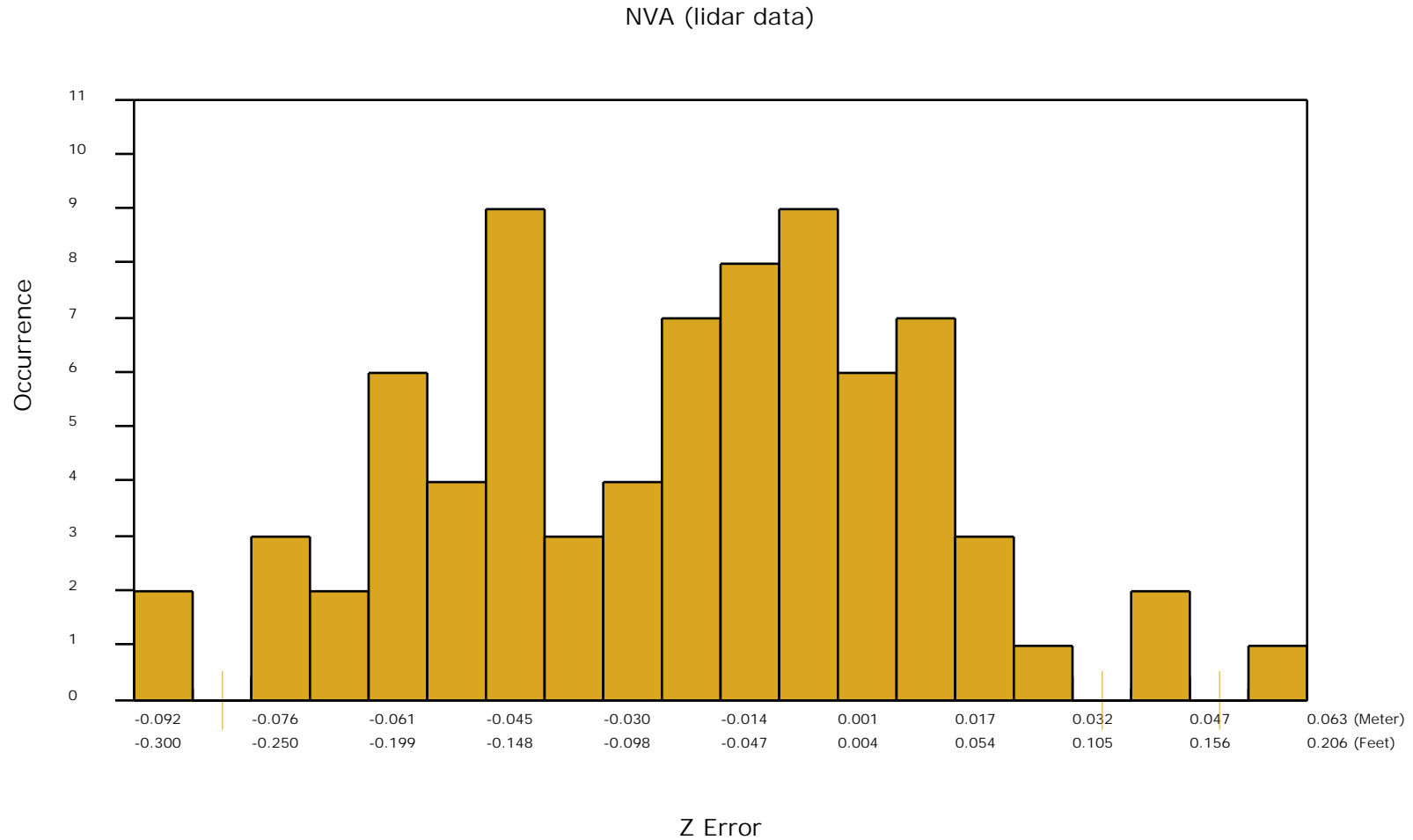


DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to show a frequency distribution chart of the non-vegetated vertical accuracy (NVA) of the lidar point cloud data measured against surveyed ground check points.

