



National Transportation Safety Board

**Office of Aviation Safety
Washington, D.C. 20594-2000
October 24, 2016**

**ATTACHMENT 3 to the WEATHER STUDY
CEN16FA276**

Total lightning activity detected by the Earth Networks Total Lightning Network in the accident region between 1030 and 1200 CDT.

*Submitted by: Mike Richards
NTSB, AS-30*

<u>Lightning Time UTC</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Peak Current</u>	<u>Classification</u>
16:28:58	41.52738	-88.12601	2729	IntraCloud
16:29:37	41.5395	-88.12397	4513	IntraCloud
16:30:09	41.54026	-88.1236	547	IntraCloud
16:30:09	41.53934	-88.12127	247	IntraCloud
16:30:09	41.54264	-88.11937	2984	IntraCloud
16:30:42	41.52473	-88.10341	5464	IntraCloud
16:31:23	41.52509	-88.11775	7907	IntraCloud
16:31:50	41.51059	-88.08868	4462	IntraCloud
16:32:08	41.51658	-88.09414	4774	IntraCloud
16:32:27	41.51384	-88.08526	10453	IntraCloud
16:32:46	41.52085	-88.07709	2782	IntraCloud
16:33:05	41.51466	-88.077	17328	IntraCloud
16:33:05	41.51172	-88.08343	862	IntraCloud
16:33:05	41.51828	-88.07436	-762	IntraCloud
16:33:20	41.52576	-88.09665	4198	IntraCloud
16:33:27	41.49496	-88.07913	5599	IntraCloud
16:33:45	41.52573	-88.1092	9962	IntraCloud
16:34:00	41.50286	-88.11387	-4309	IntraCloud
16:34:15	41.52077	-88.10988	4087	IntraCloud
16:34:15	41.52706	-88.10601	9869	IntraCloud
16:34:20	41.50739	-88.05979	3417	IntraCloud
16:34:25	41.51703	-88.09053	2745	IntraCloud
16:34:40	41.52274	-88.10182	-7465	IntraCloud
16:34:51	41.51887	-88.1111	10359	IntraCloud
16:34:55	41.50629	-88.05957	2975	IntraCloud
16:35:10	41.52344	-88.09978	6657	IntraCloud
16:35:10	41.51535	-88.10619	2499	IntraCloud
16:35:10	41.51356	-88.07684	4894	IntraCloud
16:35:35	41.51894	-88.0784	9237	IntraCloud
16:36:06	41.5086	-88.0965	870	IntraCloud
16:36:06	41.52043	-88.08401	19287	CloudToGround
16:36:21	41.50073	-88.10703	4633	IntraCloud
16:36:46	41.50325	-88.10705	6679	IntraCloud
16:36:46	41.59924	-87.94713	-974	IntraCloud
16:37:18	41.50436	-88.06348	8639	IntraCloud
16:37:58	41.50895	-88.09308	1575	IntraCloud
16:37:58	41.48117	-88.11178	-44709	CloudToGround
16:38:28	41.49673	-88.09759	3259	IntraCloud
16:38:28	41.50252	-88.08727	879	IntraCloud
16:38:29	41.55043	-88.17581	-30811	CloudToGround
16:38:49	41.5062	-88.09197	1097	IntraCloud
16:38:49	41.51048	-88.19843	-26637	CloudToGround
16:39:17	41.52255	-88.03265	1036	IntraCloud
16:39:17	41.5149	-88.04851	2134	IntraCloud
16:40:02	41.50151	-88.06669	7020	IntraCloud
16:40:19	41.52955	-88.05189	8438	IntraCloud

