

## **Summary of Expert Findings**

### **1. Expert Report of Walter A. Wetherington (Appendix D)**

On December 7, 1999, the Office of Special Counsel retained Mr. Walter Wetherington, Former Chief Arson Investigator and Assistant Director of the Bureau of Criminal Investigation, Virginia State Police, to evaluate the U.S. Government's Independent Fire Investigation and review evidence related to the fire that destroyed the Branch Davidian complex on April 19, 1993. The Office of Special Counsel specifically retained Mr. Wetherington to:

- (1) Determine whether agents of the United States started the fire that killed members of the Branch Davidian group on April 19, 1993;
- (2) Determine whether agents of the United States contributed to the fire that killed members of the Branch Davidian group on April 19, 1993;
- (3) Determine whether the U.S. Government's Independent Fire Investigation accurately and completely defined the cause of the fire and its point(s) of origin;
- (4) Determine whether additional information can be developed concerning the cause and/or point(s) of origin of the fire<sup>1</sup>; and
- (5) Determine whether fire fighters could have controlled or stopped the spread of the fire.

In addition to the qualifications stated above, Mr. Wetherington is also the Former Director of the Virginia Arson Investigation School and Internal Director of Training for the Cronin Group, Anti-Terrorism Program. Mr. Wetherington is an expert in fire and arson investigations and is the only person in history to serve as both President of the International

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<sup>1</sup> The Office of Special Counsel also retained Mr. Wetherington to determine and confirm the location of physical evidence that related to the cause of the fire.

Association of Arson Investigators and International Director of the International Association of Bomb Technicians and Investigators. Mr. Wetherington has more than 29 years of experience in fire and arson investigations.

The Office of Special Counsel selected Mr. Wetherington on the basis of his extensive experience in investigating fire and arson related matters. Prior to being retained by the Office of Special Counsel, Mr. Wetherington had no prior involvement with any investigation into the events occurring at Waco Texas on April 19, 1993. Moreover, before commencing work for the Office of Special Counsel, Mr. Wetherington signed a statement promising his complete impartiality throughout the investigation and guaranteeing that he would not make public any information relating to the investigation.

In September 2000, Mr. Wetherington provided the Office of Special Counsel his “Final Report Concerning the Fire at the Branch Davidian Complex Waco, Texas April 19, 1993.” Mr. Wetherington concluded:

(1) Agents of the United States did not start the fire that killed members of the Branch Davidian group. The Davidians started three separate and distinct fires inside the Branch Davidian complex. There is no evidence to support the theory that a single fire was responsible for all the fires that erupted inside the Branch Davidian complex. The fires were of the Davidians’ own design and they coordinated the execution and timing of initiation.

(2) Agents of the United States contributed to the spread of the fire only insofar as openings made by the CEVs damaged the building and supplied additional ventilation, which intensified the fire at certain locations. These openings, however, provided larger and additional escape routes for the Branch Davidians.

(3) The United States Government's Independent Fire Investigation accurately defined the intentional cause of the fire and its points of origin.

(4) Additional information can be and was developed concerning the cause and points of origin of the Branch Davidian complex fire.

(5) Firefighters could not have controlled or stopped the spread of the fire had they responded on the first visible sign of the fire.

## **2. Expert Report of Dr. Ulf Wickström (Appendix E)**

On December 21, 1999, the Office of Special Counsel retained Dr. Ulf Wickström, Head of the Department of Fire Technology at the Swedish National Testing and Research Institute, to evaluate the U.S. Government's and Plaintiff's expert fire analysis and review evidence related to the fire that destroyed the Branch Davidian complex on April 19, 1993. The Office of Special Counsel specifically retained Dr. Wickström to:

- (1) Determine whether agents of the United States started the fire that killed members of the Branch Davidian group on April 19, 1993;
- (2) Determine whether agents of the United States contributed to the fire that killed members of the Branch Davidian group on April 19, 1993;
- (3) Determine whether additional information can be developed concerning the cause and/or point(s) of origin of the fire;
- (4) Determine the time of ignition for individual fires;
- (5) Determine whether fire fighters could have controlled or stopped the spread of the fire;
- (6) Determine whether the Branch Davidians had the opportunity to escape the fire;
- (7) Determine whether the analyses of Dr. James Quintiere, the U.S. Government's fire dynamics expert and Patrick Kennedy, a fire dynamics

expert retained by the Branch Davidians, accurately and completely defined the cause of the fire and its point(s) of origin; and

- (8) Determine whether heat from the fire affected the structural integrity of the concrete bunker roof.