[Data Source - Y:\Mapping\Projects\65221102_MN_BeckerCounty\Production\Final_Client_Deliverables\223407\223404_MN_BeckerCo_1_2021\point_cloud\tilecls](#)

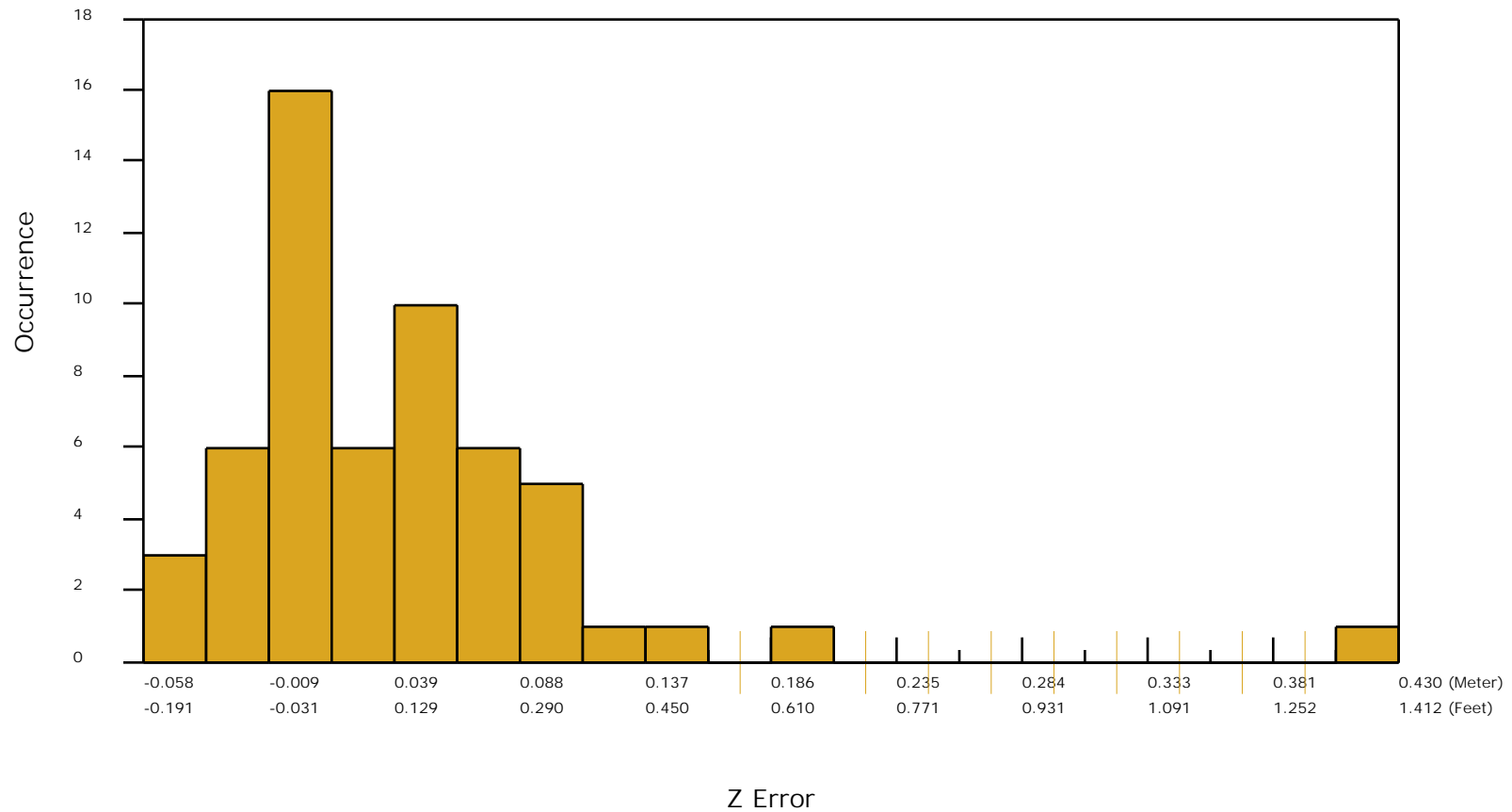


DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to show a frequency distribution chart of the vegetated vertical accuracy (VVA) of the lidar point cloud data measured against surveyed ground check points.

