205	0.043906
97	36.101	32.42	3.6811	5.8755	5.2764	0.5991	0.0023484	0.041876	12600	0.043456
98	36.602	32.924	3.6777	5.957	5.3585	0.59855	0.0023857	0.042541	12596	0.043719
99	36.292	32.612	3.6794	5.9066	5.3077	0.59882	0.0023381	0.041692	12731	0.044245
100	35.675	31.959	3.7162	5.8062	5.2013	0.60482	0.0023241	0.041442	12551	0.043779
AVG	36.131	32.436	3.6951	5.8804	5.279	0.60139	0.0023253	0.041463	12736	0.043821
SD	0.3091	0.32469	0.019392	0.050306	0.052843	0.0031561	5.18e-05	0.00092368	241.73	0.00025785

KLEINFELDER
Bright People. Right Solutions.

Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% MDD at OMC	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.8 pcf at 12.2% Moisture		

RM TEST

Results Data

Sequence: 5 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 8 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	48.249	43.366	4.8828	7.8526	7.0579	0.79468	0.0033455	0.059656	11831	0.057514
97	47.595	42.674	4.9214	7.7462	6.9452	0.80096	0.0033098	0.059019	11768	0.057693
98	47.903	42.982	4.9214	7.7964	6.9954	0.80096	0.0032845	0.058569	11944	0.057497
99	47.248	42.33	4.918	7.6897	6.8893	0.80041	0.0032083	0.05721	12042	0.057549
100	48.287	43.329	4.9582	7.8588	7.0519	0.80696	0.0033603	0.059919	11769	0.057218
AVG	47.857	42.936	4.9203	7.7887	6.9879	0.80079	0.0033017	0.058874	11871	0.057494
SD	0.39499	0.39428	0.023881	0.064284	0.06417	0.0038866	5.3711e-05	0.00095776	107.01	0.00015421

Sequence: 6 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 10 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	59.421	53.275	6.1465	9.6709	8.6705	1.0004	0.004272	0.076177	11382	0.070585
97	59.808	53.662	6.1465	9.7339	8.7336	1.0004	0.0042673	0.076093	11477	0.070832
98	59.384	53.238	6.1465	9.6649	8.6645	1.0004	0.0042497	0.075779	11434	0.071036
99	59.304	53.08	6.2236	9.6518	8.6389	1.0129	0.0042459	0.075711	11410	0.071103
100	59.805	53.659	6.1465	9.7334	8.733	1.0004	0.004274	0.076213	11459	0.070721
AVG	59.545	53.383	6.1619	9.691	8.6881	1.0029	0.0042618	0.075995	11433	0.070856
SD	0.21737	0.23585	0.030839	0.035378	0.038385	0.0050191	1.1703e-05	0.00020868	33.888	0.00019258

KLEINFELDER
Bright People. Right Solutions.

Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% MDD at OMC	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.8 pcf at 12.2% Moisture		

RM TEST

Results Data

Sequence: 7 of 16
Confining Pressure: 4 psi
Nom. Max. Deviator Stress: 2 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	12.475	11.26	1.2155	2.0303	1.8325	0.19782	0.00059274	0.010569	17338	0.016671
97	12.547	11.372	1.1752	2.0421	1.8508	0.19127	0.00059807	0.010665	17355	0.016492
98	12.316	11.141	1.1752	2.0044	1.8132	0.19127	0.00060323	0.010757	16856	0.016186
99	12.316	11.141	1.1752	2.0044	1.8132	0.19127	0.00058758	0.010478	17305	0.016118
100	12.547	11.335	1.2121	2.0421	1.8448	0.19727	0.00058848	0.010494	17580	0.016492
AVG	12.44	11.25	1.1907	2.0247	1.8309	0.19378	0.00059402	0.010592	17287	0.016392
SD	0.1049	0.096037	0.018915	0.017072	0.01563	0.0030784	5.9176e-06	0.00010552	236.24	0.00020775

Sequence: 8 of 16
Confining Pressure: 4 psi
Nom. Max. Deviator Stress: 4 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	24.692	22.32	2.3719	4.0186	3.6326	0.38604	0.0018491	0.032973	11017	0.01681
97	24.072	21.857	2.2144	3.9177	3.5573	0.36039	0.0018139	0.032344	10998	0.0163
98	23.996	21.626	2.3703	3.9054	3.5197	0.38576	0.0017723	0.031604	11137	0.016742
99	24.382	21.938	2.444	3.9682	3.5704	0.39776	0.0018014	0.032121	11115	0.016965
100	24.494	22.085	2.4088	3.9864	3.5944	0.39204	0.0018453	0.032906	10923	0.016479
AVG	24.327	21.965	2.3619	3.9593	3.5749	0.3844	0.0018164	0.03239	11038	0.016659
SD	0.26022	0.23137	0.078578	0.042351	0.037656	0.012789	2.8582e-05	0.00050967	78.646	0.00023848

KLEINFELDER Bright People. Right Solutions.	Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
	Boring Number: State 39041(04)	Tester: SS	Checker: SYW
	Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
	Test Number: 95% MDD at OMC	Preparation: AASHTO T307	Elevation: N/A
	Description: Sandy Lean Clay - AASHTO A-6(7)		
	Remarks: Remolded Specimen Dry Density 110.8 pcf at 12.2% Moisture		

RM TEST

Results Data

Sequence: 9 of 16
Confining Pressure: 4 psi
Nom. Max. Deviator Stress: 6 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	35.75	32.153	3.5971	5.8184	5.233	0.58543	0.0024298	0.043327	12078	0.02006
97	36.25	32.537	3.7127	5.8997	5.2955	0.60426	0.0025502	0.045474	11645	0.020239
98	36.248	32.537	3.7111	5.8994	5.2955	0.60398	0.0025741	0.0459	11537	0.019848
99	36.285	32.576	3.7094	5.9054	5.3017	0.60371	0.0025535	0.045534	11644	0.020103
100	36.553	32.882	3.6708	5.9491	5.3516	0.59743	0.0025207	0.044948	11906	0.021071
AVG	36.217	32.537	3.6802	5.8944	5.2955	0.59896	0.0025256	0.045037	11762	0.020264
SD	0.25978	0.23152	0.0444	0.042279	0.03768	0.0072262	5.0882e-05	0.0009073	199.53	0.00042255

Sequence: 10 of 16
Confining Pressure: 4 psi
Nom. Max. Deviator Stress: 8 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	48.161	43.175	4.9865	7.8383	7.0268	0.81157	0.0038682	0.068977	10187	0.024469
97	47.466	42.518	4.948	7.7251	6.9198	0.80529	0.0038052	0.067854	10198	0.024748
98	48.661	43.753	4.9078	7.9196	7.1209	0.79875	0.0038901	0.069367	10266	0.024605
99	47.927	42.942	4.9849	7.8002	6.9889	0.81129	0.0038544	0.06873	10169	0.0248
100	48.275	43.331	4.9446	7.8569	7.0521	0.80475	0.0038758	0.069112	10204	0.024808
AVG	48.098	43.144	4.9544	7.828	7.0217	0.80633	0.0038587	0.068808	10205	0.024686
SD	0.39528	0.40981	0.029232	0.064333	0.066698	0.0047576	2.9144e-05	0.00051968	32.713	0.00013067

KLEINFELDER
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Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% MDD at OMC	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.8 pcf at 12.2% Moisture		