The Swedish National Testing and Research Institute ("SP") is a Swedish organization headquartered in Borås, Sweden and owned by the Swedish government. The Fire Technology Department, under Dr. Wickström's direction, is one of the world's leading authorities in projects concerning material reactions to fire, structural response to fire, media and equipment for extinguishing fires and fire dynamics. The SP primarily works for the Swedish government and private companies based throughout the European Union. The executive and operational control of the SP is under its Board of Directors, all of whom are Swedish nationals.

The Office of Special Counsel selected Dr. Wickström on the basis of his unique and extensive background in heat transfer and structural fire analysis. Dr. Wickström is a world renowned expert in the analysis of indoor structural fires. He has a Ph.D. in Fire Safety Engineering from the University of Technology at Lund, Sweden and a Master of Science degree from the University of California at Berkeley. Prior to his engagement with the Office of Special Counsel, he had no involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. Moreover, in advance of commencing work, Dr. Wickström signed a statement promising his complete impartiality throughout the investigation and guaranteeing that he would not make public any information relating to the investigation.

In October 2000, Dr. Wickström provided the Office of Special Counsel his "Fire analysis of the events at Waco, Texas, 19 April 1993." Dr. Wickström concluded:

- (1) There is no evidence that agents of the United States started the fire that killed

members of the Branch Davidian group on April 19, 1993. Instead the near simultaneous ignition of accelerant fires at numerous locations throughout the Branch Davidian complex, three of which developed into sustained fires that eventually burnt down the complex, indicates that the Branch Davidians deliberately started the fires.

(2) Agents of the United States contributed to the spread of the fire only insofar as damage to the structure created by the government CEVs may have accelerated the fire at the location of the damage. The exit holes created by the CEVs increased the ventilation within the Branch Davidian complex, accelerating the spread of the fire in some areas and retarding it in others.

(3) In cooperation with Office of Special Counsel experts Klasén, Madsen, and Wetherington, Dr. Wickström improved and broadened information concerning the spread of the Branch Davidian fire. In particular, the ignition time and point of origin for each of the sustained fires set by the Branch Davidians has been thoroughly investigated.

(4) The fire started and maintained itself in three separate locations. Fire #1 started shortly before 12:04 p.m. at the stage in the rear of the chapel. Fire #2 started between 12:05 p.m and 12:06 p.m in the cafeteria. Fire #3 started between 12:06:30 p.m and 12:07:30 p.m in the red/white tower.

(5) Theoretically, the fire could have been fought successfully if firefighting began within two minutes after the fires were discovered. Firefighters, however, would have to have worked without fear of being shot at or repelled by the occupants of the structure. The response by firefighters would have had to be direct and immediate, that is, the equipment and personnel ready on scene, adjacent to the complex, and with knowledge of the layout of the

Branch Davidian complex and the location of the people inside. However, in light of the fact that firefighters could not safely approach the complex until after 12:30 p.m due to Davidian gunfire, it was not possible for them to extinguish the fire.

(6) The Branch Davidian complex was a relatively small and low building with short escape routes. With the exception of the Branch Davidians located in the concrete bunker, the occupants could have walked away from the fire if they so wanted. Davidians inside the bunker may not have been aware, until escape was no longer possible, of the fires started in other parts of the complex, including fires in the cafeteria.

(7) Drs. Quintiere and Mowrer, the U.S. Government's fire dynamics experts, thoroughly and accurately reported the development of the Branch Davidian complex fire. However, their theoretical analyses are in some respects based on wrong assumptions. Patrick Kennedy, a fire dynamics expert retained by the Branch Davidians, is unsupported in his accusations concerning the Government's fire investigation.

(8) The round hole at the center of the concrete bunker roof was caused by spalling which resulted from the intensive heat of the fire.