[Data Source - Y:\Mapping\Projects\65221102_MN_BeckerCounty\Production\Final_Client_Deliverables\223407\223404_MN_BeckerCo_1_2021\point_cloud\tilecls](#)

VVA (lidar data)



DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to report the results of measuring the DEM data against surveyed ground NVA (nonvegetated vertical accuracy) check points. All XY coordinates and Z values reported are in the selected data units.

NVA (DEM)

ID	X	Y	Coverage	Z	Z From Lidar	Z Error	Description	Comments
NVA1000	266542.361	5205697.965	Yes	373.557	373.562	0.005	LIPT	
NVA1001	331718.423	5179380.945	Yes	451.595	451.562	-0.033	LIPT	
NVA1002	275404.591	5221436.332	Yes	379.071	378.983	-0.088	LIPT	
NVA1003	304996.937	5204145.809	Yes	470.241	470.190	-0.051	LIPT	
NVA1004	303829.255	5218869.46	Yes	468.235	468.216	-0.019	LIPT	
NVA1005	317220.565	5178005.026	Yes	452.249	452.306	0.057	LIPT	
NVA1006	278606.458	5214804.84	Yes	390.147	390.095	-0.052	LIPT	
NVA1007	285590.516	5198496.866	Yes	433.979	433.976	-0.003	LIPT	
NVA1008	327064.614	5190719.689	Yes	457.69	457.685	-0.005	LIPT	
NVA1009	329021.857	5222806.29	Yes	485.926	485.910	-0.016	LIPT	
NVA1010	302604.435	5193551.887	Yes	446.402	446.402	0.000	LIPT	
NVA1011	315927.064	5215175.224	Yes	495.407	495.329	-0.078	LIPT	
NVA1012	325335.547	5185834.963	Yes	463.387	463.388	0.001	LIPT	
NVA1013	296123.164	5195644.525	Yes	446.833	446.788	-0.045	LIPT	
NVA1014	293100.203	5185215.818	Yes	431.406	431.368	-0.038	LIPT	
NVA1015	286522.613	5182297.416	Yes	415.613	415.569	-0.044	LIPT	
NVA1016	261263.294	5196118.261	Yes	405.656	405.664	0.008	LIPT	
NVA1017	311617.008	5232046.146	Yes	561.56	561.528	-0.032	LIPT	
NVA1017ALT	311631.094	5231796.117	Yes	556.064	556.024	-0.040	LIPT	
NVA1018	293408.199	5217740.216	Yes	465.412	465.398	-0.014	LIPT	
NVA1019	325498.842	5212430.038	Yes	478.215	478.183	-0.032	LIPT	
NVA1020	316383.554	5224079.929	Yes	503.458	503.480	0.022	LIPT	
NVA1021	263987.467	5183949.919	Yes	423.31	423.292	-0.018	LIPT	
NVA1022	261958.483	5207413.385	Yes	372.124	372.105	-0.019	LIPT	
NVA1023	316775.841	5190859.579	Yes	482.398	482.371	-0.027	LIPT	
NVA1024	330454.739	5218067.574	Yes	478.689	478.639	-0.050	LIPT	
NVA1025	301831.955	5210922.287	Yes	460.322	460.290	-0.032	LIPT	
NVA1026	277609.598	5184099.346	Yes	410.271	410.261	-0.010	LIPT	
NVA1027	313135.032	5204676.528	Yes	473.832	473.839	0.007	LIPT	
NVA1028	270376.058	5179793.948	Yes	436.468	436.442	-0.026	LIPT	

