Appendix B

String Line Model Output

CSX Huntington Division East, Kanawha Subdivision
Mile Post 494 to 523
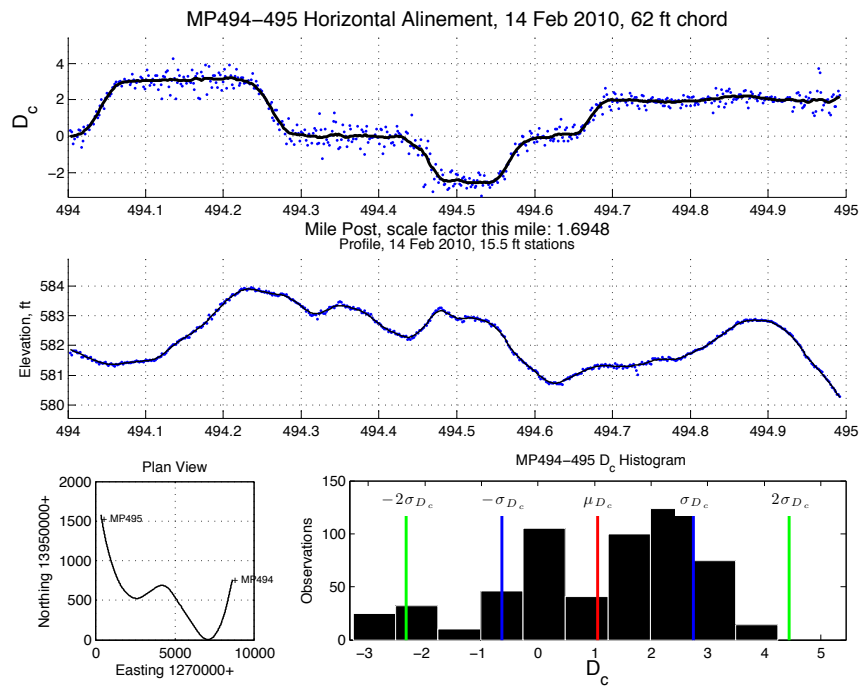
Figure 11: Hi-Rail Alinement, Kanawha Sub, MP 494-495

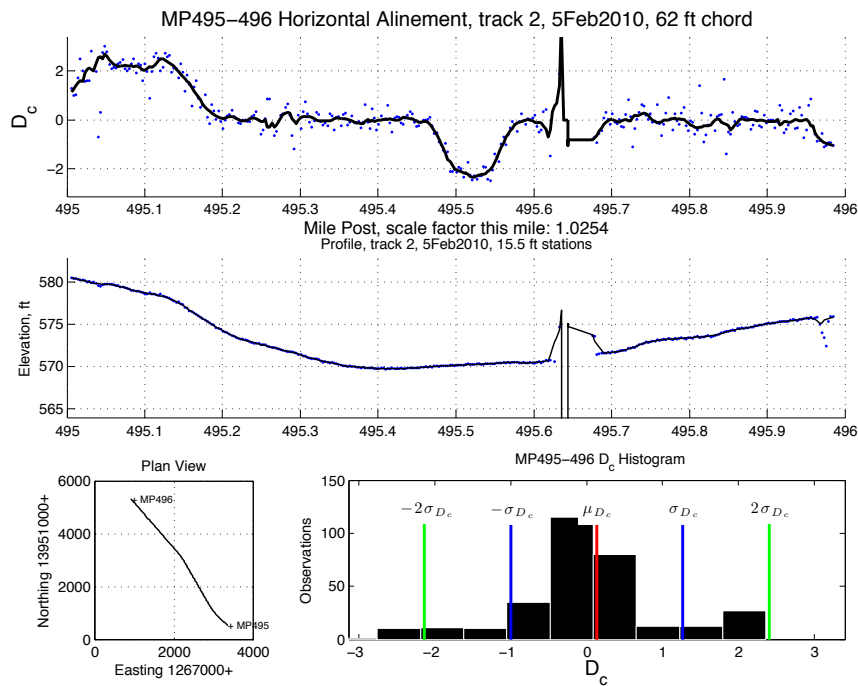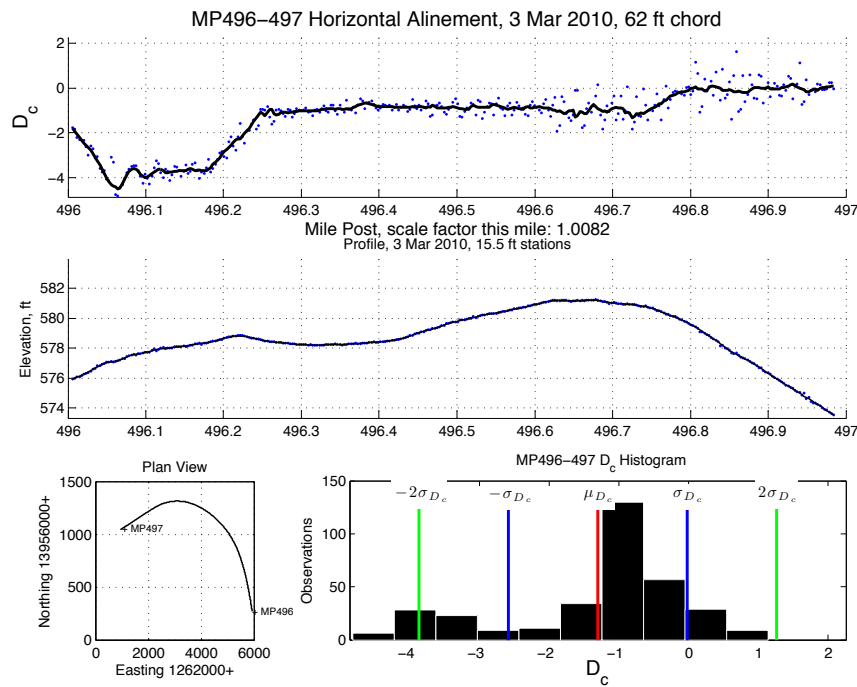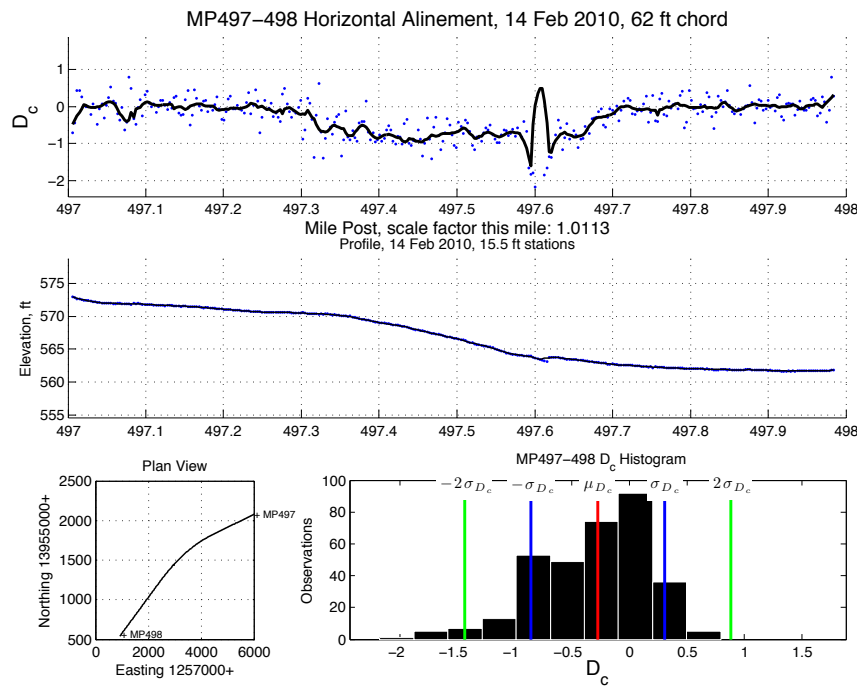Figure 12: Hi-Rail Alinement, Kanawha Sub, MP 495-496