### **3. Expert Report of Dr. Jerry Havens (Appendix F)**

On December 7, 1999, the Office of Special Counsel retained Dr. Jerry Havens, Director of the University of Arkansas Chemical Hazards Research Center and Distinguished Professor of Chemical Engineering at the University of Arkansas, to evaluate independently the dispersion, concentration, and fire hazard presented by the tear gas (CS and Methylene Chloride) introduced into the Branch Davidian complex on April 19, 1993. The Office of Special Counsel retained Dr. Havens to:

- (1) Predict the concentrations over time of CS and methylene chloride gas in the rooms and compartments of the Branch Davidian complex on April 19, 1993;
- (2) Determine whether CS gas caused or contributed to the spread of the fire in the Branch Davidian complex;
- (3) Determine whether methylene chloride gas caused or contributed to the spread of the fire in the Branch Davidian complex; and
- (4) Determine the cause of the explosion and fireball that occurred at 12:26 p.m. at the Branch Davidian complex on April 19, 1993.

Dr. Havens is widely regarded as the world's leading authority on predicting atmospheric dispersion of denser-than-air gases. He frequently lectures on state-of-the-art techniques for gas dispersion modeling and has studied the application of these models to flammable cloud analyses. Dr. Havens served on the U.S. Environmental Protection Agency Scientific Advisory Board Evaluation Panels convened to evaluate the Superfund activities of Pennsylvania, and on the Commission of European Communities Research and Development Directorate Research Proposal Review Board. He also serves on the National Ocean Service Program Review Board and the editorial boards of the Institution of Chemical Engineering Journal (Europe) and the Journal of Hazardous Materials. Dr. Havens is also a member of the Working Group on Destruction of Chemical Weapons of the Organization for the Prevention of Chemical Weapons (OPCW) Scientific Advisory Board, which is responsible for monitoring the destruction of chemical weapons worldwide.

The Office of Special Counsel selected Dr. Havens on the basis of his more than 30 years of experimental and gas dispersion modeling experience and his unique background in fire and explosion hazard assessments. Prior to his engagement with the Office of Special

Counsel, Dr. Havens had no prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. Moreover, in advance of commencing work, Dr. Havens signed a statement promising his complete impartiality throughout the investigation and guaranteeing that he would not make public any information relating to the investigation.

In September 2000, Dr. Havens provided the Office of Special Counsel his "Analysis of Flamibility Hazards Associated with the Use of Tear Gas at the Branch Davidian Complex Waco, Texas, April 19, 1993." Dr. Havens concluded:

(1) The COMIS computer model accurately predicted the potential concentrations of tear gas components orthochlorobenzylidenemalononitrile (CS) and methylene chloride accumulated in all rooms, halls and stairwells of the Branch Davidian complex during the period beginning 6 a.m. and ending at 12:20 p.m. on April 19, 1993. This model, among other things, estimated the effect of wind driven ventilation on tear gas concentrations inside the complex.

(2) CS did not cause or materially contribute to the spread of the fire. The concentrations, in air, of CS solid (dust) throughout the complex were insufficient (locally) to support combustion. The temperature of any CS gas accumulations on surfaces inside the complex was insufficient to cause ignition before the fire started. Moreover, the small amounts of any such CS gas accumulations did not materially contribute to the spread of the fire.

(3) Methylene chloride did not cause or materially contribute to the spread of the fire. The concentrations, in air, of methylene chloride throughout the complex were insufficient (locally) to support combustion. The temperature of any methylene chloride gas accumulations on surfaces inside the complex was insufficient to cause ignition before the fire started.

Moreover, the small amounts of any such accumulations did not materially contribute to the

spread of the fire.

(4) The explosion/fireball observed at 12:26 p.m. during the Branch Davidian complex fire resulted from a boiling liquid expanding vapor explosion (BLEVE) of a liquified petroleum gas (LPG) tank. The LPG tank ruptured due to exposure to the intense heat of the Branch Davidian complex fire. The size and shape of the observed fireball is consistent with a BLEVE of a LPG tank equal in capacity to the ruptured LPG tank recovered from the Branch Davidian complex fire debris.