Check Points Vertical Accuracy - continued

ID	X	Y	Coverage	Z	Z From Lidar	Z Error	Description	Comments
NVA1029	326468.785	5198665.609	Yes	455.549	455.538	-0.011	LIPT	
NVA1030	329064.9	5203613.671	Yes	454.425	454.424	-0.001	LIPT	
NVA1031	291821.381	5203925.825	Yes	445.258	445.221	-0.037	LIPT	
NVA1032	308507.434	5186296.217	Yes	467.567	467.620	0.053	LIPT	
NVA1033	310845.924	5181525.37	Yes	454.888	454.843	-0.045	LIPT	
NVA1034	298507.986	5203712.204	Yes	452.787	452.767	-0.020	LIPT	
NVA1035	264322.19	5192953.066	Yes	418.921	418.922	0.001	LIPT	
NVA1036	307724.328	5210353.957	Yes	463.506	463.422	-0.084	LIPT	
NVA1037	316132.242	5219986.806	Yes	495.86	495.816	-0.044	LIPT	
NVA1038	293207.986	5179218.416	Yes	425.639	425.624	-0.015	LIPT	
NVA1039	305856.251	5224567.438	Yes	491.762	491.765	0.003	LIPT	
NVA1040	283718.881	5216213.841	Yes	471.006	471.001	-0.005	LIPT	
NVA1041	282441.716	5189619.654	Yes	414.691	414.681	-0.010	LIPT	
NVA1042	257396.009	5178698.858	Yes	431.743	431.710	-0.033	LIPT	
NVA1043	259249.347	5222006.355	Yes	356.815	356.783	-0.032	LIPT	
NVA1044	299370.386	5180143.243	Yes	427.677	427.674	-0.003	LIPT	
NVA1045	287370.239	5225678.487	Yes	467.848	467.786	-0.062	LIPT	
NVA1046	266272.897	5199230.361	Yes	404.333	404.322	-0.011	LIPT	
NVA1047	303716.342	5188865.021	Yes	463.239	463.272	0.033	LIPT	
NVA1048	312856.791	5195888.449	Yes	474.716	474.657	-0.059	LIPT	
NVA1049	258397.188	5202856.987	Yes	366.573	366.587	0.014	LIPT	
NVA1050	270643.029	5213544.986	Yes	381.74	381.680	-0.060	LIPT	
NVA1051	269345.549	5221662.211	Yes	373.787	373.766	-0.021	LIPT	
NVA1052	281771.704	5205136.983	Yes	448.804	448.736	-0.068	LIPT	
NVA1052ALT	281774.858	5205132.199	Yes	448.767	448.708	-0.059	LIPT	
NVA1053	273863.657	5190095.405	Yes	407.81	407.804	-0.006	LIPT	
NVA1054	322185.825	5208537.832	Yes	472.302	472.320	0.018	LIPT	
NVA1055	332112.968	5198692.929	Yes	450.302	450.294	-0.008	LIPT	
NVA1056	293283.037	5223413.792	Yes	468.423	468.413	-0.010	LIPT	
NVA1057	274099.905	5208559.52	Yes	382.209	382.234	0.025	LIPT	
NVA1058	259117.332	5186310.242	Yes	425.17	425.144	-0.026	LIPT	
NVA1059	288642.144	5207853.702	Yes	458.694	458.702	0.008	LIPT	
NVA1060	334161.01	5185759.969	Yes	434.378	434.307	-0.071	LIPT	
NVA1061	258904.804	5212373.063	Yes	362.744	362.680	-0.064	LIPT	
NVA1061ALT	258907.06	5212364.248	Yes	362.731	362.671	-0.060	LIPT	