16:40:33	41.50177	-88.08298	6824	IntraCloud
16:40:33	41.52968	-88.11821	1552	IntraCloud
16:40:45	41.52578	-88.04804	-3696	IntraCloud
16:41:01	41.5251	-88.04298	14256	IntraCloud
16:41:19	41.50756	-88.04465	3728	IntraCloud
16:41:28	41.5311	-88.04652	2239	IntraCloud
16:41:28	41.53151	-88.05583	1898	IntraCloud
16:41:28	41.48786	-88.02122	3299	IntraCloud
16:41:47	41.52749	-88.02839	436	IntraCloud
16:41:47	41.49446	-88.02713	5850	IntraCloud
16:42:13	41.51859	-88.02841	12205	IntraCloud
16:42:21	41.4937	-88.09042	4703	IntraCloud
16:42:21	41.48952	-88.08845	923	IntraCloud
16:42:52	41.51663	-88.01615	1138	IntraCloud
16:42:52	41.52033	-88.01653	3467	IntraCloud
16:42:52	41.51292	-88.02034	984	IntraCloud
16:42:52	41.48679	-88.01241	-4202	CloudToGround
16:43:20	41.52296	-88.05	2934	IntraCloud
16:43:21	41.50343	-88.01864	-5106	CloudToGround
16:43:41	41.50272	-88.02449	8915	IntraCloud
16:43:41	41.50742	-88.0256	799	IntraCloud
16:43:59	41.53423	-88.11543	-25082	IntraCloud
16:44:38	41.51784	-88.03904	10379	IntraCloud
16:45:07	41.58218	-87.97947	-25206	CloudToGround
16:45:26	41.52268	-88.00218	6842	IntraCloud
16:45:39	41.49134	-88.01902	6065	IntraCloud
16:45:53	41.5163	-87.99019	6347	IntraCloud
16:46:11	41.52951	-88.02616	7616	IntraCloud
16:46:31	41.50672	-87.99541	13294	IntraCloud
16:46:49	41.49682	-88.00868	4336	IntraCloud
16:46:49	41.49599	-87.99705	5248	IntraCloud
16:47:18	41.5132	-87.99703	6605	IntraCloud
16:47:56	41.4975	-87.98427	16650	IntraCloud
16:48:22	41.49069	-88.00319	4029	IntraCloud
16:48:45	41.52248	-88.01446	9286	IntraCloud
16:49:08	41.51183	-87.99441	4302	IntraCloud
16:49:09	41.50632	-88.00183	7099	IntraCloud
16:49:25	41.5269	-87.98753	12440	IntraCloud
16:49:43	41.49633	-87.99159	9891	IntraCloud
16:49:43	41.49032	-88.00848	1505	IntraCloud
16:49:49	41.53925	-87.98505	4816	IntraCloud
16:49:59	41.52951	-88.02307	6506	IntraCloud
16:50:12	41.53536	-88.00814	-1734	IntraCloud
16:50:12	41.51306	-88.01986	-23400	CloudToGround
16:50:25	41.52104	-87.98415	4042	IntraCloud
16:50:39	41.54155	-87.98775	604	IntraCloud
16:50:39	41.53442	-87.99479	2566	IntraCloud