RM TEST

Results Data

Sequence: 11 of 16
Confining Pressure: 4 psi
Nom. Max. Deviator Stress: 10 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	59.431	53.273	6.1582	9.6725	8.6703	1.0022	0.0048687	0.086818	9986.7	0.031947
97	59.431	53.275	6.1565	9.6725	8.6705	1.002	0.0048607	0.086674	10004	0.032031
98	59.543	53.312	6.2319	9.6908	8.6765	1.0142	0.004856	0.08659	10020	0.032354
99	59.545	53.431	6.1146	9.6911	8.6959	0.99515	0.0047892	0.0854	10183	0.032075
100	59.272	53.079	6.1933	9.6466	8.6386	1.008	0.0048354	0.086224	10019	0.032286
AVG	59.445	53.274	6.1709	9.6747	8.6704	1.0043	0.004842	0.086341	10042	0.032139
SD	0.10006	0.11324	0.039416	0.016284	0.01843	0.006415	2.86e-05	0.00050999	71.15	0.00015513

Sequence: 12 of 16
Confining Pressure: 2 psi
Nom. Max. Deviator Stress: 2 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	12.095	10.869	1.2254	1.9684	1.769	0.19944	0.0012549	0.022376	7905.5	-0.01752
97	12.478	11.216	1.2623	2.0309	1.8254	0.20544	0.0012987	0.023157	7882.8	-0.018182
98	12.363	11.142	1.2204	2.0121	1.8134	0.19862	0.0012915	0.02303	7874.3	-0.017978
99	12.554	11.411	1.1433	2.0431	1.8571	0.18607	0.0013044	0.02326	7983.8	-0.018317
100	12.708	11.449	1.2589	2.0682	1.8634	0.20489	0.0013201	0.02354	7915.8	-0.018054
AVG	12.439	11.217	1.2221	2.0245	1.8257	0.19889	0.0012939	0.023073	7912.5	-0.01801
SD	0.20568	0.20875	0.042891	0.033476	0.033974	0.0069806	2.1679e-05	0.00038657	38.703	0.00027083

KLEINFELDER
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Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% MDD at OMC	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.8 pcf at 12.2% Moisture		

RM TEST

Results Data

Sequence: 13 of 16
Confining Pressure: 2 psi
Nom. Max. Deviator Stress: 4 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	24.164	21.663	2.5009	3.9327	3.5257	0.40703	0.001942	0.034629	10181	-0.01232
97	24.046	21.589	2.4573	3.9136	3.5137	0.39993	0.0018915	0.033728	10418	-0.01226
98	24.276	21.898	2.3785	3.951	3.5639	0.38711	0.0019216	0.034266	10401	-0.012618
99	24.197	21.782	2.4154	3.9381	3.545	0.39311	0.0019482	0.03474	10204	-0.012431
100	24.467	22.052	2.4154	3.9821	3.589	0.39311	0.0019163	0.03417	10503	-0.01226
AVG	24.23	21.797	2.4335	3.9435	3.5474	0.39606	0.0019239	0.034307	10341	-0.012378
SD	0.13964	0.16518	0.041923	0.022727	0.026883	0.006823	2.0159e-05	0.00035948	126.35	0.00013545

Sequence: 14 of 16
Confining Pressure: 2 psi
Nom. Max. Deviator Stress: 6 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	36.179	32.534	3.6456	5.8882	5.2949	0.59333	0.003125	0.055724	9502	-0.0055308
97	36.255	32.725	3.53	5.9005	5.326	0.57451	0.0031813	0.056728	9388.7	-0.0056227
98	35.485	31.805	3.6808	5.7753	5.1762	0.59905	0.0031565	0.056286	9196.4	-0.0054194
99	36.369	32.649	3.7193	5.9191	5.3137	0.60533	0.0031971	0.05701	9320.7	-0.0051726
100	36.059	32.379	3.6791	5.8686	5.2698	0.59878	0.0031871	0.056831	9272.8	-0.005463
AVG	36.069	32.418	3.651	5.8703	5.2761	0.5942	0.0031694	0.056516	9336.1	-0.0054417
SD	0.30891	0.32824	0.06485	0.050276	0.053422	0.010555	2.5921e-05	0.00046221	103.97	0.00015105

KLEINFELDER Bright People. Right Solutions.	Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
	Boring Number: State 39041(04)	Tester: SS	Checker: SYW
	Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
	Test Number: 95% MDD at OMC	Preparation: AASHTO T307	Elevation: N/A
	Description: Sandy Lean Clay - AASHTO A-6(7)		
	Remarks: Remolded Specimen Dry Density 110.8 pcf at 12.2% Moisture		

RM TEST

Results Data

Sequence: 15 of 16
Confining Pressure: 2 psi
Nom. Max. Deviator Stress: 8 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	48.086	43.329	4.7568	7.8261	7.0519	0.77418	0.0040795	0.072744	9694.1	0.0016973
97	47.821	42.866	4.9546	7.783	6.9766	0.80637	0.0040474	0.072171	9666.7	0.001928
98	48.559	43.599	4.9596	7.903	7.0958	0.80719	0.0040837	0.07282	9744.3	0.0015537
99	48.213	43.327	4.8859	7.8468	7.0516	0.79519	0.0040985	0.073083	9648.8	0.0012907
100	48.443	43.597	4.8457	7.8842	7.0955	0.78864	0.0040998	0.073107	9705.6	0.0011471
AVG	48.224	43.344	4.8805	7.8486	7.0543	0.79431	0.0040818	0.072785	9691.9	0.0015234
SD	0.2613	0.26744	0.075228	0.042527	0.043527	0.012243	1.8968e-05	0.00033823	32.969	0.0002795

Sequence: 16 of 16
Confining Pressure: 2 psi
Nom. Max. Deviator Stress: 10 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	59.346	50.229	9.1162	9.6586	8.1749	1.4837	0.0045169	0.080543	10150	0.023646
97	59.614	53.431	6.1831	9.7022	8.6959	1.0063	0.0052385	0.093412	9309.2	0.010173
98	59.77	53.625	6.1446	9.7276	8.7276	1	0.0052658	0.093897	9294.8	0.010248
99	59.382	53.238	6.1446	9.6646	8.6645	1	0.0050551	0.090141	9612.2	0.010444
100	60.038	53.893	6.1446	9.7712	8.7712	1	0.0052863	0.094264	9305	0.010053
AVG	59.63	52.883	6.7466	9.7048	8.6068	1.098	0.0050725	0.090451	9534.2	0.012913
SD	0.25621	1.3445	1.1849	0.041699	0.21882	0.19284	0.00028971	0.0051661	330.28	0.0053682

