Minnesota Department of Transportation
Photogrammetric Unit
395 John Ireland Boulevard, MS 640
Saint Paul, MN 55155

2 January 2013

Eric Ratcliffe
STARR MT-1 Project Manager
Atkins Global
3901 Calverton Boulevard, Suite 400
Calverton, MD, 20705

RE: Certification of Minnesota LiDAR Quality
Minnesota River Valley LiDAR Project

Dear Mr. Ratcliffe:

Attached you will find a signed and sealed Certification Statement for LiDAR that was collected by the Minnesota Department of Natural Resources and its numerous partners. Due to the size of the State, a regional acquisition approach was selected. As part of the project planning process, we wanted to engage the county governments to be partners in this project. A decision was made to report accuracy on the county level as part of that engagement.

If you have any additional questions concerning the testing process, please contact me at 651.366.3457.

Sincerely,

Peter W. Jenkins, PLS, CFedS
Photogrammetric Unit Supervisor

Enclosures:
Certification Letter

cc: S. Jiwani
T. Loesch

Certification of Minnesota LiDAR Data Quality

Project Area: Minnesota River Valley

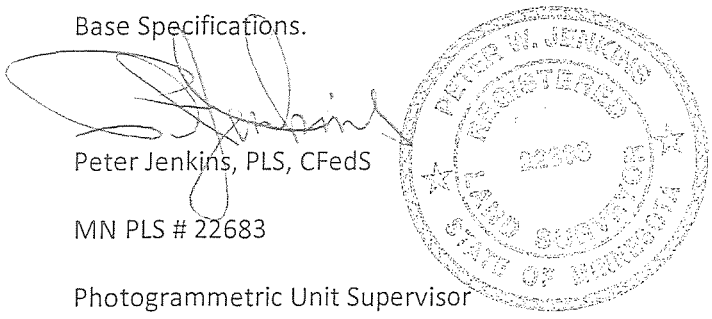
Counties covered: Brown, Chippewa, Cottonwood, Douglas, Faribault, Jackson, Kandiyohi, Lac Qui Parle, Le Sueur, Lincoln, Lyon, Martin, Murray, Nicollet, Nobles, Pipestone, Pope, Redwood, Renville, Rock, Sibley, Swift, Waseca, Watonwan and Yellow Medicine.

Date of acquisition: April 8 to May 9, 2010 & November 7 to 19, 2010

Horizontal Positional Accuracy: All these data products were acquired at 1700 meters above mean terrain (AMT) and have a horizontal accuracy of 0.40 meters, with a nominal point spacing of 1.0 meters.

Vertical Positional Accuracy: Accuracy of the dataset was verified by a second set of ground control points provided and tested by the State of Minnesota. The Consolidated Vertical Accuracy (CVA) of the TIN as tested by the State of Minnesota of all land cover categories covering the 5 land classes as defined by ASPRS and NDEP were used in this evaluation. The vertical RMSE, 95% Confidence Level and sample count per county as tested by the State of Minnesota is as follows: Brown 0.134m (RMSE), 0.262m (95%), 132; Chippewa 0.149m (RMSE), 0.291m (95%), 94; Cottonwood 0.097m (RMSE), 0.191m (95%), 187; Douglas 0.114m (RMSE), 0.224m (95%), 114; Faribault 0.112m (RMSE), 0.220m (95%), 111; Jackson 0.099m (RMSE), 0.195m (95%), 104; Kandiyohi 0.104m (RMSE), 0.204m (95%), 99; Lac Qui Parle 0.149m (RMSE), 0.293m (95%), 98; Le Sueur 0.140m (RMSE), 0.274m (95%), 100; Lincoln 0.141m (RMSE), 0.277m (95%), 102; Lyon 0.121m (RMSE), 0.237m (95%), 103; Martin 0.099m (RMSE), 0.194m (95%), 101; Murray 0.093m (RMSE), 0.182m (95%), 105; Nicollet 0.092m (RMSE), 0.180m (95%), 116; Nobles 0.099m (RMSE), 0.195m (95%), 107; Pipestone 0.102m (RMSE), 0.199m (95%), 104; Pope 0.092m (RMSE), 0.181m (95%), 109; Redwood 0.128m (RMSE), 0.251m (95%), 108; Renville 0.117m (RMSE), 0.228m (95%), 100; Rock 0.076m (RMSE), 0.149m (95%), 189; Sibley 0.101m (RMSE), 0.199m (95%), 101; Swift 0.144m (RMSE), 0.282m (95%), 108; Waseca 0.136m (RMSE), 0.267m (95%), 123; Watonwan 0.123m (RMSE), 0.241m (95%), 107 and Yellow Medicine 0.123m (RMSE), 0.241m (95%), 105.

This is to certify that the work summarized above was completed in accordance with sound and accepted surveying practices and meets the accuracy requirements in the USGS's Lidar Guidelines and Base Specifications.



Peter Jenkins, PLS, CFedS

MN PLS # 22683

Photogrammetric Unit Supervisor

Minnesota Department of Transportation