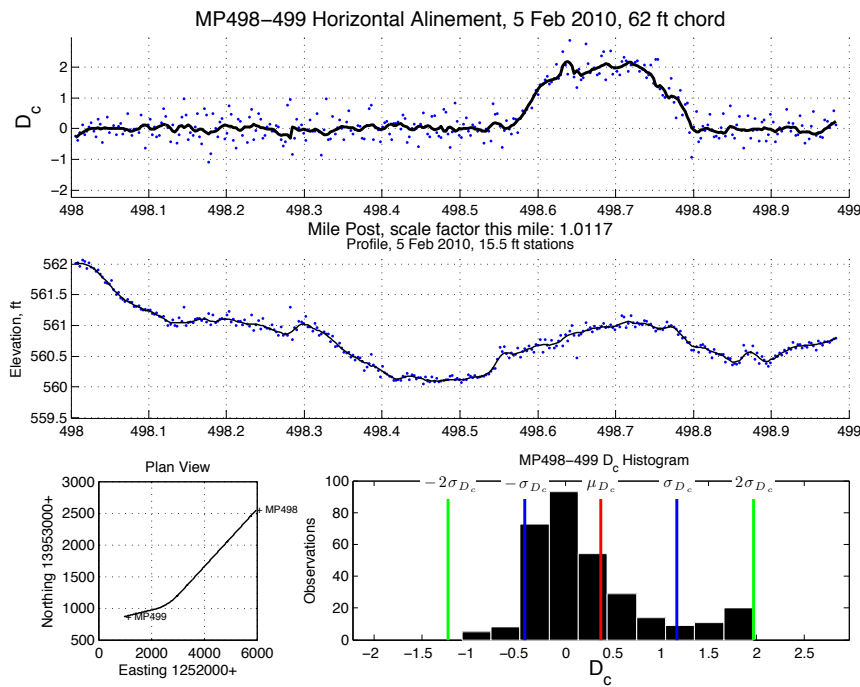Figure 13: Hi-Rail Alinement, Kanawha Sub, MP 496-497

Figure 14: Hi-Rail Alinement, Kanawha Sub, MP 497-498

MP498–499 Horizontal Alinement, 5 Feb 2010, 62 ft chord

Figure 15: Hi-Rail Alinement, Kanawha Sub, MP 498-499

MP499–500 Horizontal Alinement, 14 Feb 2010, 62 ft chord
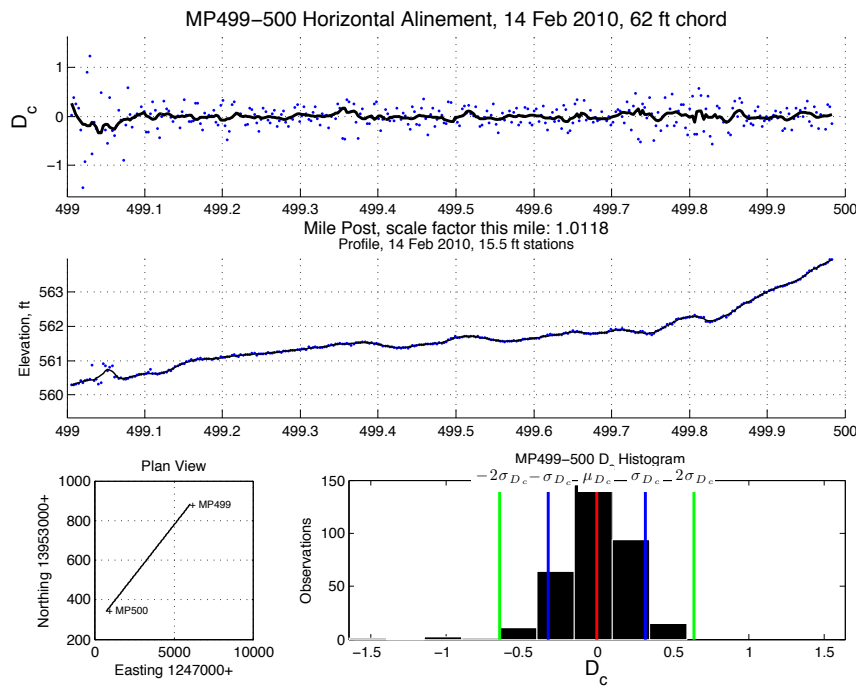
Figure 16: Hi-Rail Alinement, Kanawha Sub, MP 499-500
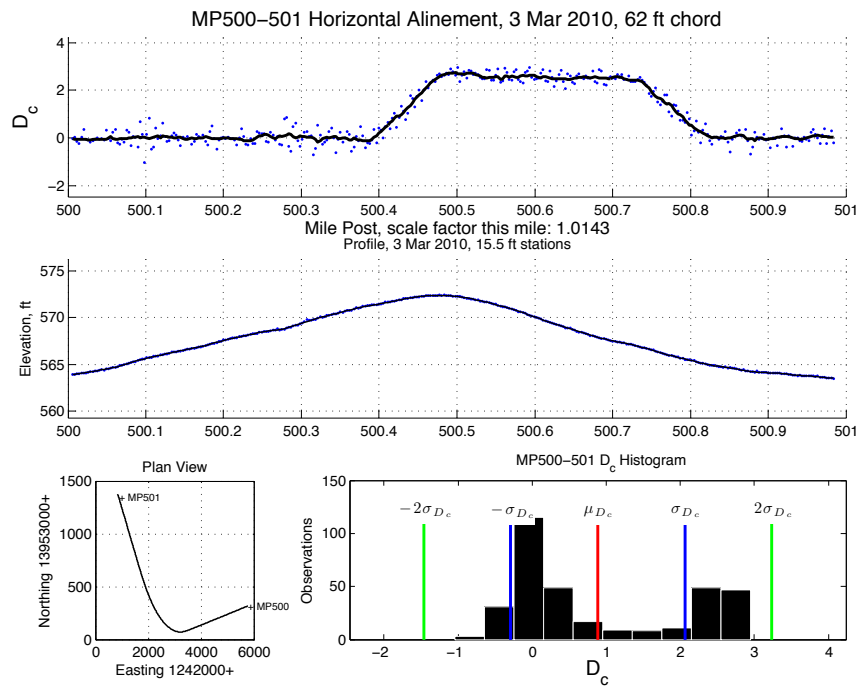
Figure 17: Hi-Rail Alinement, Kanawha Sub, MP 500-501