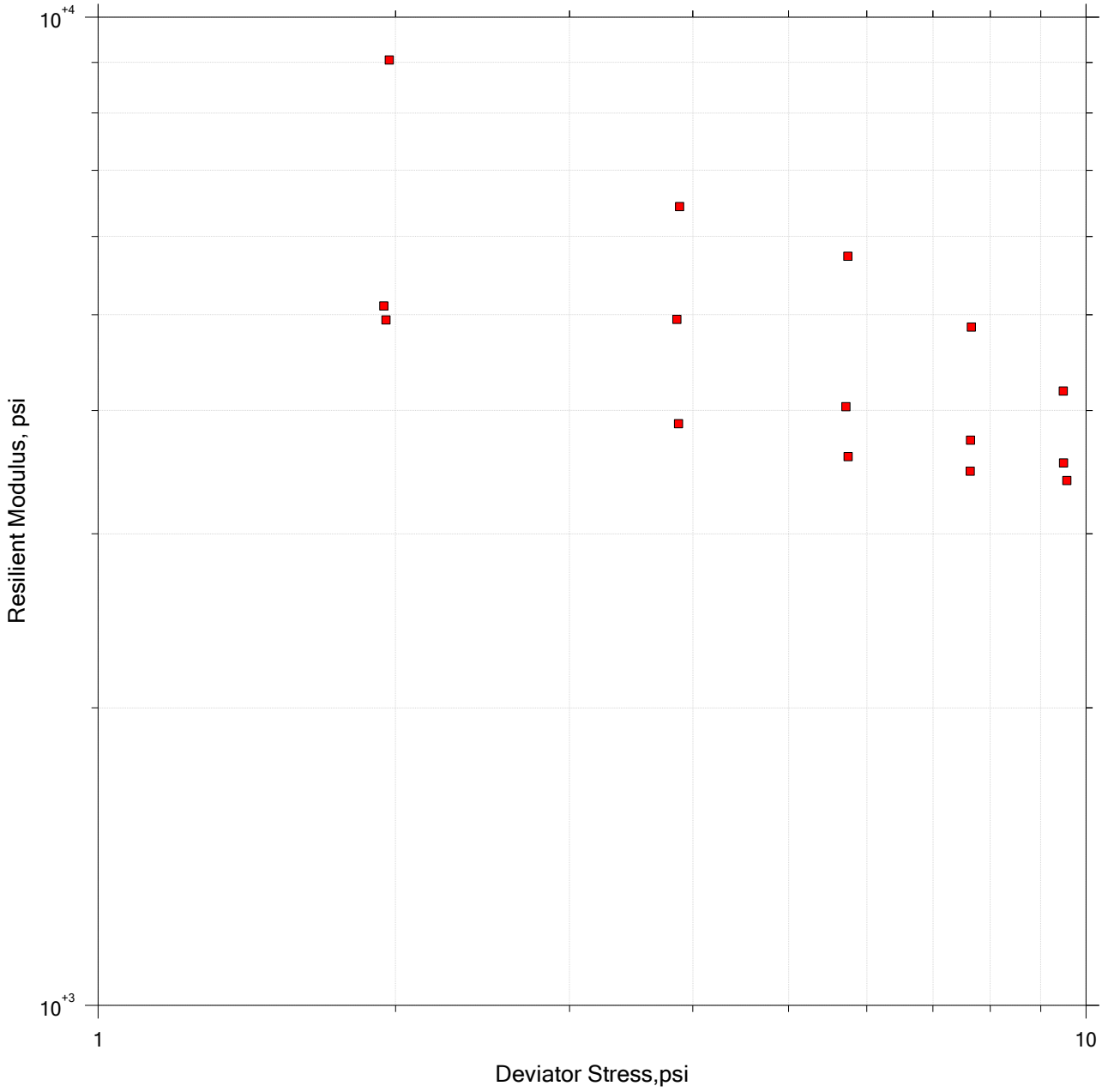
KLEINFELDER
Bright People. Right Solutions.

Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% MDD at OMC	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.8 pcf at 12.2% Moisture		

RM TEST

Summary Data

$Mr = 7595.2 * Sd^{-0.318}$ r = -0.67384



KLEINFELDER Bright People. Right Solutions.	Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
	Boring Number: State 39041(04)	Tester: SS	Checker: SYW
	Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
	Test Number: 95% on Wet Side	Preparation: AASHTO T307	Elevation: N/A
	Description: Sandy Lean Clay - AASHTO A-6(7)		
	Remarks: Remolded Specimen Dry Density 110.1 pcf at 15.5% Moisture		

RM TEST

Summary Data

Confining Stress S3 psi	Nom. Max. Deviator Stress psi	Mean Deviator Stress psi	Std. Dev. Deviator Stress psi	Mean Bulk Stress psi	Mean Resilient Strain %	Std. Dev. Resilient Strain %	Mean Resilient Modulus psi	Std. Dev. Resilient Modulus psi
5.936	2.000	1.971	0.0235	19.78	0.02	0.00	9053.5	104.47
5.978	4.000	3.879	0.0322	21.81	0.05	0.00	6431.6	52.834
6.010	6.000	5.739	0.0134	23.77	0.09	0.00	5729.4	18.340
5.969	8.000	7.657	0.0430	25.56	0.14	0.00	4856.3	52.156
5.935	10.00	9.487	0.0431	27.29	0.20	0.00	4183.8	7.1550
3.960	2.000	1.946	0.0183	13.83	0.03	0.00	5104.4	33.533
3.983	4.000	3.854	0.0210	15.80	0.07	0.00	4946.4	56.818
3.934	6.000	5.715	0.0385	17.52	0.13	0.00	4035.3	18.681
3.939	8.000	7.642	0.0314	19.46	0.18	0.00	3731.1	15.205
3.909	10.00	9.489	0.0200	21.22	0.24	0.00	3538.4	14.094
1.927	2.000	1.955	0.0172	7.738	0.04	0.00	4939.6	320.45
1.948	4.000	3.868	0.0200	9.712	0.09	0.00	3877.4	11.601
1.955	6.000	5.744	0.0216	11.61	0.14	0.00	3591.4	13.650
1.957	8.000	7.637	0.0230	13.51	0.20	0.00	3471.9	12.626
1.941	10.00	9.564	0.0238	15.39	0.25	0.00	3397.7	4.2936

KLEINFELDER
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Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% on Wet Side	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.1 pcf at 15.5% Moisture		

RM TEST

Results Data

Sequence: 1 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 4 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
496	23.83	21.472	2.3586	3.8757	3.4921	0.38359	0.0027563	0.048931	7136.7	0.31976
497	23.755	21.282	2.4726	3.8634	3.4613	0.40213	0.0027148	0.048194	7181.9	0.31993
498	23.675	21.202	2.4726	3.8503	3.4482	0.40213	0.0027054	0.048027	7179.7	0.32051
499	23.943	21.47	2.4726	3.8939	3.4918	0.40213	0.0027105	0.048119	7256.6	0.32049
500	24.194	21.701	2.4928	3.9348	3.5294	0.40541	0.0027673	0.049126	7184.4	0.31932
AVG	23.879	21.426	2.4538	3.8836	3.4845	0.39908	0.0027308	0.048479	7187.9	0.32
SD	0.18052	0.17361	0.048242	0.029359	0.028235	0.0078459	2.5668e-05	0.00045568	38.641	0.00045246

Sequence: 2 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 2 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	12.09	10.988	1.1016	1.9662	1.7871	0.17917	0.001102	0.019564	9134.4	0.30068
97	12.324	11.104	1.2207	2.0044	1.8059	0.19852	0.0011378	0.020199	8940.6	0.30042
98	12.246	11.065	1.1804	1.9916	1.7996	0.19198	0.0011168	0.019826	9077	0.30035
99	11.936	10.871	1.0648	1.9411	1.768	0.17317	0.0011157	0.019807	8926.2	0.3001
100	12.013	10.757	1.2558	1.9537	1.7494	0.20424	0.0010724	0.019037	9189.6	0.30021
AVG	12.122	10.957	1.1647	1.9714	1.782	0.18942	0.0011089	0.019687	9053.5	0.30035
SD	0.14423	0.12785	0.071618	0.023457	0.020792	0.011648	2.1562e-05	0.00038278	104.47	0.00019891

KLEINFELDER
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Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% on Wet Side	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.1 pcf at 15.5% Moisture		

RM TEST

Results Data

Sequence: 3 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 4 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	24.151	21.665	2.486	3.9277	3.5234	0.40432	0.0030521	0.054182	6502.9	0.30363
97	23.995	21.549	2.4458	3.9024	3.5046	0.39778	0.0030483	0.054115	6476.3	0.30362
98	23.649	21.088	2.5615	3.8462	3.4296	0.41658	0.0030407	0.05398	6353.6	0.30304
99	23.646	21.163	2.4827	3.8457	3.4419	0.40377	0.0030264	0.053726	6406.4	0.30375
100	23.802	21.512	2.2899	3.871	3.4986	0.37242	0.0030702	0.054503	6419.1	0.30364
AVG	23.849	21.395	2.4532	3.8786	3.4796	0.39897	0.0030475	0.054101	6431.6	0.30354
SD	0.19768	0.22712	0.089864	0.03215	0.036938	0.014615	1.434e-05	0.00025458	52.834	0.00025261

