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December 29, 2020

Via Electronic Mail
Mr. Tom Griffiths

CONFIDENTIAL Work Product: Review of
Grand Jury Testimony, CAST Reports and
preliminary cell phone records

Dear Mr. Griffiths:

At your request, I have reviewed the grand jury testimony of Lt. Leonard Scott Smith, and the FBI prepared CAST reports for the phones of Mr. Christian Martin, and Ms. Pamela Phillips. For my analysis, I also relied on the raw call detail with location data reports and NELOS records provided where the raw data wasn't specifically included in the FBI CAST reports.

The following analysis is strictly focused on the data and claims in the pre-existing FBI CAST report and the Grand Jury testimony (transcribed and audio recording) of Lt. Leonard Scott Smith. In general, my review of the above information shows that Lt. Smith's Grand Jury Testimony ("GJT") is often not supported by the CAST reports, is misleading as it relates to the actual data, contradicts the data, and excludes evidence in the report which refutes his testimony. Additionally, in a few areas, the CAST report itself may have been prepared or manipulated in a manner that conceals important information that conflicts with the Grand jury testimony.

Problems with claims made by Lt. Smith that aren't substantiated or contradict the CAST reports or the preliminary raw data:

- Lt. Smith GJT claim #1, FBI findings that Mr. Martin's phone was not at home on the night of the murders.
- Lt. Smith GJT claim #2, FBI findings that Mr. Martin's phone was "On Rosetown Road" during the night of the murders

Neither of these findings are possible or should be taken from the FBI CAST report for Mr. Martin's phone ("Martin CAST report"), or even from the raw data that I've had a chance to review so far. First and foremost, neither specific finding of either of these two claims can be found in the Martin CAST report. Rather, an interpretation of the CAST report would be

required to make this determination. Not to put too fine a point on this, but that determination was not done by the FBI expert in the CAST report, but rather was made solely by Lt. Smith in the GJT who I don't believe has been presented as an expert in any manner related to cell phones or cellular networks.

Due to the coverage overlap of the two sites in question, it is impossible to make a definitive conclusion about exactly where Mr. Martin's phone was that night. This is likely why such a conclusion is not actually found in the CAST report. During the night in question (November 18, 2015), Mr. Martin's phone is shown by the CAST report to use both cells that are generally expected and shown to cover the Martin residence. The fact that these sites ALSO cover other areas CAN NOT be used to conclude that Mr. Martin's phone had to be somewhere other than at home. To the contrary, use of these cells would be consistent with his device being at his home.

Additionally, Lt. Smith's stated conclusion that Mr. Martin's device had to be "on Rosetown Road" is not supported by any version of the evidence using the information presented in the CAST report or any other information available to law enforcement. This claim is not made in the Martin CAST report. It is not possible for anyone to make a determination to that level of detail or certainty with any of the available raw data or data in the Martin CAST report. These sites serve a large area that encompass the Martin residence and surrounding area. At best, the serving cell information in the CAST report only narrows down the location of the device to about 50-60 square miles. Any statements or claims that a device had to be in a very specific location, narrow area, or along a particular roadway are unfounded and show a distinct lack of knowledge, understanding, or honesty about the underlying data.

- Lt. Smith GJT claim #3, "the morning that the vehicles [sic] was found, Pamela's phone was taking a route toward Ft. Campbell where Major Martin worked".

Contrary to the GJT, this determination and claim does not appear anywhere in the FBI CAST report for either Mr. Martin or Ms. Phillips. Such a claim would be impossible with the data available. The only possible information in the Phillips CAST report that could be misconstrued to this claim is on page 10 (Bates 000915). This shows one NELOS report at 8:07 AM on November 19, 2015 from a tower located south of Pembroke at the I-24 interchange with Pembroke Rd. There is no sector information associated with the NELOS report. The site in this one NELOS record is the exact same site that has sectors that in the Martin CAST report were previously shown to potentially provide service to the Pembroke area and areas north of Pembroke. Since this site/cell is known and expected to cover the Pembroke area, and was specifically called out by the Martin CAST report as covering the Pembroke area, there is no justifiable basis in the report or for anyone reviewing the Phillips CAST report to claim that the Phillips device moved south towards Ft. Campbell.

