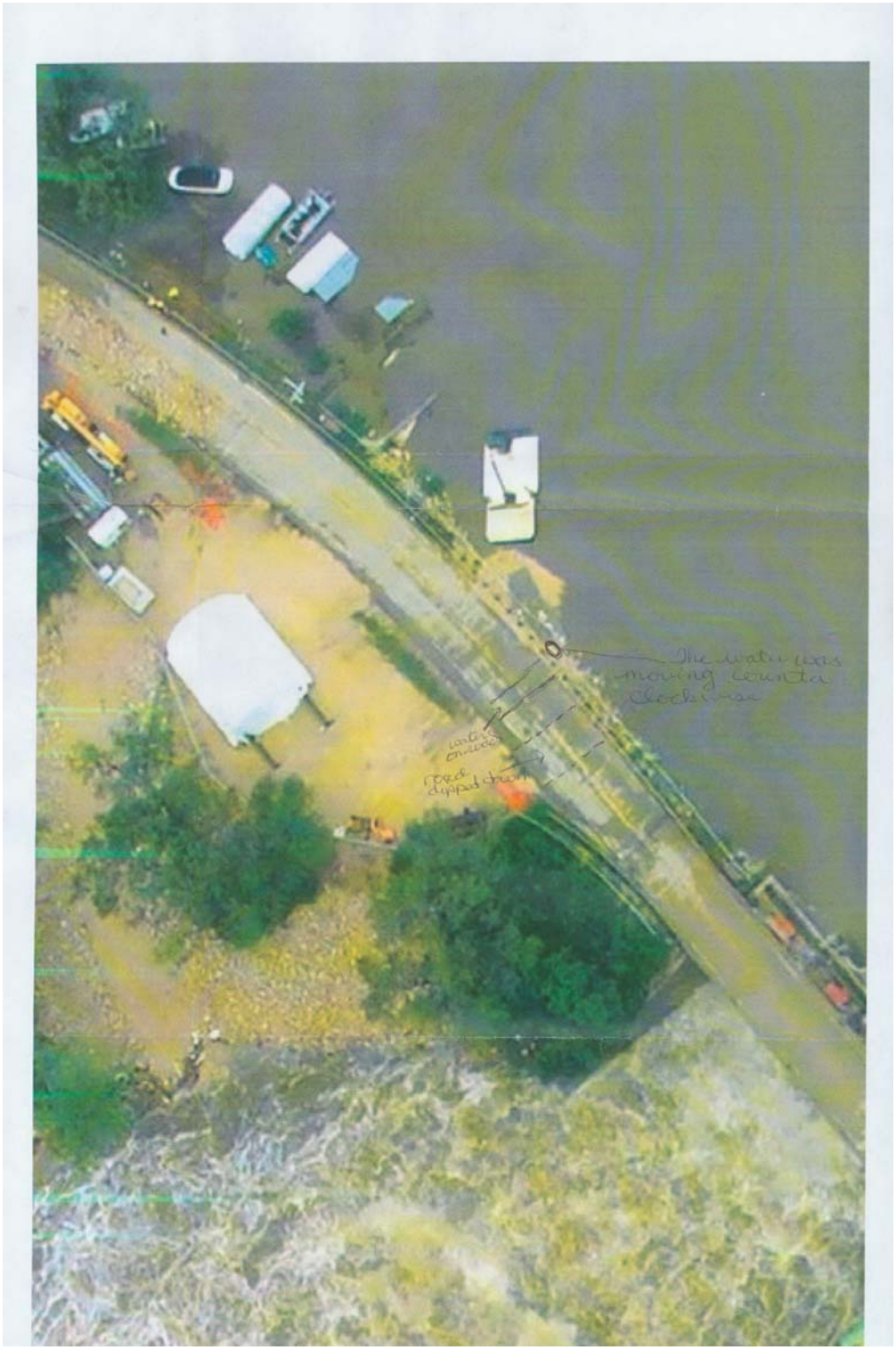
APPENDIX D

Sketches of Sinkholes, Whirlpools and Road Subsidence

Location of Whirlpools and Road Subsidence per Mr. A. Bardgett, Delaware County Engineer

