US Army Corps of Engineers
Philadelphia District

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Geotechnical Section, CENAP-EN-DG

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Site Visit Report

Date: Tuesday, Nov. 6, 2001

Project: Bushkill Creek Stream Restoration Project
Location: Palmer Township near Stockerton, PA
Time on Site: 800 to 1600
Purpose of Visit: Observe Geophysical Investigation
Contractor on Site: Science Applications International Corporation (SAIC)
Weather: sunny/mild Temp. 45/55 deg. F AM/PM

The Following was Noted:

SAIC personnel were on site prior to my arrival. Heather Recelli, the project manager, Shawn Eichelberger, the crew supervisor and Paul LuCot, the field support technician, were present on the site. There newest EI equipment that had to be sent back previously for repair was shipped to the site today. The older EI equipment was used to perform the first survey today and the second survey was conducted with the newer equipment that had been repaired. George Fields, the senior geophysicist from SAIC arrived later in the morning and assisted in the operations today.

The quarry pumps were scheduled to be turned off at 7 AM, however they were apparently shut off around 6 AM, since there was very little water in the stream by around 7 AM. The SAIC crew and I had to relocate fish from localized pools of shallow water to larger pools in order to protect them during the streambed dewatering and EI operations.

Two EI surveys were conducted today in the streambed. The first survey today extended from the bridge area and onto the southern bank of the stream near the area investigated yesterday. The second survey today was conducted from the bend in the steam (around half-way between SR 2017 and Route 33) to the area below the Route 33 overpass. The second survey was run entirely in the streambed.

I took around 3 to 4 hours to complete each survey each survey.

As soon as the second survey was completed around 3:30 PM, Heather notified the quarry to initiate the pumping again. The creek level started to rise within a half hour of her notification. The level was not restored by the time I left the site.

I performed a photo reconnaissance of the site using the digital camera.

Heather had reviewed the EI result from yesterday's survey last night, and presented the preliminary results to me today on her laptop computer. She still has to correct the data and filter out interferences, but the results did show the presence of variable subsurface conditions and potential sinkhole areas. She also has to integrate all of the EI data to get a good identification of the problem areas and identify their potential impacts.

Many visitors were present on the site today.

Brian Mulvenna USACE visited the site in the AM.

Local residents including Tony Martinelli were present.

Daniel Clark and Jason Davis of Michael Baker Jr., Inc. consultants for PADOT.

Sharon Hill from PADEP's mining office in Pottstown.

Earth Science's representatives that work for Hercules. Their attention was focused on the railroad bridge area sinkholes upstream of our study area.

PADOT representatives also visited the site today and were examining their bridge abutments.

Refer to the attached photographs for additional information.

These photographs were all taken while the Bushkill Creek was lowered by the temporary deactivation of the Hercules Quarry dewatering pumps.

Photographs

View looking northwest of the sinkhole area immediately west of the northern side of the SR 2017 bridge.

View looking north-northwest of the same area shown in the previous photograph.

View looking south towards the same area shown in the previous photos.

View looking north into the area immediately west of the area shown in the previous photographs. The previously placed concrete patch over the original smaller sinkhole is visible at the surface.

View looking into the sinkhole shown in the previous photograph.

View looking northeast at the northern bridge foundation. This is the failed foundation of the bridge. The footing is completely exposed…..this can be visualized better in the following 2 photographs.

View looking north-northwest towards the eastern end of the northern bridge abutment (that failed). Note the sinkhole to the right of the bridge.

View northwest of the exposed foundation of the north abutment of the bridge. The spread footing is located just above the shadow of the photographer's head.

View looking east from the east side of the bridge at the downstream side of the creek.

View looking southwest of the south end of the eastern side of the bridge from the streambed area. The area that was indicated in yesterday's photo as being a potential sinkhole development area is in the center of the photo, below the log sticking up from the streambed.

View looking west towards the northern end of the eastern side of the bridge. This photo shows the area immediately to the right of the previous photograph.

View looking west from the SR 2017 bridge looking down the streambed. The instrument box marks the beginning of the first EI survey line today, which extends towards the west from this area. The first survey line today extends down the streambed and onto the land behind the individual in green (note line has to be relatively straight).

View looking west toward the area shown in the previous photograph (EI wires were not installed in this area yet).

View looking west-northwest of the area shown in the previous photo. This photo shows the intersection of the 2 EI survey lines in the streambed area. The yellow wire shows the path of the first survey, where it extends onto the land at the left rear of the photograph. The white tape indicates the location of the second line, which was in the process of being installed. Note the straight white tape extends towards and below the Route 33 bridge, which can be seen to the right in the background.

This is a view of the sinkhole problem area at the railroad bridge west of Route 33. The photograph was taken looking towards the east from the embankment west of the railroad bridge. The bridge wing wall that moved out and failed was located to the right of the gentlemen in the upper-left of the photograph. The wall was partially removed and buried in the new fill and rock placed in this area to restore the surface. The surveyors work for Hercules and are checking benchmarks in the area. The dewatered streambed is not easy to see in the photo, but runs diagonally from the middle to upper-right corner of the photograph. The large elongate dark zone in the streambed is a very large sinkhole that has opened up in this area. This area is blown up in the following photograph.

Enlargement of the sinkhole in the streambed that is shown in the previous photograph southeast of the train bridge. A local resident Tony Marinelli told C. Sutphen that there are also a line of smaller sinkholes, lined up and further east of this sinkhole in a wooded area.