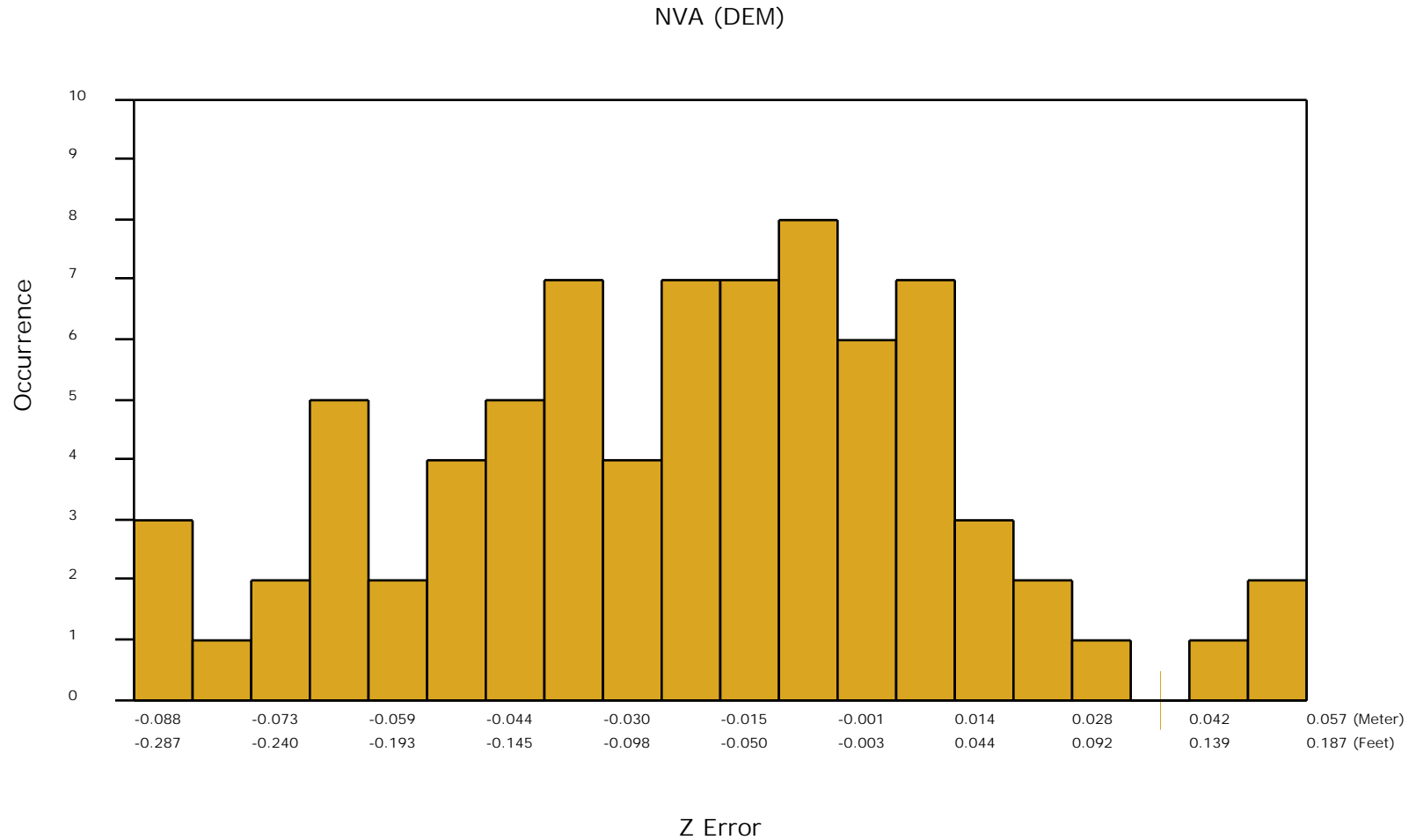
Check Points Vertical Accuracy - continued

