

QA Review Response

FOR

FY15 TOPO-BATHY LIDAR, ELWHA RIVER, WA

Prepared by:



TASK ORDER NUMBER: G15PD01145
USGS CONTRACT: G10PC00057

Prepared for:

U.S. Geological Survey (USGS)

On Behalf of:



Revision	Date	Approved	No. of Copies	Distributed to
0	2016-03-03	CL	1	USGS (Digital Copy)

TABLE OF CONTENTS

1. INTRODUCTION.....3

2. DEM ERRORS.....3

3. SWATH ERRORS3

4. LAS ERRORS3

5. MISSING DATA4

6. SPATIAL REFERENCE SYSTEM4

7. XML METADATA ERRORS4

8. VERTICAL ACCURACY ISSUES5

9. SWATH NOTE5

10. LAS NOTE5

11. TILED LAS AND DEM NOTE6

12. XML METADATA NOTE6

1. INTRODUCTION

Geomatics Data Solutions (GDS), Inc. was sub-contracted by Woolpert, Inc. to conduct a topo-bathy lidar survey of the Elwha River near Port Angeles, Washington as part of task order G15PD01145, under USGS contract G10PC00057. The scope of services included acquisition, processing and deliverables. Task order G15PD01145 also includes a topo lidar only QL2 survey of the river to be conducted in Spring 2016. The topo only QL2 survey is not discussed here and a separate report will be provided, once acquired.

This report explains issues noted in the USGS Quality Assessment Report dated 2016-01-21 and how these have been addressed.

2. DEM ERRORS

Issue: The DEM is not hydroflattened.

Response: This is not a requirement for this contract. No Action taken.

Issue: The DEM has not been clipped and bad data exists on the edge.

Response: We are unable to find an area where the DEM has not been clipped, or where bad edges exist. If a more exact location for this can be provided, the DEM will be corrected. No action taken.

3. SWATH ERRORS

Issue: 14 classes exist in swath

Response: All classes are necessary to provide as much information on the source of the bathy noise. Classes were provided and explained in the accompanying survey report, rather than moving all bathy noise to a single class. There may be benefit to the end user in seeing the individual classes. No action taken.

Issue: the MIN MAX X, Y, & Z in the header differs from the true MIN/MAX.

Response: this error occurred when the LAS 1.4 files were created. Headers have been fixed.

Issue: flightline 00330: red, green & blue values are not populated in point data.

Response: We are unable to color this flight line using the colorization technique used for the other lines. Since this was not a requirement for the project, no further action has been taken.

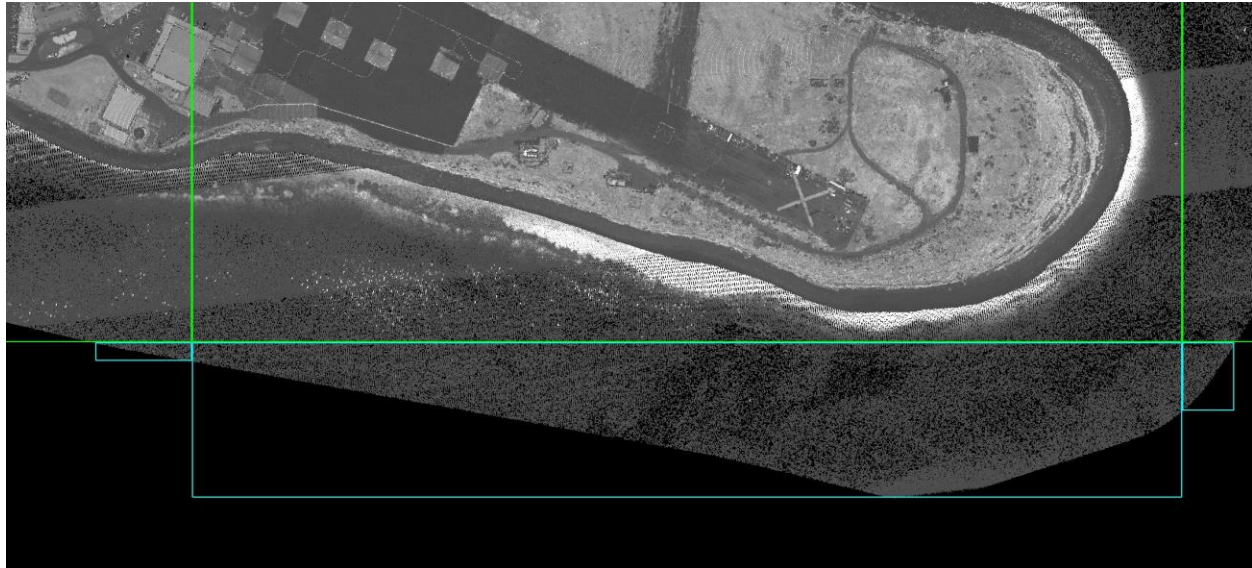
4. LAS ERRORS

Issue: tile 10UDU560242 is empty and = to 0.00 MB

Response: Tile redelivered

Issue: tiles 10UDU702310, 10UDU687310 & 10UDU695310: do not appear to be normalized to 16 bit.

Response: All data is collected by the sensor at 16-bit. Therefore no normalization was necessary. These blocks contain mostly bathy noise classes (lower three cyan colored blocks), therefore values do not stretch from 0 to 65535. However values do range from 0 to greater than 3000, which is much more than an 8-bit value. No action necessary; data is 16-bit.



Issue: tile 10UDU567257: blue values do not appear to be normalized to 16 bit.

Response: All data is collected by the sensor at 16-bit. Therefore no normalization was necessary. Blue values range from 256 to 30720, far exceeding 8-bit resolution. No action necessary; data is 16-bit.