**4. Expert Report of Mr. Chris Mills and Ms. Elizabeth McClelland, Network International (Appendix G)**

On January 20, 2000, the Office of Special Counsel retained Network International to analyze audio evidence collected by the FBI during the fifty-one day siege on the Branch Davidian complex. The Office of Special Counsel retained Network International to:

- (1) Determine whether the audio tracks on the April 19, 1993, FBI FLIR video tapes are original and authentic;
- (2) Determine whether the audio tracks on the April 19, 1993, FBI FLIR video tapes were altered or erased;
- (3) Enhance and prepare a written transcript of the audio tracks from the April 19, 1993, FBI FLIR video tapes;
- (4) Determine whether the cassette tapes recorded by the FBI listening devices on April 19, 1993 are original and authentic;
- (5) Enhance and prepare a written transcript of the cassette tapes recorded by the FBI listening devices on April 16-19, 1993;
- (6) Identify Davidian speakers on the cassette tapes recorded by the FBI listening devices on April 16-19, 1993;
- (7) Determine whether the cassette tapes recorded by the FBI listening devices

on April 19, 1993 contain evidence of gunfire;

- (8) Determine whether the audio track of an FBI April 19, 1993 ground video contains evidence of gunfire.

Network International is a UK registered company, part of Control Risks Group with associates and offices worldwide. The company's Forensic Sciences Division specializes in providing detailed forensic analysis of audio and video tapes, computer systems, handwriting, documents and fingerprints.

Network International's Forensic Sciences Division works for a variety of UK public and private customers including Scotland Yard, DERA, HM Customs & Excise, Local Police Units, and the UK National Crime Squad. The executive and operational control of Network International's Forensic Sciences Division is vested in the UK staff, all of whom are UK nationals.

The Office of Special Counsel selected Network International on the basis of its Managing Director and Senior Audio Consultant, Mr. Christopher Mills. Formerly Director of Scotland Yard's Forensic Audio Laboratory, Mr. Mills has an extensive and unique<sup>2</sup> background in the authentication, enhancement and transcription of audio and video taped information. Mr. Mills is a world renowned expert in forensic audio analysis and prior to his engagement with the Office of Special Counsel, has had no prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. Prior to commencing work, Mr. Mills signed a

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<sup>2</sup>In January 1998, Prime Minister Tony Blair announced a judicial inquiry into the 1972 "Bloody Sunday" killings in which British Paratroopers shot 14 Roman Catholic demonstrators in Londonderry, Northern Ireland. The British Government has long maintained that the shootings were triggered by Catholic gunman firing on the troops. Catholics who witnessed the event accused the soldiers of firing in an unprovoked attack. The inquiry team retained Mr. Mills to review audio evidence of the events of Bloody Sunday.

statement promising his complete impartiality throughout the investigation and guaranteeing that he would not make public any information relating to the investigation.

In addition to Mr. Mills, the Office of Special Counsel retained Network International on the basis of its affiliation with Ms. Elizabeth McClelland, an internationally recognized forensic phonetician. The Office of Special Counsel asked Ms. McClelland to assist with the speaker identification tasks assigned to Network International. Ms. McClelland is a founding member of the International Association for Forensic Phonetics, and has served as an independent expert in legal proceedings involving speaker identification, transcripts and disputed utterances for more than 10 years. She is a member of the British Association of Academic Phoneticians, and on the Editorial Board for the International Journal of Speech, Languages & the Law. Ms. McClelland has had more than 30 years of study in the field of phonetics.

The Office of Special Counsel selected Ms. McClelland on the basis of her extensive background in forensic phonetics and her lack of prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. Prior to commencing work for the Office of Special Counsel, Ms. McClelland also signed a statement promising her complete impartiality and guaranteeing that she would not make public any information relating to the investigation.

In July 2000, Network International provided the Office of Special Counsel its “Title III, FLIR Tape and FBI Video Analysis: Events at Waco, Texas 19<sup>th</sup> of April 1993.” In it Mr. Mills and Ms. McClelland conclude:

(1) The audio tracks on the April 19, 1993, FBI FLIR video tapes Q1, Q2, Q4 and Q5 are original and authentic. The audio tracks on the April 19, 1993, FBI FLIR video tapes Q6

and Q7 are copies.