Sequence: 4 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 6 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	35.323	31.728	3.5956	5.7448	5.16	0.58476	0.0050805	0.090191	5721.2	0.32432
97	35.244	31.572	3.6726	5.732	5.1347	0.5973	0.0050495	0.089641	5728.1	0.32499
98	35.206	31.533	3.6726	5.7257	5.1284	0.5973	0.0050595	0.089819	5709.7	0.32514
99	35.437	31.728	3.7095	5.7633	5.16	0.6033	0.0050428	0.089522	5764	0.32549
100	35.243	31.531	3.7112	5.7317	5.1281	0.60357	0.0050466	0.089589	5724	0.32499
AVG	35.291	31.618	3.6723	5.7395	5.1422	0.59725	0.0050557	0.089752	5729.4	0.32499
SD	0.082639	0.090383	0.041925	0.01344	0.014699	0.0068186	1.3557e-05	0.00024067	18.34	0.00038189

KLEINFELDER
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Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% on Wet Side	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.1 pcf at 15.5% Moisture		

RM TEST

Results Data

Sequence: 5 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 8 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	46.886	41.98	4.9062	7.6253	6.8274	0.79792	0.0079674	0.14144	4827	0.3834
97	46.891	41.941	4.9498	7.6262	6.8211	0.80501	0.0079803	0.14167	4814.8	0.38353
98	46.819	42.02	4.799	7.6144	6.8339	0.78048	0.0079999	0.14202	4812	0.38228
99	47.438	42.402	5.0353	7.715	6.8961	0.81892	0.0079618	0.14134	4879	0.38384
100	47.364	42.402	4.9616	7.703	6.8961	0.80693	0.0078497	0.13935	4948.7	0.3834
AVG	47.08	42.149	4.9304	7.6568	6.8549	0.80185	0.0079518	0.14116	4856.3	0.38329
SD	0.26448	0.20813	0.077735	0.043013	0.03385	0.012642	5.2736e-05	0.00093621	52.156	0.00052894

Sequence: 6 of 16
Confining Pressure: 6 psi
Nom. Max. Deviator Stress: 10 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	57.993	51.929	6.0644	9.4317	8.4455	0.98628	0.011345	0.20141	4193.2	0.51159
97	58.163	52.006	6.1566	9.4593	8.458	1.0013	0.011421	0.20275	4171.6	0.51173
98	58.238	52.039	6.1985	9.4716	8.4635	1.0081	0.0114	0.20238	4181.9	0.51172
99	58.587	52.43	6.1566	9.5282	8.527	1.0013	0.01147	0.20363	4187.6	0.51163
100	58.699	52.505	6.1935	9.5465	8.5392	1.0073	0.011495	0.20407	4184.6	0.51199
AVG	58.336	52.182	6.1539	9.4875	8.4866	1.0008	0.011426	0.20285	4183.8	0.51173
SD	0.2652	0.23727	0.04814	0.043132	0.038589	0.0078293	5.2756e-05	0.00093655	7.155	0.00013786

KLEINFELDER Bright People. Right Solutions.	Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
	Boring Number: State 39041(04)	Tester: SS	Checker: SYW
	Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
	Test Number: 95% on Wet Side	Preparation: AASHTO T307	Elevation: N/A
	Description: Sandy Lean Clay - AASHTO A-6(7)		
	Remarks: Remolded Specimen Dry Density 110.1 pcf at 15.5% Moisture		

RM TEST

Results Data

Sequence: 7 of 16
Confining Pressure: 4 psi
Nom. Max. Deviator Stress: 2 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	12.083	10.869	1.2138	1.9651	1.7677	0.19741	0.0019517	0.034647	5102	0.37989
97	11.89	10.64	1.2507	1.9338	1.7304	0.2034	0.0019206	0.034096	5075	0.38
98	11.85	10.638	1.2121	1.9272	1.7301	0.19713	0.0019025	0.033775	5122.4	0.37994
99	11.887	10.676	1.2104	1.9332	1.7364	0.19686	0.0019311	0.034282	5064.9	0.37944
100	12.121	10.873	1.249	1.9714	1.7683	0.20313	0.0019311	0.034282	5157.9	0.37981
AVG	11.966	10.739	1.2272	1.9461	1.7466	0.19958	0.0019274	0.034217	5104.4	0.37982
SD	0.11254	0.10845	0.018511	0.018304	0.017638	0.0030106	1.6004e-05	0.00028412	33.533	0.00019976

Sequence: 8 of 16
Confining Pressure: 4 psi
Nom. Max. Deviator Stress: 4 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	23.569	21.128	2.4406	3.8331	3.4362	0.39693	0.0039517	0.070153	4898.1	0.39321
97	23.758	21.395	2.3635	3.8639	3.4795	0.38439	0.0039122	0.069451	5010	0.39319
98	23.755	21.277	2.4775	3.8634	3.4604	0.40293	0.0039995	0.071001	4873.8	0.39304
99	23.872	21.393	2.4792	3.8825	3.4793	0.4032	0.0039098	0.069408	5012.8	0.39298
100	23.525	21.048	2.4775	3.826	3.4231	0.40293	0.0039055	0.069333	4937.2	0.39311
AVG	23.696	21.248	2.4477	3.8538	3.4557	0.39808	0.0039357	0.069869	4946.4	0.39311
SD	0.12939	0.1399	0.044499	0.021043	0.022752	0.0072371	3.5962e-05	0.00063842	56.818	8.8213e-05

KLEINFELDER
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Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% on Wet Side	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.1 pcf at 15.5% Moisture		

RM TEST

Results Data

Sequence: 9 of 16
Confining Pressure: 4 psi
Nom. Max. Deviator Stress: 6 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	35.127	31.377	3.7496	5.7129	5.103	0.60982	0.0071525	0.12697	4018.9	0.40826
97	35.092	31.419	3.6725	5.7071	5.1099	0.59728	0.0071496	0.12692	4025.9	0.40785
98	35.221	31.573	3.6474	5.7281	5.1349	0.5932	0.0071538	0.127	4043.3	0.40773
99	35.499	31.843	3.6558	5.7734	5.1788	0.59457	0.0071706	0.1273	4068.3	0.40787
100	34.763	30.993	3.7698	5.6537	5.0406	0.6131	0.0070632	0.12539	4020	0.40788
AVG	35.14	31.441	3.699	5.715	5.1135	0.60159	0.0071379	0.12672	4035.3	0.40792
SD	0.2366	0.27718	0.050595	0.038479	0.045079	0.0082285	3.809e-05	0.0006762	18.681	0.0001792

Sequence: 10 of 16
Confining Pressure: 4 psi
Nom. Max. Deviator Stress: 8 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	46.626	41.745	4.881	7.5831	6.7892	0.79382	0.010325	0.18329	3704	0.43734
97	47.052	42.136	4.9162	7.6523	6.8528	0.79954	0.010339	0.18355	3733.5	0.43734
98	47.166	42.248	4.9179	7.6708	6.871	0.79982	0.010329	0.18337	3747.2	0.43838
99	46.97	41.976	4.9933	7.6389	6.8269	0.81208	0.010316	0.18314	3727.7	0.43833
100	47.126	42.171	4.9547	7.6643	6.8585	0.80581	0.010321	0.18322	3743.2	0.43819
AVG	46.988	42.055	4.9326	7.6419	6.8397	0.80222	0.010326	0.18331	3731.1	0.43791
SD	0.19283	0.17852	0.038266	0.03136	0.029034	0.0062234	7.8197e-06	0.00013882	15.205	0.00047578