16:50:47	41.5616	-87.98891	1182	IntraCloud
16:50:51	41.48944	-87.98185	5697	IntraCloud
16:51:01	41.5572	-88.01005	1397	IntraCloud
16:51:01	41.56082	-87.99113	2220	IntraCloud
16:51:01	41.56994	-87.98967	-1619	IntraCloud
16:51:01	41.57161	-87.98942	-1322	IntraCloud
16:51:10	41.52295	-87.9934	20207	IntraCloud
16:51:13	41.5613	-87.9822	1168	IntraCloud
16:51:27	41.52094	-87.98428	3093	IntraCloud
16:51:28	41.50807	-87.98298	1395	IntraCloud
16:51:28	41.52184	-87.98407	-8068	IntraCloud
16:51:29	41.55583	-87.98406	858	IntraCloud
16:51:29	41.557	-87.99066	3074	IntraCloud
16:51:38	41.56324	-87.99265	-1716	IntraCloud
16:51:41	41.4741	-88.05176	525	IntraCloud
16:51:41	41.54778	-87.98357	5736	IntraCloud
16:51:52	41.53984	-87.91617	2415	IntraCloud
16:51:52	41.54913	-87.99273	-897	IntraCloud
16:51:52	41.54396	-87.98749	7608	IntraCloud
16:51:52	41.5413	-87.97215	-1736	IntraCloud
16:51:53	41.49757	-87.97037	4954	IntraCloud
16:51:53	41.49817	-87.9709	3489	IntraCloud
16:51:58	41.56861	-87.99341	931	IntraCloud
16:52:12	41.52677	-87.97358	3933	IntraCloud
16:52:20	41.55758	-87.96486	-6609	IntraCloud
16:52:28	41.49727	-87.9729	4098	IntraCloud
16:52:28	41.49846	-87.97459	3648	IntraCloud
16:52:28	41.49555	-87.9753	4560	IntraCloud
16:52:43	41.53682	-87.96084	-1714	IntraCloud
16:52:43	41.56762	-88.01714	-3389	IntraCloud
16:53:05	41.50436	-87.96781	10447	IntraCloud
16:53:21	41.51995	-87.98188	6703	IntraCloud
16:53:35	41.52929	-87.98561	-4171	IntraCloud
16:53:52	41.55689	-87.96634	9409	IntraCloud
16:54:00	41.57278	-87.97885	554	IntraCloud
16:54:00	41.5704	-87.97722	3964	IntraCloud
16:54:13	41.56933	-87.9516	-4494	IntraCloud
16:54:23	41.55128	-87.98664	9188	IntraCloud
16:54:29	41.57166	-87.97451	1909	IntraCloud
16:54:39	41.5279	-87.96681	2022	IntraCloud
16:54:39	41.53142	-87.95492	3006	IntraCloud
16:54:39	41.52054	-87.97115	7026	IntraCloud
16:54:44	41.5703	-87.96458	1070	IntraCloud
16:54:44	41.57617	-87.97868	-1404	IntraCloud
16:54:52	41.57553	-87.95913	653	IntraCloud
16:54:52	41.5569	-87.94765	-5814	IntraCloud
16:54:55	41.53	-87.97023	730	IntraCloud

16:54:55	41.53274	-87.96871	3197	IntraCloud
16:55:02	41.56599	-87.96656	2010	IntraCloud
16:55:03	41.55386	-87.97571	452	IntraCloud
16:55:03	41.55272	-87.97482	452	IntraCloud
16:55:03	41.5515	-87.97254	6386	IntraCloud
16:55:10	41.53948	-87.93921	-5923	IntraCloud
16:55:16	41.56323	-87.99022	2542	IntraCloud
16:55:20	41.5571	-87.94021	1308	IntraCloud
16:55:20	41.55723	-87.95883	3751	IntraCloud
16:55:23	41.57552	-87.96365	1072	IntraCloud
16:55:23	41.5764	-87.96726	422	IntraCloud
16:55:23	41.58359	-87.95099	1501	IntraCloud
16:55:29	41.61445	-87.9452	-11044	CloudToGround
16:55:37	41.55671	-87.98033	-3414	IntraCloud
16:55:45	41.55608	-87.96842	5015	IntraCloud
16:55:51	41.57674	-87.97547	1406	IntraCloud
16:55:55	41.48463	-87.93627	-4003	CloudToGround
16:56:00	41.57558	-87.96782	853	IntraCloud
16:56:00	41.55339	-87.96311	2779	IntraCloud
16:56:04	41.56467	-87.94051	620	IntraCloud
16:56:06	41.5299	-87.93954	1438	IntraCloud
16:56:06	41.52966	-87.93776	-732	IntraCloud
16:56:06	41.51914	-87.94845	3902	IntraCloud
16:56:09	41.57163	-87.94524	1954	IntraCloud
16:56:12	41.4908	-87.95784	-2737	IntraCloud
16:56:17	41.55725	-87.96483	4536	IntraCloud
16:56:17	41.5596	-87.96605	1804	IntraCloud
16:56:22	41.54111	-87.94207	8935	IntraCloud
16:56:27	41.56953	-87.95589	561	IntraCloud
16:56:27	41.56794	-87.95328	2003	IntraCloud
16:56:28	41.55744	-87.94776	-4636	IntraCloud
16:56:29	41.54391	-87.97962	1674	IntraCloud
16:56:29	41.54279	-87.98009	1514	IntraCloud
16:56:29	41.54029	-87.97978	335	IntraCloud
16:56:31	41.52694	-87.95708	-5166	IntraCloud
16:56:38	41.53186	-87.94984	9689	IntraCloud
16:56:42	41.57227	-87.95518	856	IntraCloud
16:56:42	41.55876	-87.9754	2960	IntraCloud
16:56:44	41.53624	-87.943	7714	IntraCloud
16:56:51	41.53243	-87.94925	728	IntraCloud
16:56:51	41.52964	-87.98151	4347	IntraCloud
16:56:54	41.55848	-87.93065	2251	IntraCloud
16:56:54	41.56543	-87.92984	-911	IntraCloud
16:56:58	41.51863	-87.95169	8717	IntraCloud
16:57:01	41.56701	-87.97232	4137	IntraCloud
16:57:05	41.52737	-87.92595	-3421	IntraCloud
16:57:11	41.4781	-87.9135	-5336	CloudToGround