Issue: tiles 10UDU575295 & 10UDU597332: red, green and blue values do not appear to be normalized to 16 bit.

Response: All data is collected by the sensor at 16-bit. Therefore no normalization was necessary. Values for 10UDU575295 are Red: 2304-28160, Green: 2304-24832, Blue: 2048-15872. No action necessary; data is 16-bit.

Issue: the MIN MAX X, Y, & Z in the header differs from the true MIN/MAX.

Response: This error occurred when the LAS 1.4 files were created. Headers have been fixed.

Issue: in all tiles, point count does not match actual number of points.

Response: This error occurred when the LAS 1.4 files were created. Headers have been fixed.

5. MISSING DATA

Issue: project boundary .shp and calibration points .shp missing

Response: ProjectBoundary.shp included in re-delivery with metadata file. There were no calibration points used within the Elwha survey area to correct the data. Calibration of the DragonEye sensor is explained in the report. Calibration Points over Scappoose Airport are included in the re-delivery in SHP format with metadata file.

6. SPATIAL REFERENCE SYSTEM

There was confusion between NAD 83 and NAD83 (2011). All data is required and is delivered in NAD83 (2011).

7. XML METADATA ERRORS

Issue: Wrong Projection Zone. Change UTM Zone 18 to UTM Zone 10.

Response: Corrected.

8. VERTICAL ACCURACY ISSUES

Issue: The task order requires 20 NVA and 5 VVA points for this project. 10 NVA and 4 VVA were delivered.

Response: The task required the use of NVA and VVA acquired during a previous contract. No action to be taken.

Issue: The <rawnva> reported in point cloud & project .xmls, the NVA of the DEM <vertaccv> reported in all applicable .xmls are the reported accuracy from the vendor taken from Accuracy Pass 2 using only 8 points for NVA. NGTOC documented vendor reported accuracies in the QA report from Pass 1 assessing 10 points.

Response: Both passes for accuracy are included in the report with a through description why 2 points were removed and only 8 points were suitable for checking. Results in report match those in the metadata. No action required.

9. SWATH NOTE

Issue: all flight lines: Legacy point count (0) does not match 1.4 point count.

Response: From presentations at ILMF our understanding is that the Legacy Point count should be 0. No action taken.

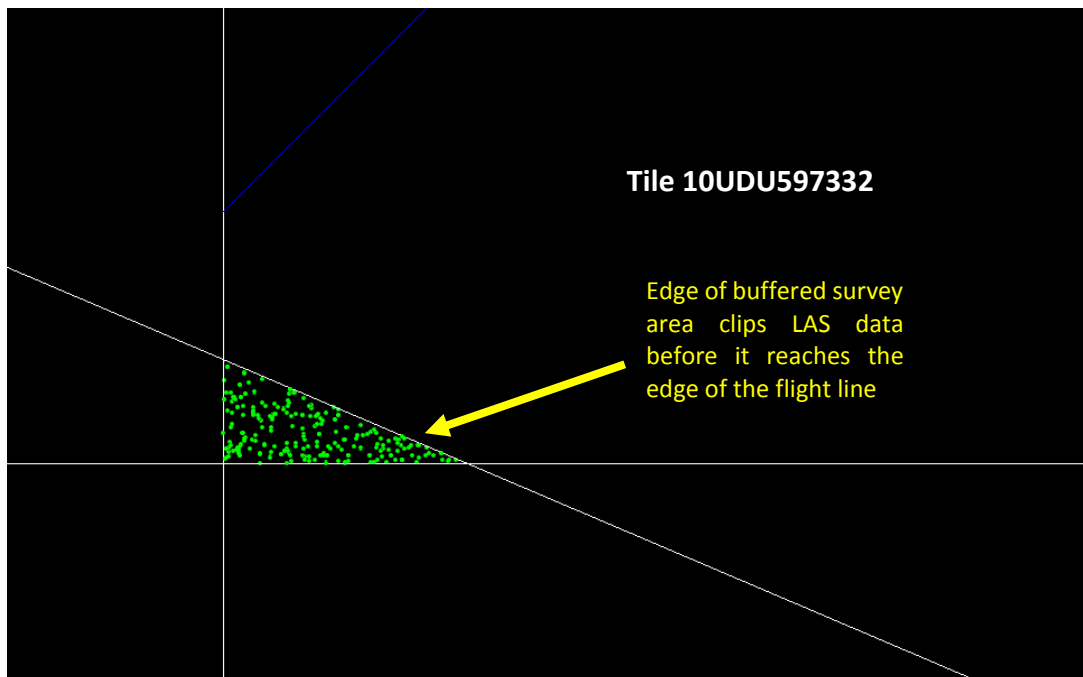
10. LAS NOTE

Issue: Legacy point count (0) does not match 1.4 point count.

Response: From presentations at ILMF our understanding is that the Legacy Point count should be 0. No action taken.

Issue: 10UDU597332, 10UDU605325, 10UDU702310: Edge of flight line bits do not appear to be populated correctly.

Response: there is no edge of flight line in these tiles. No action to be taken.



11. TILED LAS AND DEM NOTE

Issue: Task Order requires tiles to be 1500x1500 m. The tiles are 750x750m.

Response: It was requested tiles used during a prior project over the same area be maintained and used. These tiles were used. No action to be taken.

Issue: DEM tile 10UDU560250 is empty and should be deleted from the project.

Response: Tile removed.

12. XML METADATA NOTE

Issue: <absres> <ordres> parameters are only required to be populated with the cell size in raster data .xmls.

Response: Removed from LAS metadata files.