MP501–502 Horizontal Alinement, track 1, 14Feb2010, 62 ft chord
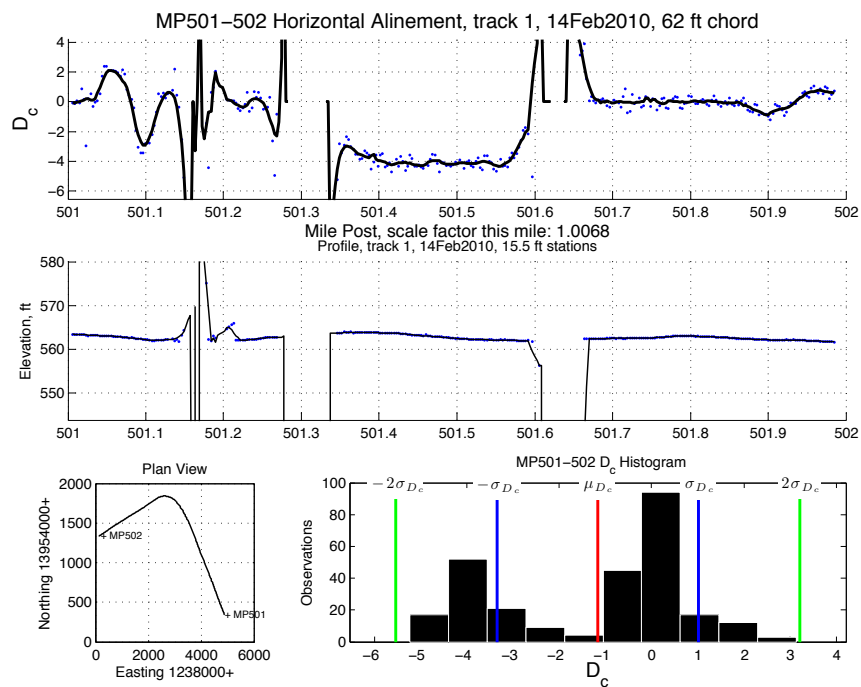
Figure 18: Hi-Rail Alinement, Kanawha Sub, MP 501-502

MP502–503 Horizontal Alinement, 14 Feb 2010, 62 ft chord
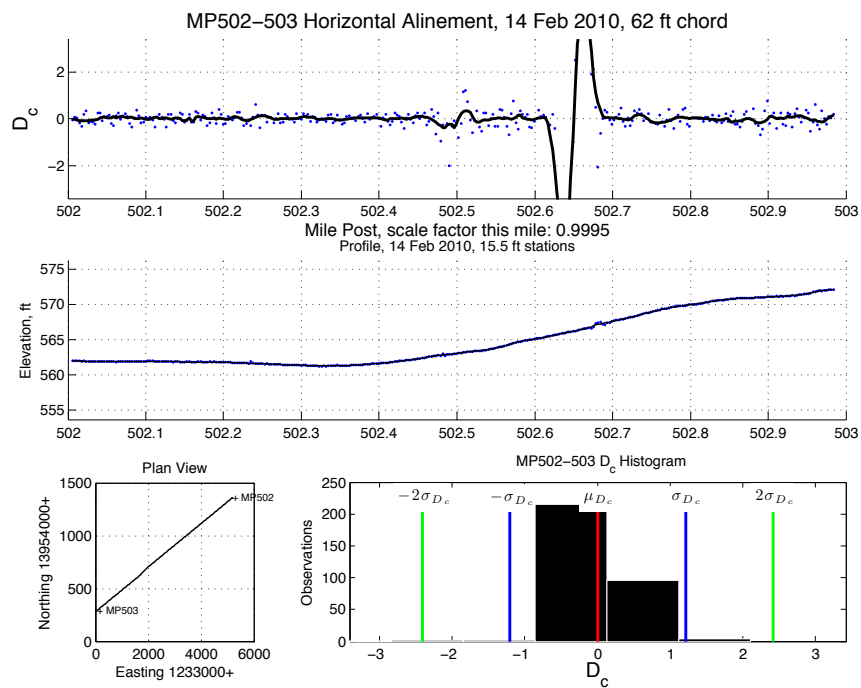
Figure 19: Hi-Rail Alinement, Kanawha Sub, MP 502-503
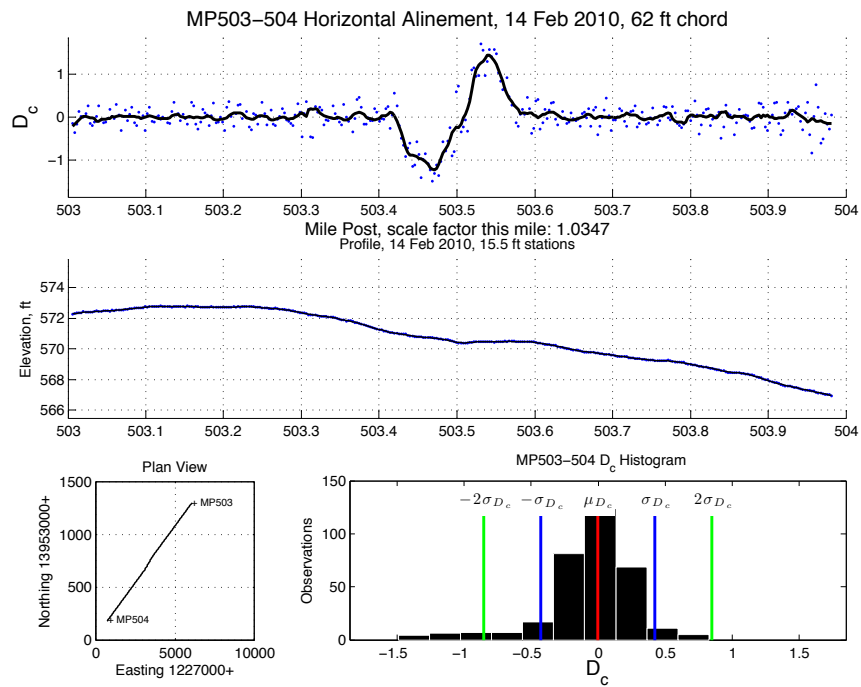
Figure 20: Hi-Rail Alinement, Kanawha Sub, MP 503-504
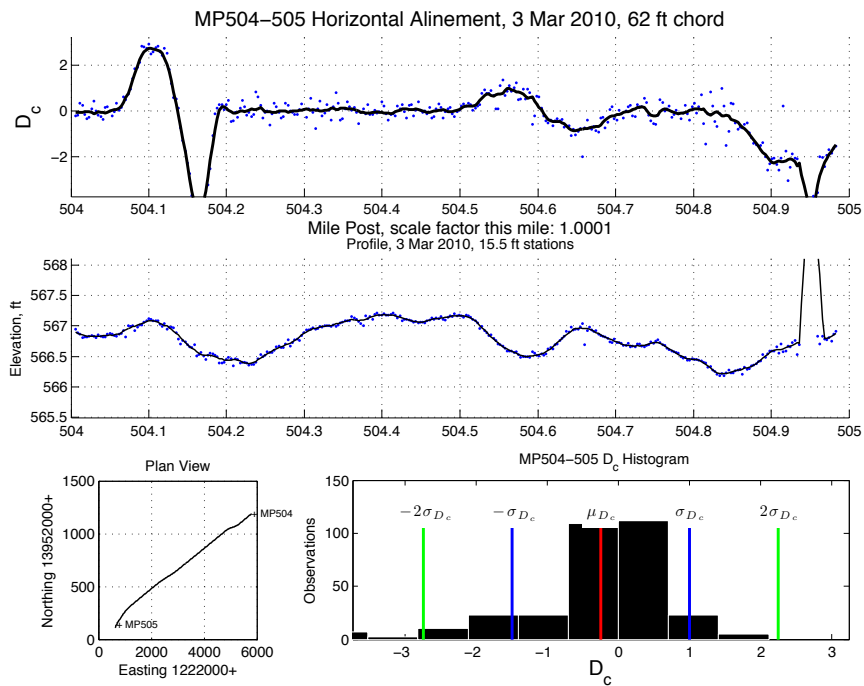
Figure 21: Hi-Rail Alinement, Kanawha Sub, MP 504-505