ID	X	Y	Coverage	Z	Z From Lidar	Z Error	Description	Comments
NVA1062	272782.95	5202225.117	Yes	383.636	383.645	0.009	LIPT	
NVA1063	332378.646	5210742.531	Yes	448.435	448.413	-0.022	LIPT	
NVA2011	302559.64	5193511.391	Yes	446.044	446.007	-0.037	LIPT	
NVA3001	266454.477	5204071.297	Yes	375.718	375.692	-0.026	LIPT	
NVA3002	331752.844	5177778.616	Yes	452.285	452.278	-0.007	LIPT	
NVA3005	306533.569	5224643.436	Yes	485.18	485.189	0.009	LIPT	
NVA3006	317173.774	5179599.716	Yes	469.626	469.631	0.005	LIPT	
NVA3011	303143.965	5193896.071	Yes	446.187	446.236	0.049	LIPT	
NVA3012	322297.388	5211802.952	Yes	473.107	473.120	0.013	LIPT	
NVA3014	296068.952	5196016.123	Yes	447.853	447.767	-0.086	LIPT	
NVA3018	309715.296	5224403.127	Yes	482.964	482.974	0.010	LIPT	
NVA3028	316543.736	5204653.704	Yes	467.875	467.895	0.020	LIPT	

DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to show a frequency distribution chart of the non-vegetated vertical accuracy (NVA) of the DEM data measured against surveyed ground check points.

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DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to report the results of measuring the DEM data against surveyed ground VVA (vegetated vertical accuracy) check points. All XY coordinates and Z values reported are in the selected data units.

VVA (DEM)

ID	X	Y	Coverage	Z	Z From Lidar	Z Error	Description	Comments
VVA2001	266464.461	5205680.016	Yes	369.68	369.768	0.088	LIPT	
VVA2002	331744.068	5179320.321	Yes	451.234	451.371	0.137	LIPT	
VVA2002ALT	331743.171	5179303.023	Yes	451.329	451.383	0.054	LIPT	
VVA2003	275429.44	5221454.919	Yes	378.691	378.739	0.048	LIPT	
VVA2004	305093.708	5204147.83	Yes	468.506	468.560	0.054	LIPT	
VVA2005	303734.296	5218853.826	Yes	471.379	471.438	0.059	LIPT	
VVA2006	317238.355	5178036.166	Yes	451.178	451.290	0.112	LIPT	
VVA2007	278550.236	5214835.789	Yes	390.139	390.172	0.033	LIPT	
VVA2008	285650.726	5198527.766	Yes	429.053	429.123	0.070	LIPT	
VVA2009	327081.967	5190749.489	Yes	456.11	456.166	0.056	LIPT	
VVA2010	329016.209	5222884.945	Yes	484.866	484.868	0.002	LIPT	
VVA2012	315942.072	5215158.25	Yes	494.327	494.297	-0.030	LIPT	
VVA2013	325316.579	5186226.525	Yes	464.177	464.292	0.115	LIPT	
VVA2014	296047.774	5195601.682	Yes	449.149	449.119	-0.030	LIPT	
VVA2015	293068.028	5185223.992	Yes	430.95	430.929	-0.021	LIPT	
VVA2016	286545.944	5182249.213	Yes	415.97	416.011	0.041	LIPT	
VVA2017	261235.236	5196086.668	Yes	403.278	403.349	0.071	LIPT	
VVA2018	311604.485	5232059.086	Yes	560.614	560.611	-0.003	LIPT	
VVA2019	293328.936	5217690.831	Yes	466.878	466.945	0.067	LIPT	
VVA2020	325508.807	5212506.624	Yes	479.67	479.725	0.055	LIPT	
VVA2021	316280.021	5223958.358	Yes	501.606	501.580	-0.026	LIPT	
VVA2022	263992.85	5184000.344	Yes	422.517	422.528	0.011	LIPT	
VVA2023	262258.634	5207414.939	Yes	372.126	372.129	0.003	LIPT	
VVA2024	316892.023	5190884.733	Yes	481.431	481.489	0.058	LIPT	
VVA2025	330514.3	5218132.266	Yes	480.633	480.628	-0.005	LIPT	
VVA2026	301804.56	5210935.852	Yes	456.48	456.551	0.071	LIPT	
VVA2027	277585.189	5184273.523	Yes	408.557	408.518	-0.039	LIPT	
VVA2027ALT	277611.713	5184266.964	Yes	408.902	408.889	-0.013	LIPT	
VVA2028	313204.934	5204878.187	Yes	474.995	475.056	0.061	LIPT	
VVA2029ALT	272412.17	5179671.935	Yes	422.036	422.047	0.011	LIPT	