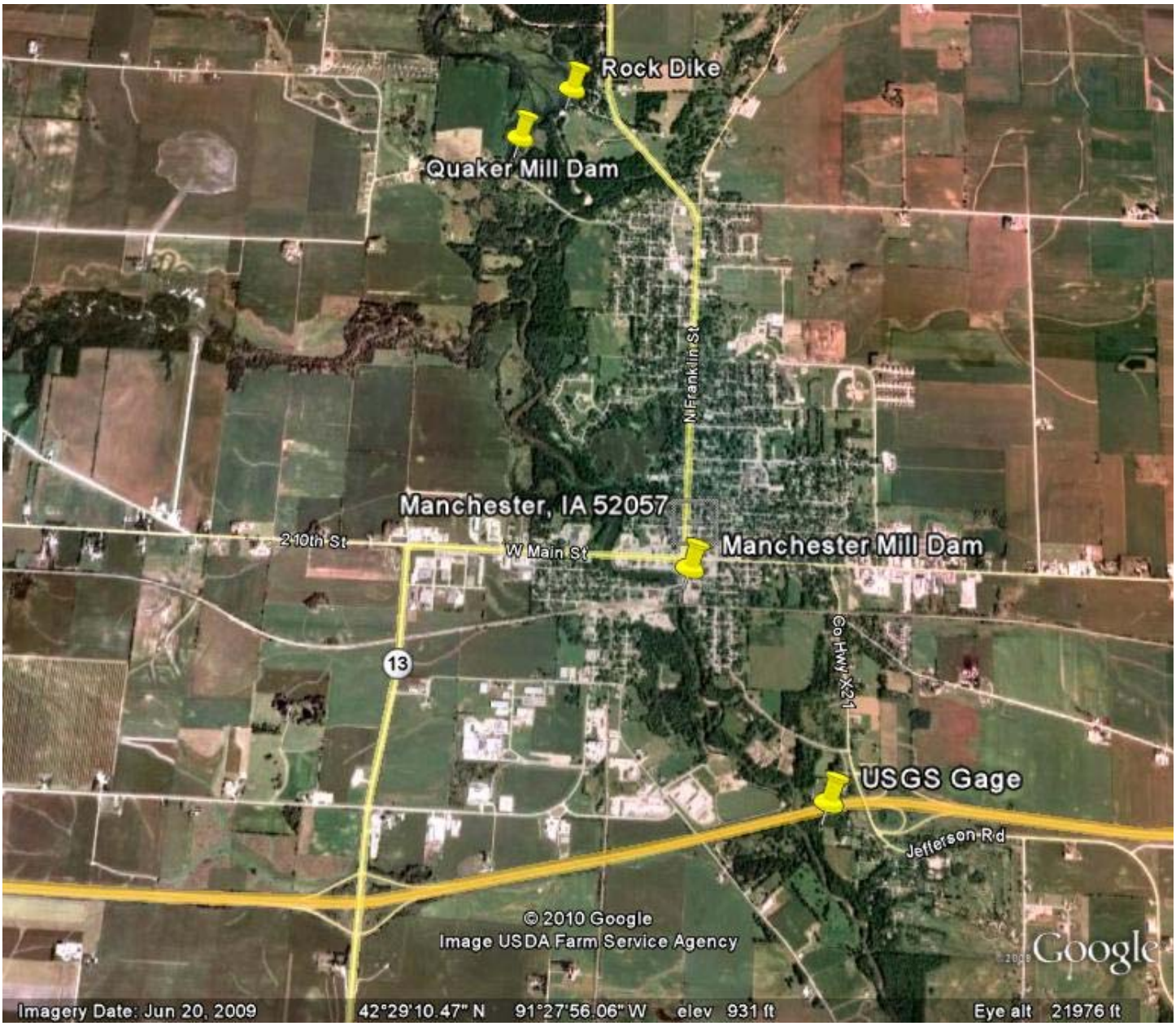


Locations of Whirlpool and road subsidence Per Mr. T. Gorman

Location of Whirlpools and location of cloudy discharge per Mr. D. Fink

APPENDIX E

Quaker Mill Dam – Lateral Rock Dike



Google Map of Manchester Iowa
Locations of the Quaker Mill Dam, Quaker Mill Rock Dike, Manchester Mill Dam
and the USGS Manchester River Gage

Quaker Mill Dam

Quaker Mill Rock Dike
July 23, 2010 7:30 AM

Rock Dike later on July 23, 2010

Quaker Mill Pond Rock Dike September 2010

APPENDIX F

Delhi Dam
Post Breach Photographs
(IPE)

Breach area from Left Abutment

Debris at spillway

Gates 1 and 2 as found during IPE Inspection
Note about 1 foot difference in height

Breach area from spillway bridge deck

Breach area as viewed from spillway bridge deck

Breach Area as viewed from spillway bridge deck

View of area upstream of dam

Culvert compromising the concrete cutoff wall in the left(north) abutment

Downstream side of left nonoverflow section
Location of soggy ground at base of wall and water squirting from cracks

Counterfort training wall and remnants of embankment concrete core wall

Counterfort training wall and remnant of embankment concrete core wall

Upstream side of left nonoverflow section

Debris in front of powerhouse intake trashrack section

Debris in front of Spillway Gate 2

Debris in front of Spillway Gate 3

Spillway Gate 3 Opening as found during IPE inspection

Sinkhole in the remnant of the right embankment

Embankment soils upstream of the concrete core wall

Counterfort endwall of spillway
Note: old bridge pier which was incorporated into the embankment in original construction

Southern end of breach area

Concrete core wall to sheet pile wall transition

Flow over sheet pile wall

Embankment soils downstream of concrete core wall

Parking area/berm soils

Breach area as viewed from right abutment
Note rock outcrop at toe of training wall