96
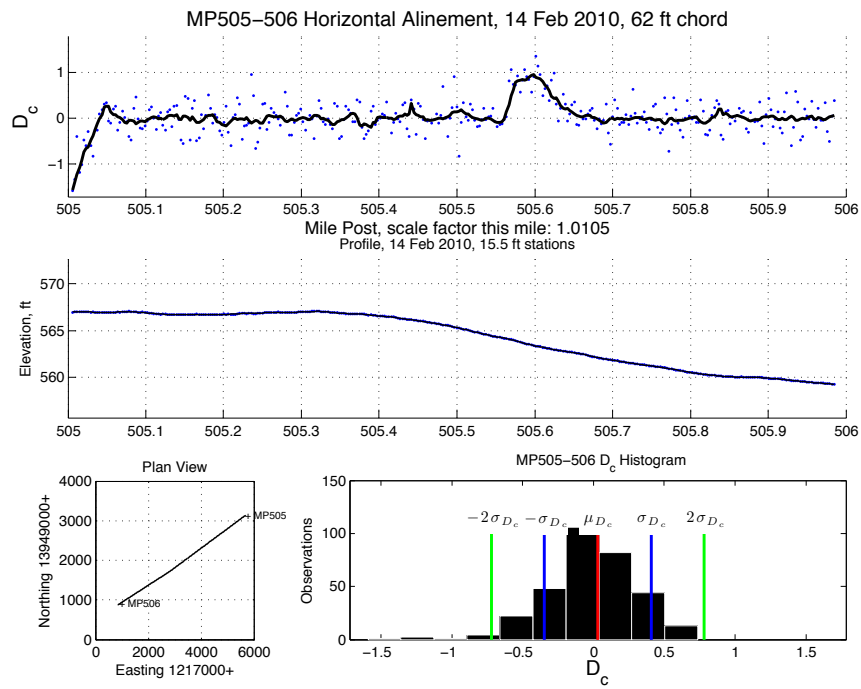
Figure 22: Hi-Rail Alinement, Kanawha Sub, MP 505-506
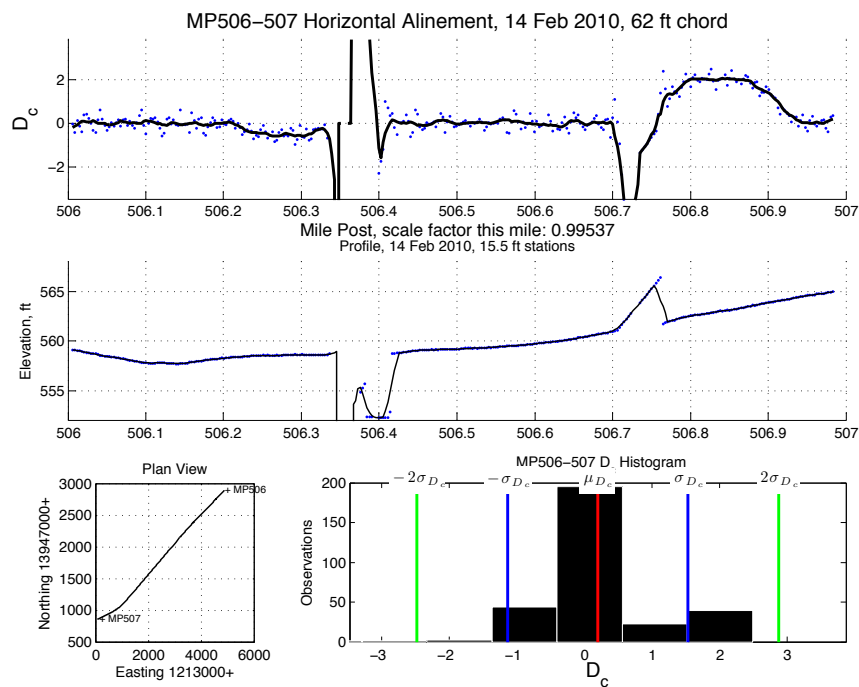
Figure 23: Hi-Rail Alinement, Kanawha Sub, MP 506-507
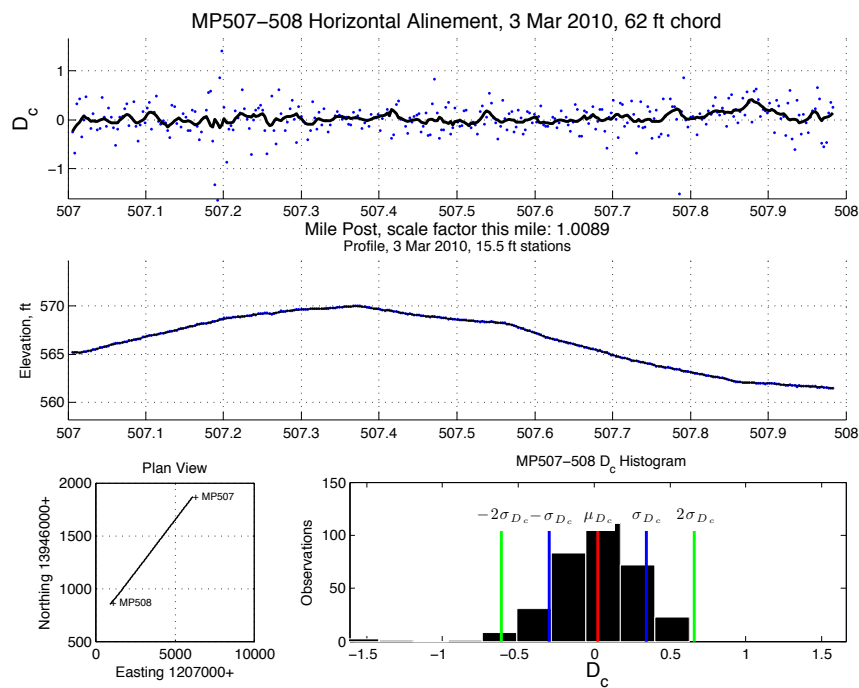
Figure 24: Hi-Rail Alinement, Kanawha Sub, MP 507-508
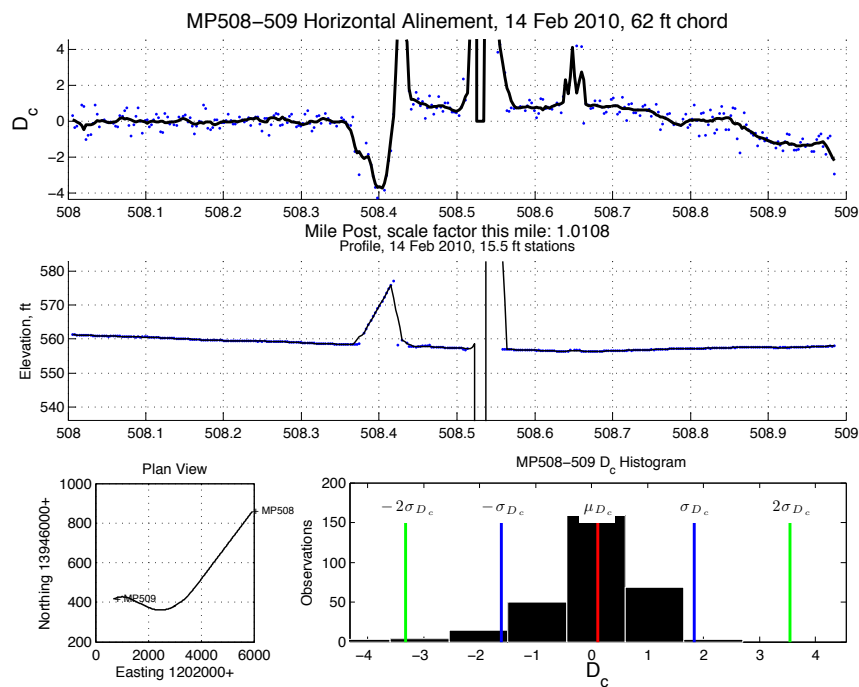
Figure 25: Hi-Rail Alinement, Kanawha Sub, MP 508-509
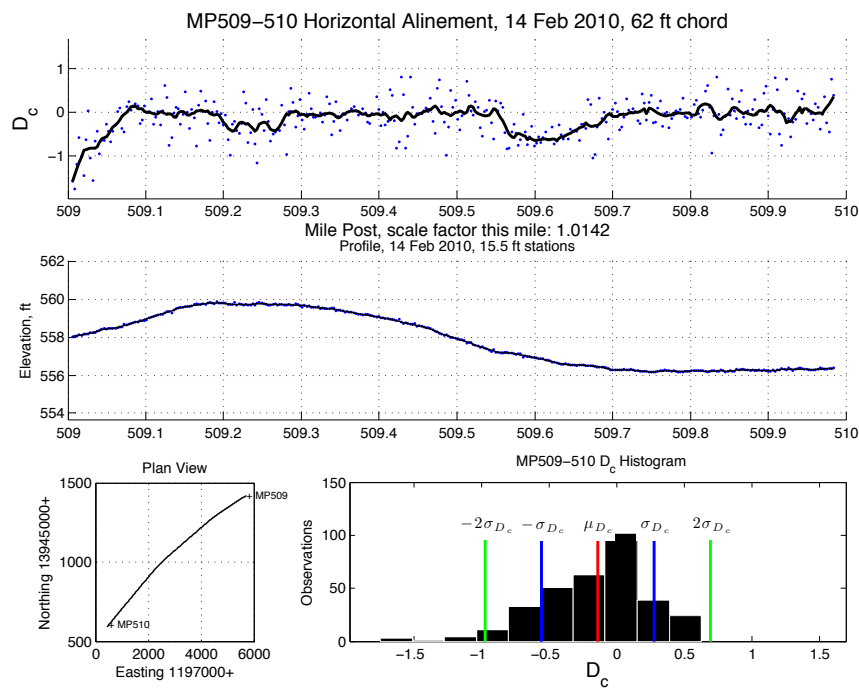
Figure 26: Hi-Rail Alinement, Kanawha Sub, MP 509-510
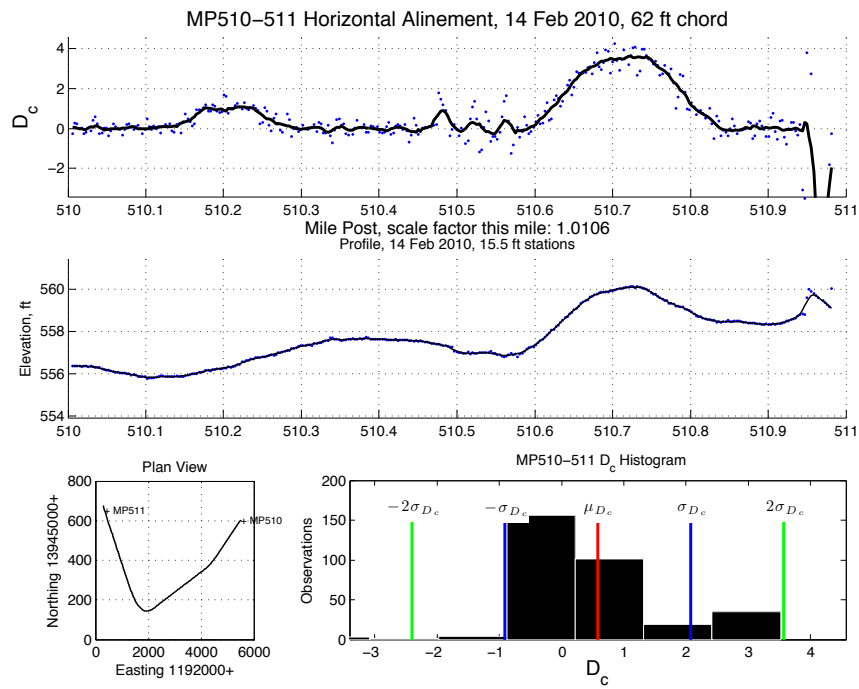
Figure 27: Hi-Rail Alinement, Kanawha Sub, MP 510-511
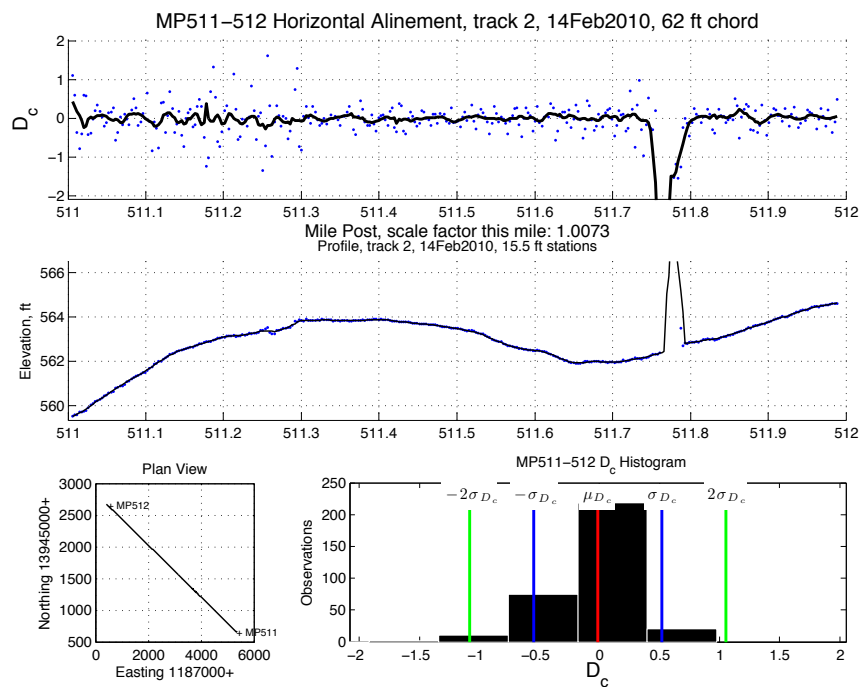
