

Laboratory Certification For
Geo Search Company

Lab ID: LCP-014

Issue date: May 30th, 2018

Expiry date: Nov 29th, 2018

This letter confirms the completion of inspection and certification for the Geo Search, which is located at House # 511, Street # 8, Kart-e-3, Kabul, Afghanistan. This laboratory should now be considered as **Certified for a period of 6-months** from the date of this letter. This laboratory should now be considered as certified for use by the US Army Corps of Engineers Transatlantic Afghanistan District (USACE TAA) and other clients, for all tests listed in Table 1 to Table 7, as attached to this letter. The following tests (**ASTM C123, ASTM C1252, ASTM C430, ASTM C232, and ASTM D5084**) are not permitted under this period of Certification. This certification will be included with records that are maintained at the ABA and USACE TAA Headquarters in Bagram Airbase, Afghanistan. Retaining the certification will require yearly inspections by the ABA. This certification is also contingent upon the following conditions:

- A. Continued employment of the below individual while without his oversight, the laboratory will require recertification:
 - a. Mohammad Reza Ahmadi the laboratory manager;
- B. If the calibration certificates of equipments expire or become invalid as per the relevant standard;
- C. If the laboratory is moved to a new location, it will require recertification; and
- D. If the laboratory fails to comply by the approved lab quality management plan, safety standards, and other criteria set forth in the most up-to-date ABA lab certification manual, the lab certification may be suspended.

For verification and good standing of this certification please check our online directory of laboratories at http://aba.af/lcp_directory.php. The inspection and certification process for the Geo Search adhered to procedures outlined by the Materials Testing Center (MTC), which is located at the Geotechnical and Structures Laboratory (GSL), U.S. Army Engineer Research and Development Center (ERDC) in Vicksburg, Mississippi, USA. The MTC is the USACE-authorized agency for certifying laboratories for use in quality control testing for USACE construction projects. To facilitate construction in Afghanistan, the USACE TAA has authorized the ABA to conduct laboratory certifications with strict adherence to MTC protocol. Qualifications of the authors for conducting these certifications include: 12 years of laboratory experience, 12 years of teaching classes on construction materials, and six years of teaching university-level construction classes.

Certified to perform 108 tests, as shown on attached sheets and summarized as:

Table 1:	20
Table 2:	17
Table 3:	21
Table 4:	3
Table 5:	14
Table 6:	6
Table 7:	27

Regards,

Mowdood Popal

President of Afghanistan Builders Association



Geo Search Certified Laboratory Tests

Table 1. List of Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D421	Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants
2	ASTM D422	Standard Test Method for Particle-Size Analysis of Soils
3	ASTM D698	Standard Test Method for Compaction Characteristics by Standard Effort
4	ASTM D854	Standard Test Method for Specific Gravity of Soils by Water Pycnometer
5	ASTM D1140	Standard Test Method for Amount of Material in Soils Finer than 75 mm (No. 200) Sieve
6	ASTM D1556	Standard Test Method for Density & Unit Weight of Soils in Place by Sand- Cone Method
7	ASTM D1557	Laboratory Compaction Characteristics of Soil Using Standard Effort
8	ASTM D1587	Thin-Walled Tube Sampling of Soils for Geotechnical Purpose
9	ASTM D1883	Standard Test Method for California Bearing Ratio (CBR) of Laboratory-Compacted Soils
10	ASTM D2166	Unconfined Compressive Strength of Cohesive Soil
11	ASTM D2216	Standard Test Method for Laboratory Determination of Water Content of Soil and Rock By Mass
12	ASTM D2487	Standard Practice for Classification of Soils for Engineering Purpose (Unified Soil Classification System)
13	ASTM D2488	Description and Identification of Soils (Visual-Manual Procedure)
14	ASTM D3282	Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Process
15	ASTM D4220	Practice for Preserving and Transporting Soil Samples
16	ASTM D4318	Standard Test Method for Liquid & Plastic Limits & Plasticity Index of Soils
17	ASTM D4718	Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
18	ASTM D4959	Determination of Water (Moisture) Content of Soil by Direct Heating
19	ASTM D6951	Use of the Dynamic Cone Penetration in Shallow Pavement Applications
20	ASTM D7263	Laboratory Determination of Density (Unit Weight) of Soil Specimens

Table 2. List of Aggregate (Fine and Course) Tests

No	Test Method	Test Procedure Title
1	ASTM C29	Standard Test Method for Bulk Density (Unit Weight) and Voids in Aggregate
2	ASTM C70	Standard Test Method for Surface Moisture in Fine Aggregate
3	ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
4	ASTM C117	Standard Test Method for Material Finer than 75 μm (No. 200) Sieve
5	ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption in Coarse Aggregate
6	ASTM C128	Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption in Fine Aggregate
7	ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and impact in the Los Angeles Machine
8	ASTM C136	Standard Test Method for Sieve Analysis of Aggregates
9	ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
10	ASTM C535	Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and impact in the Los Angeles Machine
11	ASTM D75	Standard Practice for Sampling Aggregate
12	ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
13	ASTM D4944	Field Determination of Water (Moisture) Content of Soil by the Calcium Carbide Gas Pressure Test
14	ASTM D5821	Standard Test Method for Determining Percentage of Fractured Particles in Coarse Aggregate
15	ASTM C40	Standard Test Method for Organic Impurities in Fine Aggregates for Concrete
16	ASTM C227	Standard Test Method for Potential Alkali Reactivity of Cement-Aggregate Combinations
17	ASTM C289	Standard Test Method for Potential Alkali-Silica Reactivity of Aggregates