16:57:15	41.52897	-87.94805	3473	IntraCloud
16:57:19	41.5536	-87.96104	2569	IntraCloud
16:57:21	41.52777	-87.949	2511	IntraCloud
16:57:25	41.52872	-87.96096	5258	IntraCloud
16:57:30	41.53129	-87.94052	4455	IntraCloud
16:57:34	41.54707	-87.94909	7522	IntraCloud
16:57:39	41.55277	-87.92028	7506	IntraCloud
16:57:44	41.55698	-87.96844	6944	IntraCloud
16:57:46	41.53434	-87.93684	727	IntraCloud
16:57:46	41.53161	-87.93674	838	IntraCloud
16:57:46	41.52832	-87.93253	6640	IntraCloud
16:57:53	41.55836	-87.93609	4857	IntraCloud
16:57:55	41.52704	-87.92702	-5660	IntraCloud
16:57:57	41.56118	-87.92874	1371	IntraCloud
16:58:03	41.52275	-87.95775	3212	IntraCloud
16:58:11	41.53981	-87.96807	608	IntraCloud
16:58:11	41.5444	-87.94638	7996	IntraCloud
16:58:14	41.52911	-87.93191	1711	IntraCloud
16:58:15	41.53646	-87.93417	13115	IntraCloud
16:58:20	41.53378	-87.95461	-5333	IntraCloud
16:58:27	41.53787	-87.95543	1178	IntraCloud
16:58:27	41.53745	-87.96316	4077	IntraCloud
16:58:27	41.51391	-87.93551	5764	IntraCloud
16:58:32	41.55212	-87.95007	5302	IntraCloud
16:58:37	41.54443	-87.95331	1208	IntraCloud
16:58:37	41.54137	-87.93398	5274	IntraCloud
16:58:40	41.55473	-87.9348	11300	IntraCloud
16:58:44	41.53691	-87.94184	4452	IntraCloud
16:58:50	41.53712	-87.94261	10695	IntraCloud
16:58:58	41.52309	-87.95411	4172	IntraCloud
16:59:01	41.55186	-87.96411	3875	IntraCloud
16:59:08	41.55675	-87.92196	9599	IntraCloud
16:59:14	41.52134	-87.93539	7899	IntraCloud
16:59:20	41.54839	-87.92486	2098	IntraCloud
16:59:21	41.55819	-87.93571	619	IntraCloud
16:59:21	41.56468	-87.92875	4274	IntraCloud
16:59:23	41.49833	-87.96619	3672	IntraCloud
16:59:26	41.53256	-87.99412	-21927	CloudToGround
16:59:30	41.54079	-87.93659	10666	IntraCloud
16:59:38	41.53258	-87.93142	6009	IntraCloud
16:59:40	41.52745	-87.96985	1551	IntraCloud
16:59:44	41.51409	-87.94567	6068	IntraCloud
16:59:50	41.5339	-87.94057	6910	IntraCloud
16:59:58	41.55503	-87.95441	6193	IntraCloud