Figure 28: Hi-Rail Alinement, Kanawha Sub, MP 511-512
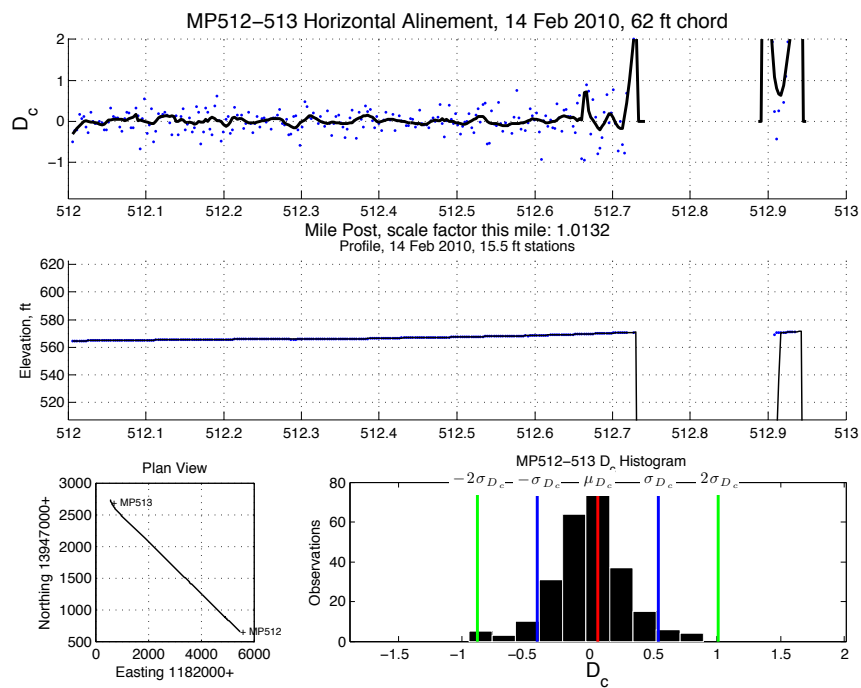
Figure 29: Hi-Rail Alinement, Kanawha Sub, MP 512-513
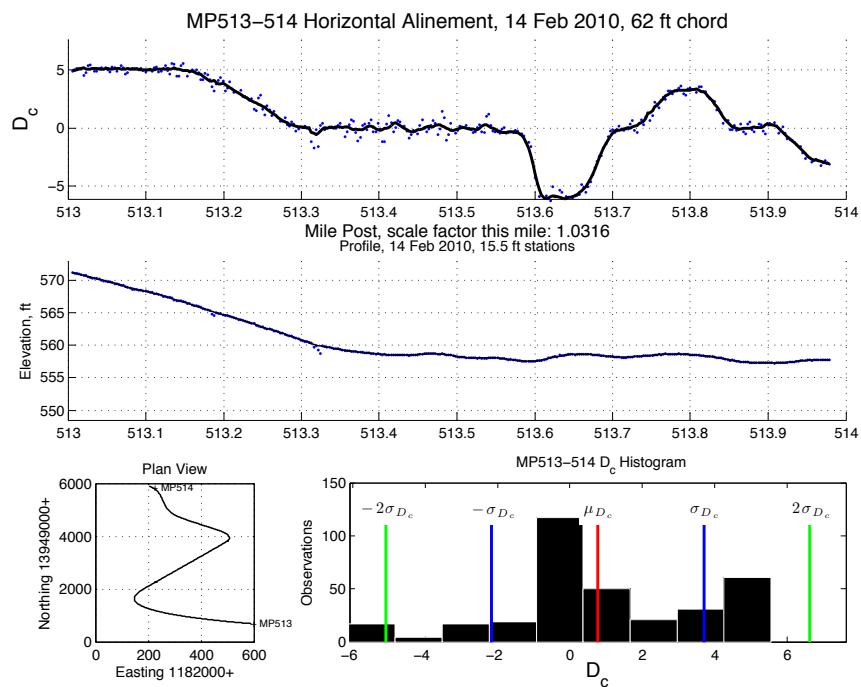
Figure 30: Hi-Rail Alinement, Kanawha Sub, MP 513-514
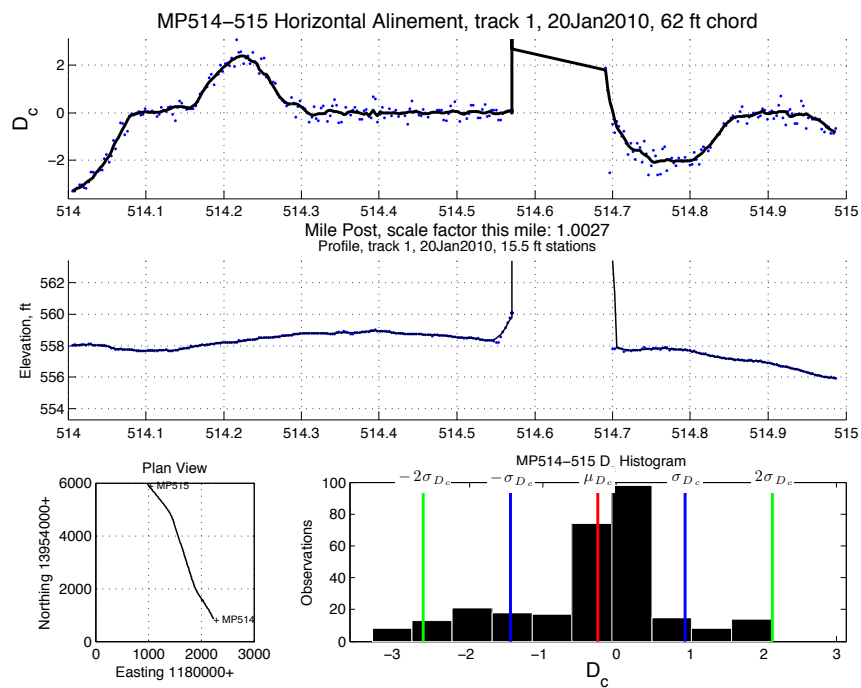
Figure 31: Hi-Rail Alinement, Kanawha Sub, MP 514-515
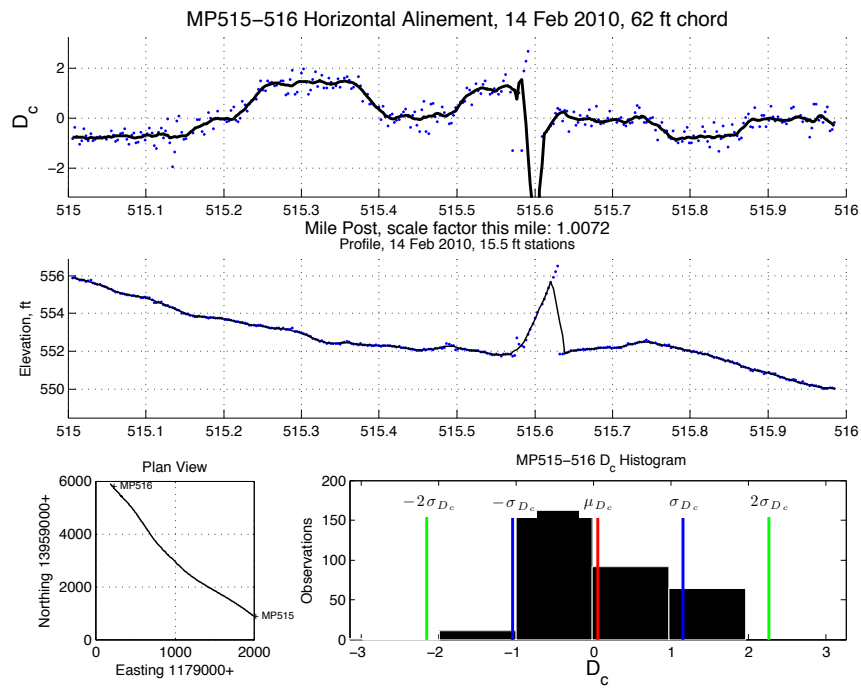
Figure 32: Hi-Rail Alinement, Kanawha Sub, MP 515-516
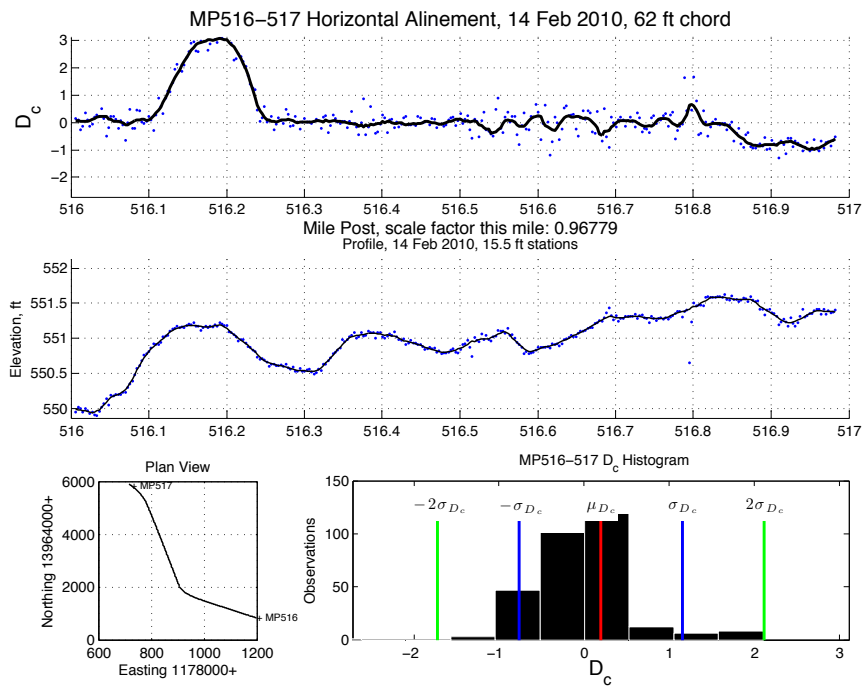
Figure 33: Hi-Rail Alinement, Kanawha Sub, MP 516-517
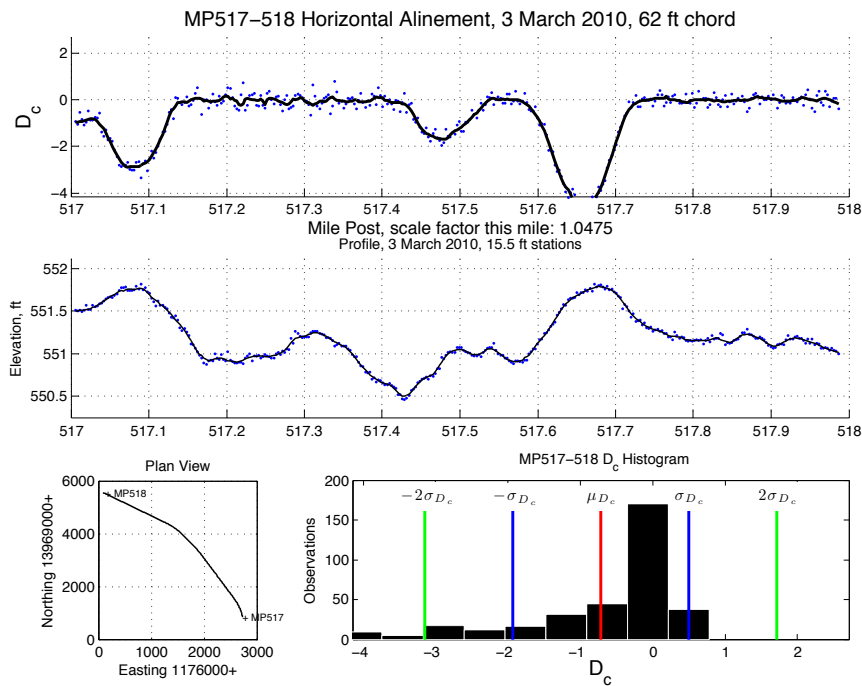
Figure 34: Hi-Rail Alinement, Kanawha Sub, MP 517-518