Table 3. List of Cement, Grout, Mortar, & Concrete Tests

No	Test Method	Test Procedure Title
1	ASTM C31	Standard Practice for Making and Curing Test Specimens in the Field
2	ASTM C31M	On site Sampling, Making, Curing, Capping, and Compressive Strength of each Specimen
3	ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Specimens
4	ASTM C109	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars

No	Test Method	Test Procedure Title
5	ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
6	ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
7	ASTM C174	Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores
8	ASTM C185	Standard Test Method for Air Content of Hydraulic Cement Mortar
9	ASTM C187	Standard Test Method for Amount of Water Required for Normal Consistency of Hydraulic Cement paste
10	ASTM C188	Density of Hydraulic Cement
11	ASTM C191	Time Setting of hydraulic Cement by Vicat Needle
12	ASCTM C192	Standard Practice for Making and Curing Concrete Test Specimens
13	ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by Pressure Method
14	ASTM C451	Early Stiffening of Hydraulic Cement (Paste Method)
15	ASTM C470	Standard Specification for Molds for Forming Concrete Test Cylinders Vertically
16	ASTM C617	Standard Practice for Capping Cylindrical Concrete Specimens
17	ASTM C642	Standard Test Method for Density, Absorption, and Voids in Hardened Concrete
18	ASTM C805	Standard Test Method for Rebound Number of Hardened Concrete
19	ASTM C1019	Standard Test Method for Sampling and Testing Grout
20	ASTM C1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
21	ASTM C1437	Flow of Hydraulic Cement Mortar

Table 4. List of Bricks, Stone, & CMU's Tests

No	Test Method	Test Procedure Title
1	ASTM C97	Standard Test Method for Absorption and Bulk Specific Gravity of Dimension Stone
2	ASTM C140	Standard Practice for Sampling and Testing Concrete Masonry and Related Units
3	ASTM C1552	Standard Practice for Capping Concrete Masonry Units, Related Units and Masonry Prisms for Compression Testing

Table 5. List of Advanced Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D1194	Bearing Capacity of Soil for Static Load and Spread Footings
2	ASTM D1586	Penetration Test and Split-Barrel Sampling of Soils
3	ASTM D2434	Permeability of Granular Soils (Constant Head)

4	ASTM D2435	One-Dimensional Consolidation Properties of Soils Using Incremental Loading
5	ASTM D2573	Field Vane Shear Test in Cohesive Soil
6	ASTM D3080	Direct Shear Test of Soils Under Consolidated Drained Conditions
7	ASTM D4221	Dispersive Characteristics of Clay Soil by Double Hydrometer
8	ASTM D4546	One-Dimensional Swell or Settlement Potential of Cohesive Soil
9	ASTM D4647	Identification and Classification of Dispersive Clay Soil by the Pinhole Test
10	ASTM D4648	Laboratory Miniature Vane Shear Test for Saturated Fin-Grained Clayey Soil
11	ASTM D4829	Expansion Index of Soils
12	ASTM D5333	Measurement of Collapse Potential of Soils
13	ASTM D6572	Determining Dispersive Characteristics of Clayey Soils by the Crumb Test
14	ASTM G57	Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method

Table 6. List of Rocks Tests

No	Test Method	Test Procedure Title
1	ASTM D2113	Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation
2	ASTM D2938	Standard Test Method for Unconfined Compressive Strength of Intact Rock Core Specimens
3	ASTM D5079	Standard Practices for Preserving and Transporting Rock Core Samples
4	ASTM D5731	Standard Test Method for Determination of the Point Load Strength Index of Rock
5	ASTM D5873	Standard Test Method for Determination of Rock Hardness by Rebound Hammer Method
6	ASTM D6032	Standard Test Method for Determining Rock Quality Designation (RQD) or Rock Core

Table 7. List of Bitumen and Asphalt

No	Test Method	Test Procedure Title
1	ASTM D5/AASHTO T49	Penetration of Bituminous Materials
2	ASTM D36/AASHTO T53	Softening Point of Bitumen (Ring-and-Ball Apparatus)

3	ASTM D70/AASHTO T228	Density of Semi-Solid Bituminous Materials (Pycnometer Method)
4	ASTM D92/AASHTO T48	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
5	ASTM D113/AASHTO T51	Ductility of Bituminous Materials
6	ASTM D140/AASHTO T40	Sampling Bituminous Materials
7	ASTM D546	Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
8	ASTM D979	Sampling Bituminous Paving Mixtures
9	ASTM D2041/AASHTO T209	Theoretical Maximum Specific Gravity and Density of Bituminous Pavement Mixtures
10	ASTM D2172/AASHTO T164	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
11	ASTM D2489	Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
12	ASTM D2726	Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
13	ASTM D3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
14	ASTM D3549	Thickness or Height of Compacted Bituminous Paving Mixture Specimens
15	ASTM D5361	Sampling Compacted Bituminous Mixtures for Laboratory Testing
16	ASTM D5444	Mechanical Size Analysis of Extracted Aggregate
17	ASTM D6926	Preparation of Bituminous Specimens Using Marshall Apparatus
18	ASTM D6927	Marshall Stability and Flow of Bituminous Mixtures
19	AASHTO T79	Flash Point with Tag Open-Cup Apparatus for Use with Material Having a Flash Less Than 93.3°C (200°F)
20	AASHTO T230	Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures
21	AASHTO T275	Bulk Specific Gravity of Compacted Bituminous Mixture
22	ASTM D3549	Density and Thickness of Asphalt Core
23	AASHTO T44	Solubility of Bituminous Materials
24	AASHTO T55	Water in Petroleum Products and Bituminous Materials by Distillation
25	AASHTO T179 / AASHTO T240	Effect of Heat and Air on Asphalt Materials (Thin Film Oven Test)
26	AASHTO T201	Kinematic Viscosity of Asphalts (Bitumen)
27	AASHTO T102	Spot Test of Asphaltic Materials