KLEINFELDER
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Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% on Wet Side	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.1 pcf at 15.5% Moisture		

RM TEST

Results Data

Sequence: 11 of 16
Confining Pressure: 4 psi
Nom. Max. Deviator Stress: 10 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	58.467	52.274	6.1933	9.5089	8.5016	1.0073	0.013508	0.2398	3545.2	0.51766
97	58.506	52.351	6.1548	9.5151	8.5142	1.001	0.013505	0.23974	3551.4	0.51786
98	58.196	51.771	6.4246	9.4647	8.4198	1.0449	0.013509	0.23981	3511	0.51812
99	58.313	52.271	6.0425	9.4838	8.5011	0.98272	0.013519	0.24	3542.1	0.518
100	58.238	52.118	6.1196	9.4715	8.4763	0.99526	0.013479	0.23929	3542.3	0.51862
AVG	58.344	52.157	6.187	9.4888	8.4826	1.0062	0.013504	0.23973	3538.4	0.51805
SD	0.12298	0.20719	0.12882	0.020002	0.033697	0.02095	1.3317e-05	0.00023641	14.094	0.00032362

Sequence: 12 of 16
Confining Pressure: 2 psi
Nom. Max. Deviator Stress: 2 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	12.165	11.027	1.1382	1.9784	1.7933	0.18512	0.0020991	0.037263	4812.6	0.41557
97	12.049	10.874	1.1751	1.9596	1.7685	0.19111	0.0020819	0.036958	4785.2	0.4153
98	12.083	10.368	1.7148	1.9651	1.6862	0.27889	0.0017026	0.030225	5578.9	0.4209
99	11.853	10.68	1.1734	1.9277	1.7369	0.19084	0.002047	0.03634	4779.6	0.41542
100	11.969	10.797	1.1717	1.9466	1.756	0.19057	0.0020861	0.037034	4741.6	0.41509
AVG	12.024	10.749	1.2747	1.9555	1.7482	0.20731	0.0020033	0.035564	4939.6	0.41646
SD	0.106	0.22138	0.22049	0.01724	0.036005	0.035859	0.00015136	0.0026871	320.45	0.0022249

KLEINFELDER
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Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% on Wet Side	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.1 pcf at 15.5% Moisture		

RM TEST

Results Data

Sequence: 13 of 16
Confining Pressure: 2 psi
Nom. Max. Deviator Stress: 4 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	23.879	21.473	2.4053	3.8835	3.4923	0.39119	0.0050739	0.090074	3877.2	0.42419
97	23.644	21.202	2.4422	3.8454	3.4482	0.39718	0.0050276	0.089253	3863.4	0.42418
98	23.953	21.472	2.4807	3.8955	3.4921	0.40345	0.0050524	0.089693	3893.3	0.42424
99	23.8	21.318	2.4824	3.8707	3.467	0.40373	0.0050515	0.089677	3866.1	0.42393
100	23.647	21.316	2.3316	3.8459	3.4667	0.3792	0.0050238	0.089186	3887.1	0.42392
AVG	23.785	21.356	2.4284	3.8682	3.4733	0.39495	0.0050459	0.089577	3877.4	0.42409
SD	0.12316	0.10394	0.05613	0.020029	0.016905	0.0091286	1.8314e-05	0.00032512	11.601	0.00013495

Sequence: 14 of 16
Confining Pressure: 2 psi
Nom. Max. Deviator Stress: 6 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	35.48	31.764	3.716	5.7704	5.166	0.60435	0.0081185	0.14412	3584.4	0.44047
97	35.324	31.801	3.5232	5.745	5.172	0.573	0.008067	0.14321	3611.5	0.44051
98	35.132	31.416	3.716	5.7137	5.1093	0.60435	0.0080442	0.1428	3577.8	0.44146
99	35.205	31.53	3.6757	5.7256	5.1278	0.59781	0.0080699	0.14326	3579.4	0.44103
100	35.437	31.687	3.7495	5.7633	5.1535	0.6098	0.0080556	0.14301	3603.7	0.44124
AVG	35.316	31.64	3.6761	5.7436	5.1457	0.59786	0.008071	0.14328	3591.4	0.44094
SD	0.13254	0.14571	0.079917	0.021556	0.023697	0.012997	2.544e-05	0.00045162	13.65	0.00039292

KLEINFELDER
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Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
Boring Number: State 39041(04)	Tester: SS	Checker: SYW
Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
Test Number: 95% on Wet Side	Preparation: AASHTO T307	Elevation: N/A
Description: Sandy Lean Clay - AASHTO A-6(7)		
Remarks: Remolded Specimen Dry Density 110.1 pcf at 15.5% Moisture		

RM TEST

Results Data

Sequence: 15 of 16
Confining Pressure: 2 psi
Nom. Max. Deviator Stress: 8 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	47.082	42.288	4.7937	7.6572	6.8776	0.77962	0.011136	0.19769	3478.9	0.46614
97	47.043	42.132	4.911	7.6509	6.8522	0.7987	0.011089	0.19685	3480.8	0.46671
98	46.695	41.787	4.9076	7.5942	6.7961	0.79815	0.011106	0.19717	3446.8	0.4664
99	47.042	42.171	4.8708	7.6506	6.8585	0.79216	0.011114	0.1973	3476.1	0.46659
100	46.926	41.941	4.9847	7.6318	6.8211	0.81069	0.011052	0.1962	3476.5	0.46713
AVG	46.958	42.064	4.8936	7.637	6.8411	0.79587	0.0111	0.19704	3471.9	0.4666
SD	0.1414	0.17783	0.062149	0.022997	0.028921	0.010108	2.8085e-05	0.00049857	12.626	0.00033205

Sequence: 16 of 16
Confining Pressure: 2 psi
Nom. Max. Deviator Stress: 10 psi

Cycle	Applied Maximum Deviator Load lb	Applied Cyclic Deviator Load lb	Applied Contact Deviator Load lb	Applied Maximum Deviator Stress psi	Applied Cyclic Deviator Stress psi	Applied Contact Deviator Stress psi	Recoverable Deformation in	Resilient Strain %	Resilient Modulus psi	Permanent Strain %
96	58.96	52.737	6.2233	9.589	8.5768	1.0121	0.014208	0.25223	3400.4	0.53141
97	58.73	52.583	6.1479	9.5516	8.5518	0.99987	0.014169	0.25153	3399.9	0.53148
98	58.804	52.621	6.1831	9.5636	8.558	1.0056	0.014187	0.25185	3398.1	0.53167
99	58.571	52.388	6.1831	9.5257	8.5202	1.0056	0.014161	0.25139	3389.3	0.53207
100	58.957	52.814	6.1429	9.5884	8.5894	0.99905	0.014228	0.25258	3400.7	0.53199
AVG	58.805	52.628	6.1761	9.5637	8.5592	1.0044	0.01419	0.25192	3397.7	0.53173
SD	0.14647	0.14561	0.029077	0.023822	0.023682	0.004729	2.4866e-05	0.00044144	4.2936	0.00026579

KLEINFELDER Bright People. Right Solutions.	Project Name: Hinderliter On-Call	Location: Guymon, Oklahoma	Project Number: 25004253.001
	Boring Number: State 39041(04)	Tester: SS	Checker: SYW
	Sample Number: HGE-595 1.0	Test Date: 2/20/2026	Depth: N/A
	Test Number: 95% on Wet Side	Preparation: AASHTO T307	Elevation: N/A
	Description: Sandy Lean Clay - AASHTO A-6(7)		
	Remarks: Remolded Specimen Dry Density 110.1 pcf at 15.5% Moisture		

Laboratory Analytical Report

ENVIRONMENTAL TESTING, INC.
4619 N. Santa Fe Ave
Oklahoma City, OK 73118
405.488.2400 Phone
405.488.2404 Fax
www.etilab.com

11 February 2026

Mr. Mark Hinderliter

Hinderliter Geotechnical Engineering
4071 NW 3rd Street
Oklahoma City, OK 73107

WO: E6B0155
RE: CEC-26-05

Enclosed are the results of analyses for samples received by the laboratory on 2/9/2026. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Russell Britten

President

Original (P)

E6B0155

ENVIRONMENTAL TESTING, INC.

