The Afghanistan Engineering Support Program assembled this deliverable. It is an approved, official USAID document. Budget information contained herein is for illustrative purposes. All policy, personal, financial, and procurement sensitive information has been removed. Additional information on the report can be obtained from Firouz Rooyani, Tetra Tech Sr. VP International Operations, (703) 387-2151.

TETRA TECH

MEMORANDUM

To: [redacted]

From: [redacted]

Date: 26 October 2010

Re: **WO-A-0047 Faizabad Airport - Field Observation Report**

On August 23, 2010, Tetra Tech visited the Faizabad Airport construction site, to observe the status of building and runway construction, as directed by [redacted] (USAID-OIEE) and [redacted] (FAA). (A list of the key meeting attendees that day is presented in Attachment A.)

Buildings Report:

[redacted] RA (Tetra Tech Vertical Structures Sector Leader), was escorted to the new buildings by representatives from KNK Construction, the General Contractor for the Airport work. The buildings were found to be in an early state of construction. The buildings foundations and columns had been built, with the concrete work progressing on floor slabs and exterior walls. Wood support members for the Terminal building concrete roof formwork were in place, and placement of concrete was expected later that week. It was observed that the maintenance pit in the service garage had been omitted during floor construction. [redacted] was assured that this pit would be cut into the slab and formed up as per the construction documents. Also observed was a section of slab removed for Bathroom plumbing installation.

Drawing packages were presented after this building observation, and they were reviewed them for compliance with the as-built buildings. The buildings were found to be in compliance with the presented construction documents.

Runway Report:

[redacted] (Project Manager for the Contractor KNK Pvt Ltd. (KNK)), Engineer [redacted] (FKH Geo Expert Services (FKH) Quality Control (QC) Manager), and several other KNK and FKH engineers, surveyors and field laboratory technicians fully explained to Tetra Tech the testing procedures used and demonstrated their understanding of providing suitable and correct QC testing on the project. Copies of the project construction drawings and QC data were presented to Tetra Tech for review while on site. However, hard copies of the complete drawing set and QC data still needs to be obtained by Tetra Tech from KNK and FKH for a complete Tetra Tech review and perusal. As was observed at the Chaghcharan Regional Airport, both QC and Quality Assurance (QA) efforts are being performed by FKH (based in Kabul), which could appear to be a potential conflict of interest.

Following an on-site review of the above reference documents by Tetra Tech, the following comments are presented:

1) The QC engineering staff are performing the airport construction QC work in accordance with the REHABILITATION OF REGIONAL AIRPORTS PHASE 1 GENERAL SPECIFICATIONS document prepared by the Islamic Republic of Afghanistan Ministry of Transport Afghan Reconstruction and Development Services Procurement Unit, Asian Development Bank. The project was reported to have started in February 2009 and is planned to be finished in June 2011.

2) A typical airport runway design cross section for the subbase course, crushed base course, and asphalt surface course pavement thickness is depicted on the KNK design drawings. The design runway geometry follows:
    a. design subbase thickness is 300 mm from Sta 0+000 to Sta 0+500 (at both ends of the runway), and is 250 mm from Sta 0+500 to Sta 0+1500;
    b. design crushed base course thickness is 250 mm thick;
    c. design asphalt surface course (AC) wearing course thickness is 130 mm thick. (KNK reported no design frost depth for the area. However, the frost depth may be on the order of one (1) meter as reported at the Chaghcharan and Maimana Regional Airports. In which case the Faizabad Airport total runway thickness would be less than the actual frost depth in the area.)

3) For the airport apron and taxiway, the design concrete pavement thickness is 300 mm (concrete is to have a 28-day minimum compressive strength of 30 MPa), and the design aggregate base thickness is 250 mm. The drawing obtained for the terminal apron is a general layout plan arrangement drawing only and not a structural design sheet.

4) The on-site testing laboratory is clean and has the appropriate testing equipment. The on-site field laboratory personnel also have a complete set of the relevant project ASTM and AASHTO test procedures in the field laboratory for ready reference purposes.

5) Only the embankment fill material for the runway had been placed/compacted to the date of the Tetra Tech site visit, to a design 1-meter thick fill zone, however reportedly to thicknesses of 1.2 to 1.3 meters locally. The new runway slopes downgradient in the south-to-north direction, and runs parallel to the existing steel sheet runway.

6) No review was made by Tetra Tech of potential offsite drainage problems. The KNK Building Layout Plan and Site Development Plan, as obtained by Tetra Tech, do illustrate a proposed cross drainage feature (as well as a cable duct) below the proposed taxiway.

7) Two borrow sources, 10 kilometers and 13 kilometers distant, are presently being used for providing source materials for the runway construction, and suitable materials processing is being performed in close proximity to the airport site.

8) One field sand cone density test was performed on the embankment fill zone material. The test results were 98.7% compaction at 2.4% moisture content, indicating a satisfactory passing test result.