Check Points Vertical Accuracy - continued

ID	X	Y	Coverage	Z	Z From Lidar	Z Error	Description	Comments
VVA2030	326666.863	5198782.57	Yes	453.792	454.235	0.443	LIPT	
VVA2030ALT	326663.599	5198778.298	Yes	454.226	454.318	0.092	LIPT	
VVA2031	329020.441	5203644.836	Yes	457.768	457.761	-0.007	LIPT	
VVA2032	291695.48	5203976.691	Yes	442.805	442.881	0.076	LIPT	
VVA2032ALT	291598.952	5203972.108	Yes	442.899	442.914	0.015	LIPT	
VVA2033	308673.392	5186309.766	Yes	464.984	465.081	0.097	LIPT	
VVA2034	310816.664	5181482.522	Yes	454.017	454.087	0.070	LIPT	
VVA2035	298499.251	5203761.082	Yes	452.217	452.215	-0.002	LIPT	
VVA2036	262562.566	5193042.449	Yes	413.248	413.452	0.204	LIPT	
VVA2037	307374.604	5210724.901	Yes	469.498	469.529	0.031	LIPT	
VVA2038	316130.966	5219431.351	Yes	497.842	497.827	-0.015	LIPT	
VVA2039	293311.952	5179824.86	Yes	422.846	422.893	0.047	LIPT	
VVA2040	305830.097	5224540.448	Yes	492.95	492.997	0.047	LIPT	
VVA2041	283614.133	5216436.457	Yes	472.858	472.846	-0.012	LIPT	
VVA2042	282134.389	5189563.516	Yes	416.309	416.286	-0.023	LIPT	
VVA2043	257907.057	5178676.153	Yes	430.395	430.312	-0.083	LIPT	
VVA2044	259318.208	5222021.814	Yes	356.344	356.321	-0.023	LIPT	
VVA2044ALT	259267.412	5222001.091	Yes	355.873	355.903	0.030	LIPT	
VVA2044RE	259564.152	5222020.459	Yes	355.63	355.619	-0.011	LIPT	
VVA2045	299347.058	5180168.077	Yes	426.001	426.050	0.049	LIPT	
VVA2046	287475.247	5225694.634	Yes	464.77	464.729	-0.041	LIPT	
VVA2047	266237.282	5199252.489	Yes	403.738	403.778	0.040	LIPT	
VVA2048	303249.151	5188909.344	Yes	460.777	460.883	0.106	LIPT	
VVA2049	312823.177	5195843.557	Yes	472.117	472.155	0.038	LIPT	
VVA2050	258339.636	5202838.413	Yes	366.056	366.128	0.072	LIPT	
VVA2051	270631.918	5213521.371	Yes	381.059	381.017	-0.042	LIPT	

DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to show a frequency distribution chart of the vegetated vertical accuracy (VVA) of the DEM data measured against surveyed ground check points.

[Data Source - Y:\Mapping\Projects\65221102_MN_BeckerCounty\Production\Final_Client_Deliverables\223407\223404_MN_BeckerCo_1_2021\point_cloud\tilecls](#)

VVA (DEM)