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Oklahoma City, OK 73118
405.488.2400 Phone
405.488.2404 Fax
www.etilab.com

Hinderliter Geotechnical Engineering	Project: CEC-26-05	
4071 NW 3rd Street	Project Number: [none]	**Reported:**
Oklahoma City, OK 73107	Project Manager: Mr. Mark Hinderliter	02/11/26 11:59

B-3, S-2 (3.5'-5')

E6B0155-01 (Solid) - Sampled: 02/06/26 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Qualifiers
Volatile Organic Compounds by EPA Method 8021									
Benzene	<0.024	0.024	mg/Kg	0.956	EOB0233	WM	02/11/26 01:26	EPA 8021B 1996	
Toluene	<0.024	0.024	mg/Kg	0.956	EOB0233	WM	02/11/26 01:26	EPA 8021B 1996	
Ethylbenzene	<0.024	0.024	mg/Kg	0.956	EOB0233	WM	02/11/26 01:26	EPA 8021B 1996	
Xylenes (total)	<0.072	0.072	mg/Kg	0.956	EOB0233	WM	02/11/26 01:26	EPA 8021B 1996	
Surrogate: a,a,a-Trifluorotoluene		*84 %*		*45.4-152*	*EOB0233*	WM	*02/11/26 01:26*	*EPA 8021B 1996*	
Surrogate: 4-Bromofluorobenzene		*85 %*		*41.7-151*	*EOB0233*	WM	*02/11/26 01:26*	*EPA 8021B 1996*	
Diesel Range Hydrocarbons by OK 8000/8100M									
Diesel Range Organics (C10-C28)	<40.0	40.0	mg/Kg	1	EOB0183	BMG	02/10/26 15:46	OK DEQ DRO 1997	
Surrogate: Nonacosane		*106 %*		*70-130*	*EOB0183*	BMG	*02/10/26 15:46*	*OK DEQ DRO 1997*	
Soxhlet Extraction	-	-	N/A	1	EOB0183	FJM	02/09/26 14:00	OK DEQ DRO 1997	

Environmental Testing, Inc.

Russell Britten, President

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Hinderliter Geotechnical Engineering	Project: CEC-26-05	
4071 NW 3rd Street	Project Number: [none]	**Reported:**
Oklahoma City, OK 73107	Project Manager: Mr. Mark Hinderliter	02/11/26 11:59

QUALITY CONTROL

Volatile Organic Compounds by EPA Method 8021
Environmental Testing, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifiers
Batch EOB0233 - EPA 5035 Soil GC										
Blank (EOB0233-BLK1)				**Prepared & Analyzed: 02/10/26**						
Benzene	<0.025	0.025	mg/Kg							
Toluene	<0.025	0.025	mg/Kg							
Ethylbenzene	<0.025	0.025	mg/Kg							
Xylenes (total)	<0.075	0.075	mg/Kg							
Surrogate: a,a,a-Trifluorotoluene	*0.137*		mg/Kg	*0.1500*		*92*	*45.4-152*			
Surrogate: 4-Bromofluorobenzene	*0.130*		mg/Kg	*0.1500*		*87*	*41.7-151*			
LCS (EOB0233-BS1)				**Prepared & Analyzed: 02/10/26**						
Benzene	0.538	0.025	mg/Kg	0.4970		108	63.8-138			
Toluene	0.503	0.025	mg/Kg	0.4970		101	80.9-135			
Ethylbenzene	0.510	0.025	mg/Kg	0.4970		103	75.1-130			
Xylenes (total)	1.53	0.075	mg/Kg	1.491		103	81-125			
Surrogate: a,a,a-Trifluorotoluene	*0.147*		mg/Kg	*0.1491*		*99*	*45.4-152*			
Surrogate: 4-Bromofluorobenzene	*0.143*		mg/Kg	*0.1491*		*96*	*41.7-151*			
Matrix Spike (EOB0233-MS1)		**Source: E6B0088-01RE1**		**Prepared & Analyzed: 02/10/26**						
Benzene	0.510	0.024	mg/Kg	0.4785	0.002	106	52.3-133			
Toluene	0.504	0.024	mg/Kg	0.4785	ND	105	61.1-130			
Ethylbenzene	0.490	0.024	mg/Kg	0.4785	0.012	100	54.2-129			
Xylenes (total)	1.47	0.072	mg/Kg	1.435	0.032	100	56.8-128			
Surrogate: a,a,a-Trifluorotoluene	*0.141*		mg/Kg	*0.1435*		*98*	*45.4-152*			
Surrogate: 4-Bromofluorobenzene	*0.126*		mg/Kg	*0.1435*		*88*	*41.7-151*			
Matrix Spike Dup (EOB0233-MSD1)		**Source: E6B0088-01RE1**		**Prepared & Analyzed: 02/10/26**						
Benzene	0.522	0.024	mg/Kg	0.4826	0.002	108	52.3-133	2	20	
Toluene	0.522	0.024	mg/Kg	0.4826	ND	108	61.1-130	4	20	
Ethylbenzene	0.525	0.024	mg/Kg	0.4826	0.012	106	54.2-129	7	20	
Xylenes (total)	1.57	0.072	mg/Kg	1.448	0.032	106	56.8-128	6	20	
Surrogate: a,a,a-Trifluorotoluene	*0.141*		mg/Kg	*0.1448*		*97*	*45.4-152*			
Surrogate: 4-Bromofluorobenzene	*0.127*		mg/Kg	*0.1448*		*88*	*41.7-151*			

Environmental Testing, Inc.

Russell Britten, President

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Hinderliter Geotechnical Engineering	Project: CEC-26-05	
4071 NW 3rd Street	Project Number: [none]	**Reported:**
Oklahoma City, OK 73107	Project Manager: Mr. Mark Hinderliter	02/11/26 11:59

QUALITY CONTROL

Diesel Range Hydrocarbons by OK 8000/8100M
Environmental Testing, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifiers
Batch EOB0183 - EPA 3540C										
Blank (EOB0183-BLK1)				**Prepared: 02/09/26 Analyzed: 02/10/26**						
Diesel Range Organics (C10-C28)	<40.0	40.0	mg/Kg							
Soxhlet Extraction	Completed		N/A							
Surrogate: Nonacosane	*10.7*		mg/Kg	*10.08*		*106*	*70-130*			
Blank (EOB0183-BLK2)				**Prepared: 02/09/26 Analyzed: 02/10/26**						
Diesel Range Organics (C10-C28)	<40.0	40.0	mg/Kg							
Soxhlet Extraction	Completed		N/A							
Surrogate: Nonacosane	*10.5*		mg/Kg	*10.08*		*105*	*70-130*			
LCS (EOB0183-BS1)				**Prepared: 02/09/26 Analyzed: 02/10/26**						
Diesel Range Organics (C10-C28)	163	40.0	mg/Kg	200.0		81	80-120			
Soxhlet Extraction	Completed		N/A							
Surrogate: Nonacosane	*12.4*		mg/Kg	*10.08*		*123*	*70-130*			
Matrix Spike (EOB0183-MS1)		**Source: E6B0148-06**		**Prepared: 02/09/26 Analyzed: 02/10/26**						
Diesel Range Organics (C10-C28)	159	40.0	mg/Kg	200.0	7.42	76	70-130			
Soxhlet Extraction	Completed		N/A		0.00					
Surrogate: Nonacosane	*11.7*		mg/Kg	*10.08*		*116*	*70-130*			
Matrix Spike Dup (EOB0183-MSD1)		**Source: E6B0148-06**		**Prepared: 02/09/26 Analyzed: 02/10/26**						
Diesel Range Organics (C10-C28)	172	40.0	mg/Kg	200.0	7.42	82	70-130	8	20	
Soxhlet Extraction	Completed		N/A		0.00					
Surrogate: Nonacosane	*13.9*		mg/Kg	*10.08*		*137*	*70-130*			*S-05*

Environmental Testing, Inc.