To the contrary, reviewing the Martin and Phillips CAST reports together make it clear that these two devices could not have been both traveling towards Ft. Campbell at the same time as Lt. Smith claimed. It shows that it was impossible for Mr. Martin to have Ms. Phillips' phone while he was in Ft. Campbell that day, since the devices were clearly located in completely different areas on very different and isolated cell sites at exactly the same time on a multitude of

occasions. As detailed in the Martin CAST report, Mr. Martin's phone remained on one of his primary home sectors prior to 9:21 AM. This is well over an hour after the 8:07 AM NELOS record for Ms. Phillips phone discussed above. Additionally, once Mr. Martin's phone does start to move, the device clearly progressed through a number of different cells all with a generally southerly course, and all well away from Pembroke to sites and cells that would never be expected to provide service to Pembroke or areas to the north. The CAST report for Ms. Phillips device shows that it generally moved the opposite direction to the northeast, away from Ft. Campbell. There was additional NELOS information in the raw data that was alluded to but not specifically included in the Phillips CAST report that would provide even more additional support for this movement of the Phillips device away from Mr. Martin's device (Ft. Campbell), during the same time that Mr. Martin's device was in Ft. Campbell. Even without this excluded information, it is impossible to conclude from these two CAST reports that Mr. Martin was likely in possession of Ms. Phillips's phone while he traveled down to and was in Ft. Campbell. Rather, the data in the CAST reports make it clear that it was impossible for Mr. Martin to both be in Ft. Campbell and also have Ms. Martin's phone during these times.

There were a handful of items that I found while reviewing the Martin CAST report that are either inaccurate or misleading as well.

The FBI CAST report for Mr. Martin's phone on page 12 (Bates 1623) claims that LTE Cell 71521 "does not appear to cover any of the noted locations". While this is specifically called out on that page, subsequent page 16 (Bates 01627), and to a less clear extent previous page 11 (Bates 1622) displays data that clearly contradicts this assessment. Page 16 depicts the dark blue "DOMINANT signal from the tower" and light blue "WEAKER (but potentially usable) signal" from the tower. This clearly shows that this lighter signal was specifically excluded or otherwise removed from the page 12 image. Excluding this additional weaker coverage could have been a mistake or done intentionally in an effort to support that conclusion, but it had to be excluded in order to present the incorrect conclusion that was provided. Without this lighter/weaker color coverage area on page 12, the map is incorrect, and the conclusion is wrong. Page 11 likely has this same information, but the star used to mark the location of the homicides literally obstructs and covers up any detail that would make this clear. Had this information been included in the image on page 12, it would have been impossible to make such a claim that this LTE Cell 71521 "does not appear to cover any of the noted locations". Rather, with the coverage information provided on Page 16, the statement should have been presented as "LTE Cell 71521 appears to potentially cover any and all the noted locations". This is the exact opposite of what was stated in the CAST report.

It appears that the drive-test coverage areas were used and presented in an attempt to definitively conclude which areas a site must and must not provide serve. This is not strictly possible, and the data should not be used for that purpose in these scenarios. The fact that a narrow "sliver" of the "drive-test coverage" doesn't directly overlap a specific location that it's near should not be used to determine as a factual certainty that that cell could never serve that area. To the contrary, the proximity of the "drive-test coverage" to an area, combined with the weaker signal overlap could be used to show that an area might be served by that overlapping or nearby serving site/cell.

Page 13 of Mr. Martin's CAST report (Bates 01624) shows a very zoomed in view of the burned vehicle location, and the "drive-test coverage" for UMTS Cell 31701 and LTE Cell 71521. No specific claims are made in the CAST report as to Mr. Martin's phone being at that location. This is because, as shown above, it's impossible to make such a claim from this data. There is no basis from this page, or from ANY part of the Martin CAST report for Lt. Smith to make the claim that Mr. Martin's phone was "On Rosetown Road", or in proximity to the burned vehicle. To the contrary, since both of the sites shown that could cover this area could also cover the Martin residence, no conclusion should be drawn about a specific location, other than perhaps the sites used were consistent with sites that are known and expected to serve the Martin residence. This is of critical importance, because it impossible for Lt. Smith or anyone to make the claim that the FBI report said his phone could not have been at his residence.

The Cast report for Mr. Martin's phone on Pages 14 and 15 (Bates 001625 & 001626) show varying degrees of detail associated with the "drive-test coverage" from LTE Cell 30913 as it deals with the location of the homicides and burned vehicle. The most detailed/zoomed in map on page 15 doesn't even go into the level of detail (zoom) that the previously discussed page 13 map did. Even so, it's clear that the burned vehicle location likely isn't even directly within the weaker less likely service area from this cell. However, it does show that Mr. Martin's residence is located within this weaker less likely service area for this cell. If these maps were reviewed as a basis for claiming that Mr. Martin's phone was NOT at home during the 9:03 and 9:05 PM LTE SMS records, that would be an incorrect conclusion. The maps show the opposite, that it's possible that Mr. Martin's phone was at his residence at this time. There is no indication that his device could not have been at home, or that it had to be on Rosetown Road. These maps show that it's entirely plausible that Mr. Martin's phone was still at home, but just using a different cell that is also likely to serve his home area.