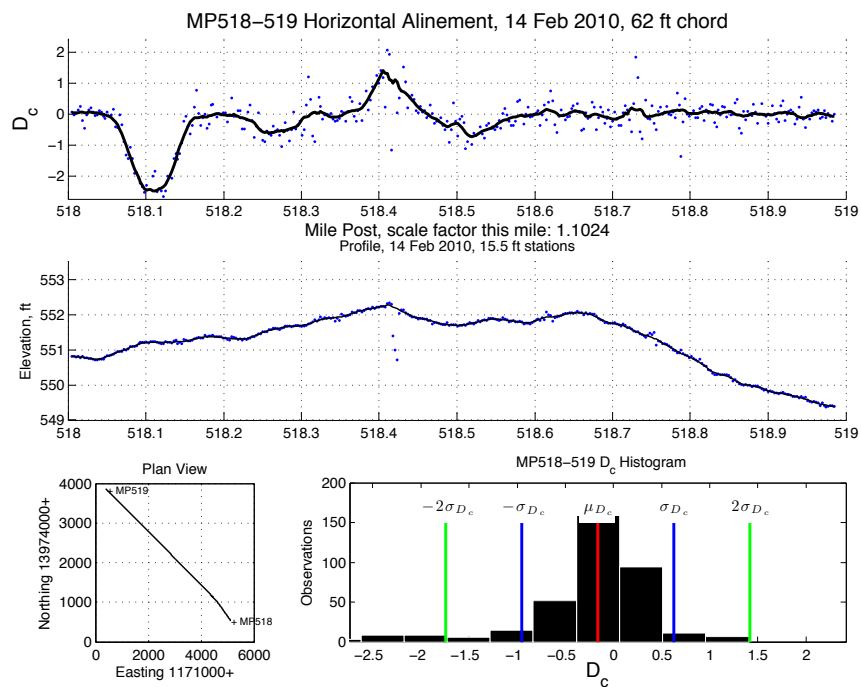
Figure 35: Hi-Rail Alinement, Kanawha Sub, MP 518-519
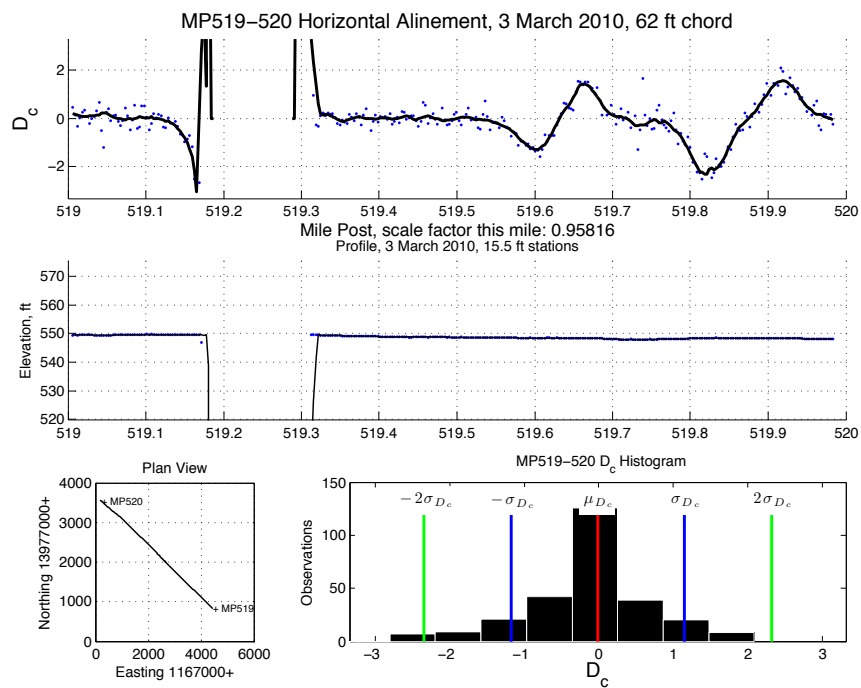
Figure 36: Hi-Rail Alinement, Kanawha Sub, MP 519-520
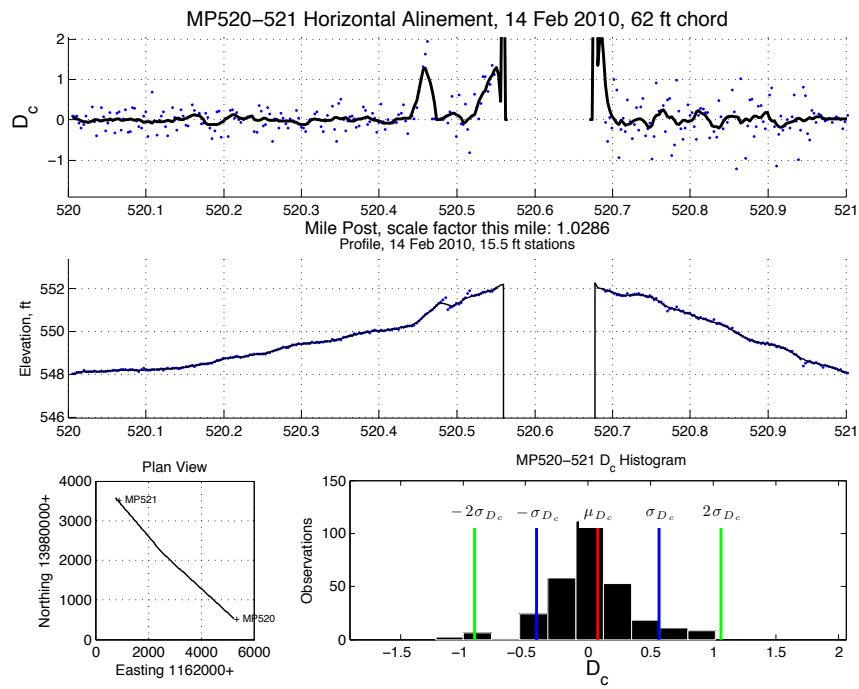
Figure 37: Hi-Rail Alinement, Kanawha Sub, MP 520-521
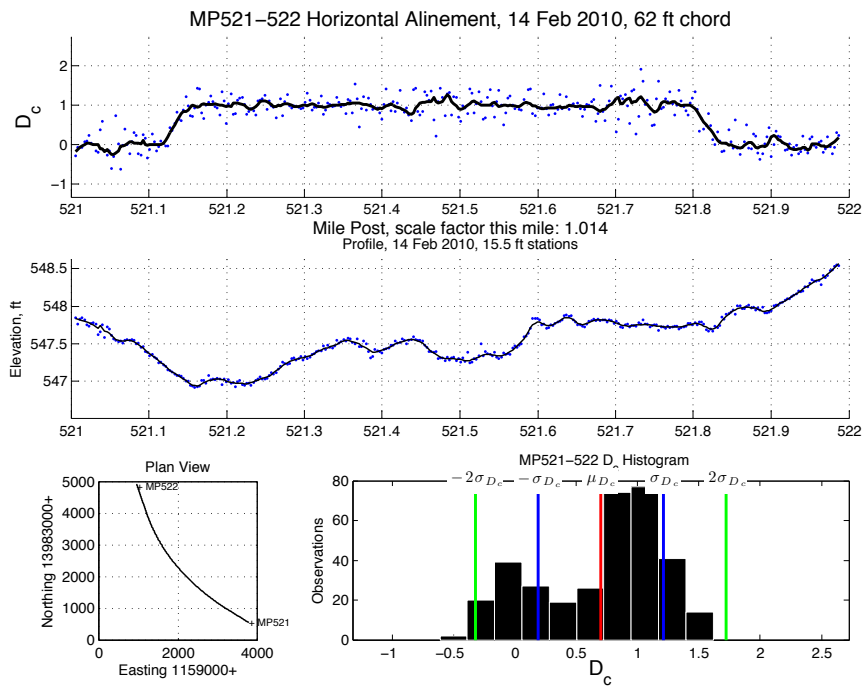
Figure 38: Hi-Rail Alinement, Kanawha Sub, MP 521-522
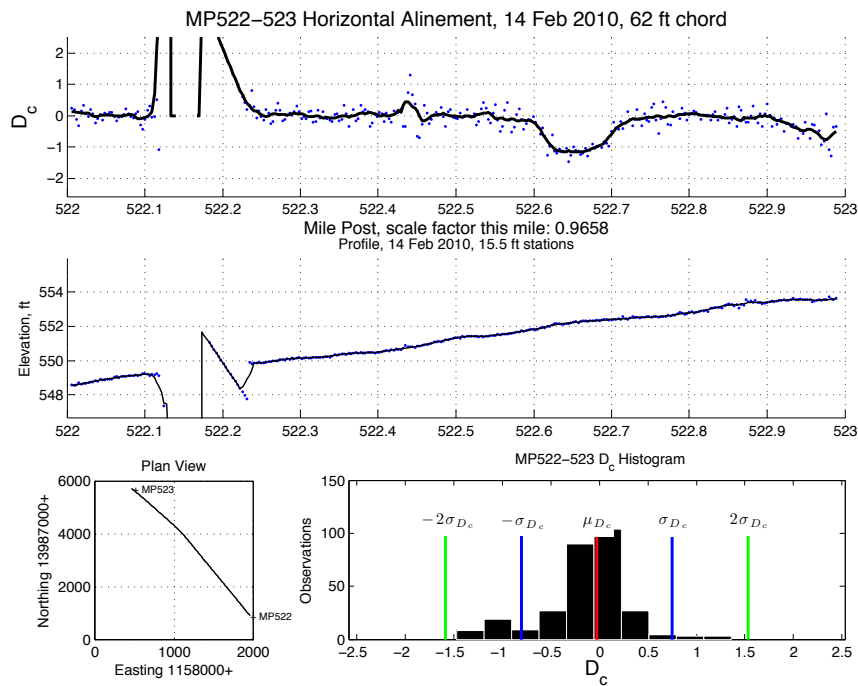
Figure 39: Hi-Rail Alinement, Kanawha Sub, MP 522-523

String Line Model Functions

Code listings available by following embedded hyperlink to PDF in code segment title.

- Track alinement runner.m: A Matlab script that reads a file containing track mile post locations, reads a file containing center line[6] observations, call various sub functions to determine and display the D_c vs. mile post reference modeled after the string line method.

- getIntLinesCircle.m: A Matlab function that returns the coordinates of the intersection between a circle, given the origin and radius, with an ordered series of lines defined by Cartesian coordinate pairs. [Hull, 2008] [Anderson and Mikhail, 2007]

- findMidOrdDistance.m: A Matlab function that returns distance between a chord's mid ordinate and an ordered series of line segments defined by (x, y) coordinate pairs. [Anderson and Mikhail, 2007]

- plotDOC.m: A Matlab function that plots track D_c and elevation profile vs mile post reference; a plan view of track observations; and histogram of D_c.

- slope2Az.m: A Matlab function that determines an azimuth (and back azimuth) from north in degrees given the input in radians from the +X-axis.

- perpDist2line.m: A Matlab function that determines the perpendicular distance from a point to a line. [Anderson and Mikhail, 2007]

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[6]Or other track reference i.e., right, left, gauge, or field side of rail.