Russell Britten, President

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Hinderliter Geotechnical Engineering	Project: CEC-26-05	
4071 NW 3rd Street	Project Number: [none]	**Reported:**
Oklahoma City, OK 73107	Project Manager: Mr. Mark Hinderliter	02/11/26 11:59

Certifications

Code	Description	Number	Expires
NELAP/OK	NELAP Accredited (ODEQ)	2026-090	12/31/2026
TCEQ	Texas Accedited (TCEQ)	TX-C25-00090	03/31/2026

Qualifiers and Definitions

Abbreviation	Description
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
x	Non-Certified analyte
NA	Not Applicable

Qualifier	Description
COM	Completed
S-05	The surrogate recovery was outside of laboratory control limits.

ENVIRONMENTAL TESTING, INC.

Sample Receipt Form: E6B0155

E 6 B 0 1 5 5

Environmental Testing, Inc.

Printed: 2/9/2026 10:38:58

Client:	**Hinderliter Geotechnical Engineering**	**Project Manager:**	**Mr. Mark Hinderliter**
Project:	**CEC-26-05**	**Project Number:**	**[none]**

Report To:
Hinderliter Geotechnical Engineering
Mr. Mark Hinderliter
4071 NW 3rd Street
Oklahoma City, OK 73107

Phone: (405) 942-4090

Invoice To:
Hinderliter Geotechnical Engineering
Mr. Mark Hinderliter
4071 NW 3rd Street
Oklahoma City, OK 73107

Phone: (405) 942-4090

Date Due:	02/11/26 17:00 (2 day TAT)		
Received By:	Jordan Anderson	Date Received:	02/09/26 10:23
Logged In By:	Jordan Anderson	Date Logged In:	02/09/26 10:35

Samples Received at:		3.6°C			
Custody seals	No	Received on ice	Yes	Sufficient sample	Yes
Containers intact	Yes	Sample or temp blank frozen	No		
COC/Labels agree	Yes	Headspace in VOA vials	No		
Preservation confirmed	No	Correct containers	Yes		

Notes:

Preservation Confirmation

Container ID	Container Type	pH	Date/Time	Lot #

Preservation Confirmed By _____ Date _____

Samples Labeled By _____ Date 2/9/26

Reviewed By _____ Date _____

wko_EOC_wpres_rev16.0.rpt

E6B0155

ETI E6B0155

HINDERLITER GEOTECHNICAL ENGINEERING — CHAIN OF CUSTODY SHEET

Project: CEC-26-05 | Ordered By: Mark | Date: 2/9/26

Priority: Low Normal (High) Details: sampled 2/6/26 RUSH

Sample ID (Boring, Depth, Etc)	FOR EACH TEST, FIRST BOX IS ORDERED, SECOND BOX IS TEST COMPLETED. H2O	Classify	UC	Proctor	CBR	Sulfate	Resistivity	Notes
1 B-3, S-2 3.5'-5'								BTEX/TPH Diesel

2/9/26

Reciever's Signature: 2/9/26 10:23 on ice 3-6°C ET000130

Deliverer's Signature:

APPENDIX C

WINPAS 12 FLEX DESIGN INPUTS
WINPAS 12 RIGID DESIGN INPUTS

WinPAS

Pavement Thickness Design According to

1993 AASHTO Guide for Design of Pavements Structures

American Concrete Pavement Association

Flexible Design Inputs

Project Name: STATE JOB NO. 39041(04) TEXAS COUNTY
Route: ODOT MAINTENANCE FACILITY
Location: GUYMON, OKLAHOMA
Owner/Agency: OKLAHOMA DEPARTMENT OF TRANSPORTATION
Design Engineer: CEC CORPORATION

Flexible Pavement Design/Evaluation

Structural Number	3.37		**Subgrade Resilient Modulus**	5,700.00	**psi**
Total Flexible ESALs	682,444		**Initial Serviceability**	4.20	
Reliability	85.00	**percent**	**Terminal Serviceability**	2.00	
Overall Standard Deviation	0.45				

Layer Pavement Design/Evaluation

Layer Material	Layer Coefficient	Drainage Coefficient	Layer Thickness	Layer SN
Asphalt Cement Concrete	0.42	1.00	2.00	0.84
Asphalt Cement Concrete	0.42	1.00	2.00	0.84
Asphalt Cement Concrete	0.40	0.90	3.00	1.08
Crushed Stone Base	0.12	0.85	6.00	0.61
			ΣSN	3.37

WinPAS

Pavement Thickness Design According to

1993 AASHTO Guide for Design of Pavements Structures

American Concrete Pavement Association

Rigid Design Inputs

Project Name: STATE JOB NO. 39041(04) TEXAS COUNTY
Route: ODOT MAINTENANCE FACILITY
Location: GUYMON, OKLAHOMA
Owner/Agency: OKLAHOMA DEPARTMENT OF TRANSPORTATION
Design Engineer: CEC CORPORATION

Rigid Pavement Design/Evaluation

Concrete Thickness	6.75	**inches**	**Load Transfer Coefficient**	3.00	
Total Rigid ESALs	982,686		**Modulus of Subgrade Reaction**	309	**psi/in.**
Reliability	85.00	**percent**	**Drainage Coefficient**	0.75	
Overall Standard Deviation	0.35		**Initial Serviceability**	4.20	
Flexural Strength	700	**psi**	**Terminal Serviceability**	2.00	
Modulus of Elasticity	4,700,000	**psi**			

Modulus of Subgrade Reaction (k-value) Determination

Resilient Modulus of the Subgrade	5,700.0	**psi**
Unadjusted Modulus of Subgrade Reaction	309	**psi/in**
Depth to Rigid Foundation	0.00	**feet**
Loss of Support Value (0,1,2,3)	0.0	