These maps on page 14 and 15 should also be considered in light of Lt. Smith's claim that Ms. Phillips device traveled towards Ft. Campbell. These maps clearly show that signal from that site in particular could have just as easily, and far more likely been serving the device in or around the Pembroke area, instead of down towards, Ft. Campbell.

Pages 16 & 17 in Mr. Martin's CAST report (Bates 001627 & 001628) also shows the case that this cell and these NELOS records cannot be used to indicate that Mr. Martin's phone was on Rosetown Road. Rather, these records are consistent with his phone being at home. These call records are EXACTLY what we would expect if his phone was at home. There is nothing to imply that his phone had to be in any other location.

There are two primary problems with Ms. Phillips CAST report.

First, while NELOS measurements are referenced throughout the report, not all the locations are specifically identified and in fact, most of the NELOS records are disregarded, and certainly not mapped. Considering how prominently the one single NELOS record at 8:07:02 AM is presented on its own single slide, one could infer that these are critical records. Instead, the records preceding and following that 8:07:02 AM NELOS record are only briefly mentioned. The fact that 8:06 AM has a NELOS record for the site that covers Pembroke, the 8:07:02 AM is a record from a site located south of Pembroke at I-24 and Pembroke Road, which has been

shown to also be expected to cover Pembroke is not mentioned. Additionally, there is no mention whatsoever that the very next NELOS measurement at 8:07:42 AM (only 40 seconds later) was taken from a site northeast of Elkton. Due to the close proximity in time for these three records, it certainly would be expected to include ALL of these records on one page, rather than single out the 8:07:02 AM record in its own slide with no slide or map whatsoever for the immediately (40 second later) record in a completely different site. The fact that any NELOS record has a location accuracy greater than 25000 meters is immaterial to the site location providing service and shouldn't cause the NELOS measurement to be in anyway diminished or discarded as it was in the report.

That same site northeast of Elkton is referenced in the Phillips Cast Report page 11 due to incoming calls text messages and calls while the device was on that site. This confirms and is consistent with the device either still being in Pembroke or starting to move generally to the northeast of Pembroke, as clearly evidenced by the records on page 11. Leaving this information out of the report or diminishing it with a reference to the location accuracy only being 25000 meters shows a lack of understanding or lack of disclosure of the information contained in the NELOS reports and the importance of what it means to any analysis.

Second, these CAST reports make the wrong assumptions and incorrect use of the location accuracy information in the NELOS reports. It is a common error to view these location accuracy values as an actual cell range of the device, or a hard limit or distance of where a device has to be located from that site. However, neither of these assumptions are correct. Rather, the location accuracy information on these reports is typically just a cell radius associated with the sector that handled the "ping" from the device at that time. That cell radius is generated and defined by a network engineer like me when working through and completing the 911 emergency calling information that is on file for any cell site. The intent of the cell radius is to give a general estimate or idea for where the site/cell might serve. Due to terrain and power limitations each site or sector will have one radius assigned to it. That's why for each unique location in the NELOS report, the associated location accuracy is the same distance each time. Each site/sector has one cell radius assigned to it, and it won't change in the NELOS reports, unless a different cell of the same site is used with a different radius. The location accuracy or cell radius should not be used to make a specific determination on the location of a device, but rather can serve as a general guide to how much area a site might serve. In more dense urban areas with lots of sites, these location accuracies will tend to be smaller due to the smaller distance between sites. In rural areas with larger distances between sites, these distances will tend to be larger.

Once I have received the requested raw data from the FBI that was used to generate the CAST reports, I will perform my own analysis and issue a complete report and provide that to the legal team.

Prepared by:

Jonathan D. Reeves

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President

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Documents reviewed for this analysis included:

FBI Cellular CAST Report for Christian R. Martin November 6, 2017, modified March 22, 2019 (“Preliminary FBI CAST Report for Christian Martinb.pdf” Bates 000906-000818)

Christian R. Martin Cell Phone Records (“Voiceb.pdf” Bates 002542-002546 and AT&T scanned documents)

Christian R. Martin Phone Data Records (“Datab.pdf” Bates 002235 and AT&T scanned documents)

Christian R. Martin Cell Phone NELOS records (“NELOSb.pdf” Bates 002408 and AT&T scanned documents)

FBI Cellular CAST Report for Pamela Phillips April 5, 2019 (“Preliminary CAST Report for Pam Phillipsb.pdf” Bates 000906-000818)

Pamela Phillips Cell Phone Records (“Voiceb.pdf” Bates 002183-002185 and AT&T scanned documents)

Pamela Phillips Cell Phone NELOS records (“NELOSb.pdf” Bates 002171 and AT&T scanned documents)