Modulus of Subgrade Reaction	309	**psi/in.**

APPENDIX D

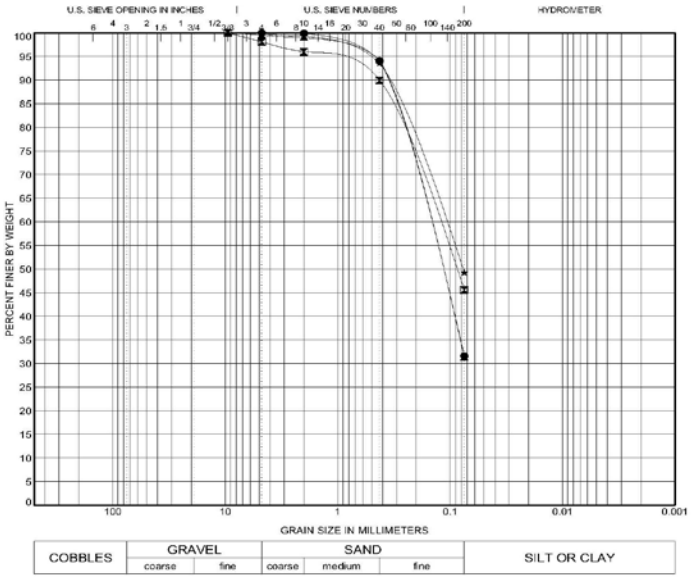
GENERAL NOTES ON SOIL CLASSIFICATION
GENERAL NOTES ON ROCK CLASSIFICATION

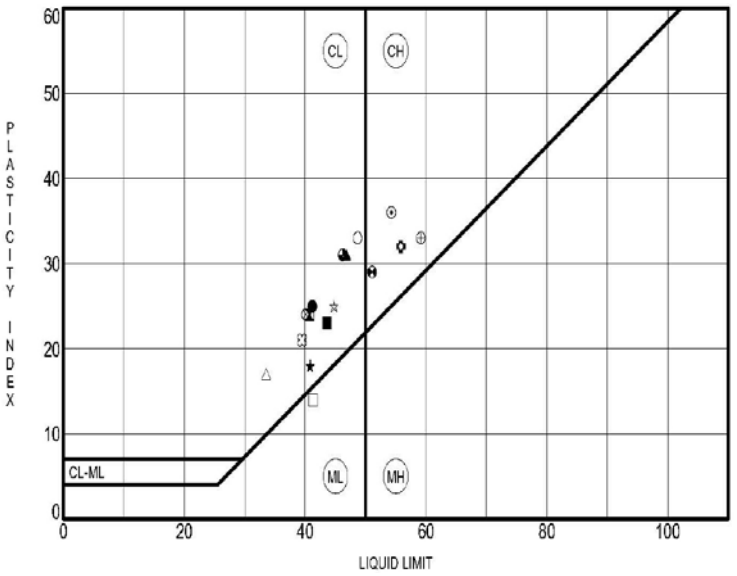
HINDERLITER
GEOTECHNICAL ENGINEERING

GENERAL NOTES ON SOIL CLASSIFICATION

Hinderliter Geotechnical Engineering classifies soils in accordance with the Unified Soil Classification System (USCS). In some cases, the AASHTO Classification System is also used.

USCS soil classifications are derived from soil grain size and material plasticity. Materials with more than 50 percent passing the No. 200 U.S. Sieve (aperture opening = 0.075 mm) are considered to be fine-grained soils (silts or clays). Materials with less than 50 percent passing the No. 200 sieve are considered to be coarse-grained soils (sands, gravels, etc). Coarse-grained soils are classified by the USCS System by plotting the Grain Size in Millimeters vs. Percent Finer by Weight. Depending on the grain size, the materials are classified as cobbles, gravel, sand, or silt / clay. Material plasticity is determined from the Liquid Limit test and the Plastic Limit test. The Liquid Limit (LL) of a soil is the point where, when mixed with water, a pat of soil transitions from a liquid state to a plastic state. The Plastic Limit (PL) is the point where the soil transitions from a plastic state to a solid state. The difference between the LL and PL is known as the Plasticity Index (PI).





Most naturally-occuring materials have some portion of fine-grained and coarse-grained materials. Modifiers are used to describe the relative percentage of minor-occurring materials in the following fashion:

Fine-Grained Soil Modifiers			Coarse-Grained Soil Modifiers	
Modifier	Percentage of Dry Weight		Modifier	Percentage of Dry Weight
Trace	< 15		Trace	< 5
With	15 - 29		With	5-12
Sandy, Gravelly, etc.	> 30		Silty, Clayey, etc.	> 12

The consistency of fine-grained soils and the relative density of coarse-grained soils is generally included on the boring logs as part of the material description. Consistency and relative density are generally defined as follows:

Fine-Grained Soils			Coarse-Grained Soils	
Unconfined Compressive Strength, Qu, psf	Consistency	Standard Penetration Test, N, blows / foot	Standard Penetration Test, N, blows / foot	Relative Density
< 500	Very Soft	< 2	0 - 3	Very Loose
500 - 1000	Soft	2 - 4	4 - 9	Loose
1000 - 2000	Medium	5 - 7	10 - 29	Medium Dense
2000 - 4000	Stiff	8 - 15	30 - 49	Dense
4000 - 8000	Very Stiff	16 - 30	50+	Very Dense
8000+	Hard	30+		

HGE
Hinderliter Geotechnical Engineering, LLC
4071 NW 3rd Street
Oklahoma City, OK 73107
Telephone: (405) 942-4090
Fax: (405) 942-4057

General Notes on Soil Classification

HINDERLITER GEOTECHNICAL ENGINEERING

GENERAL NOTES ON ROCK CLASSIFICATION

Sedimentary Rock Classification

Sedimentary rock is classified based on material composition, weathering and hardness. Depending on how samples are obtained, a measure of the degree of jointing can also be determined. Sedimentary rock is composed of clay, silt and/or sand sized particles and is often named based on the soil classification of the deposited material, such as sandstone or siltstone. Limestone, chert and shale are also sedimentary rock types.

Shale

In general, the reddish shales of western and central Oklahoma or Texas tend to be highly weathered and soft. They are composed of cemented clays but frequently contain lesser amounts of silt, sand or caliche. In eastern Oklahoma, Texas and Missouri the shales tend to be dark in color, usually gray, less weathered and harder.

Sandstone

Reddish sandstones in western and central Oklahoma and Texas tend to be highly weathered and soft. These sandstones often have relatively high clay or silt contents. Sandstones in eastern Oklahoma, Texas and Missouri tend to be brownish and hard. Sandstones may be described according to degree of cementation; well-cemented, cemented or poorly-cemented.

Limestone

Generally light colored and hard, limestone reacts readily with hydrochloric acid due to its calcium carbonate content.

Sedimentary rock can be evaluated by sampling and testing or by in-situ evaluation methods. Frequently, soft sedimentary rock is evaluated using penetration testing methods such as the split-barrel (SPT) method or through use of a Texas Cone (TC). Hard rock is often cored and evaluated by cutting or scratching, or by unconfined compressive strength measurements. In-situ methods, such as the Pressuremeter, can also be used.

SPT "N" Values (50 blows / 6" or less)	Hardness	Texas Cone "T" Values (100 blows / 6" or less)
50/6", 50/5"	Soft	100/3" or more
50/4", 50/3"	Moderately Hard	100/2", 100/1"
50/2" or less	Hard, often cored	100/1" or less

Sedimentary rock is generally cored in 5-foot or 10-foot increments or runs. Rock Core Recovery (R) is measured and expressed as a percentage of the total run. The Rock Quality Designation (RQD), defined as in-tact pieces of core 4 inches or more in length, is also measured and expressed as a percentage of the total core run.

RQD (%)	Empirical Quality
90-100	Excellent
75-90	Good
50-75	Fair
25-50	Poor
Below 25	Very Poor

Rock Core Hardness:

Soft - Can be broken by hand or carved with a knife.
Moderately Hard - Can be scratched with a penny.
Hard - Can be scratched with a knife.
Very Hard - Cannot be scratched with a knife.

Layering or Bedding:

Fissile - Splits along closely spaced planes 1/16" or less.
Thin Bedded - Beds 2 inches to 2 feet.
Thick Bedded - Beds 2 feet to 4 feet.
Massive - Beds greater than 4 feet.

Joints, Faults or Fractures:

Very Low Jointing - More than 6-1/2 feet between discontinuities.
Low Jointing - 2 feet to 6-1/2 feet.
Medium Jointing - 8 inches to 2 feet.
High Jointing - 2-1/2 inches to 8 inches.
Very High Jointing - Less than 2-1/2 inches.

HGE
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