(2) The audio tracks on the April 19, 1993, FBI FLIR video tapes Q1, Q2, Q4 and Q5 are unaltered and have not been interfered with in any way. In particular, FLIR Tape Q4 is an original tape that has had its recording interrupted at 10:47:16 by a manual operation of the original recording machinery. As a result, FLIR Q4 has been recorded in two separate sections [a] 10:42:06 to 10:47:16 and [b] 10:51:57 to 12:16:13. Neither recorded section on FLIR Tape Q4 contains speech information.

(3) The transcripts at Appendices B6 through B9 represent their very best efforts at interpreting and deciphering the information contained on the April 19, 1993, FBI FLIR video tapes.

(4) The cassette tapes recorded by the FBI via Title III listening devices on April 19, 1993, are original and authentic. There is no electronic or auditory evidence that the cassette tapes from the April 19, 1993, Title III intercepts have been stopped, restarted, paused or otherwise interfered with during their recording sequence. There is also no evidence that the cassette tapes from the April 19, 1993, Title III intercepts have been subjected to any copying process.

(5) The transcripts at Appendices B4 and B5 represent their very best efforts at interpreting and deciphering the information contained on the cassette tapes from the April 19, 1993, Title III intercepts. The transcripts at Appendices B1, B2, and B3 represent their very best efforts at interpreting and deciphering the information contained on segments of the cassette tapes from the April 16, 17 and 18, 1993, Title III intercepts.

(6) The sound quality in the April 19, 1993, Title III cassette tapes are not at a

standard where Forensic Speaker Identification conclusions can be reached at a level of certainty. On an auditory-phonetic basis, however, some features of the questioned voices were found to match the reference speech samples provided by the Office of Special Counsel.

(7) The cassette tapes recorded by the FBI via Title III intercepts on April 19, 1993, do not contain conclusive evidence of gunfire emanating from inside the compound. There are, however, unspecified abrupt changes in sound level on the tapes. These changes in sound level are associated with loud sounds being received by the recording machine that exceed its maximum recording level.

(8) Because of the conditions within the Branch Davidian complex at the time of the recorded sequence, it is impossible to determine whether the “sharp crack - ammunition discharges” are ammunition being discharged from a firearm or ammunition exploding involuntarily due to the heat of the fire. From experience and acoustical examination it is only possible to say the “sharp cracks” on the ground video of the Branch Davidian fire sound and look acoustically like gunshots.

**5. Expert Report of Mrs. Lena Klasén, Orlunda Agro & IT and Mr. Sten Madsen, Aservice i Linköping (Appendix H)**

On January 13, 2000, the Office of Special Counsel retained Mrs. Lena Klasén of Orlunda Agro & IT<sup>3</sup> (“Orlunda Agro”) to review infra-red imagery taken by the FBI Nightstalker flying over the Branch Davidian complex on April 19, 1993. The Office of Special Counsel retained Mrs. Klasén to supplement the interpretive work of VDS (UK) and offer a separate and

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<sup>3</sup>At the time the Office of Special Counsel retained Mrs. Klasén, she was transitioning out of the SKL Swedish National Laboratory of Forensic Science where she headed the Imaging Unit, and into her own consulting service Orlunda Agro. Mrs. Klasén was temporarily employed by Aservice i Linköping during this transition.

independent scientific opinion concerning the content of the April 19, 1993, FLIR imagery using movement algorithms and computerized temperature measurements. The Office of Special Counsel retained Mrs. Klasén to apply her specialized scientific expertise to determine from the April 19, 1993, FLIR imagery :

- (1) Whether agents of the United States directed gunfire at the Branch Davidian complex;
- (2) Whether personnel can be seen on the ground in or near the Branch Davidian complex; and
- (3) When evidence of fire first appears at the Branch Davidian complex.

Orlunda Agro is a Swedish company, headquartered in Linköping, Sweden. The company specializes in providing detailed forensic analysis of video and FLIR imagery using advanced computer algorithms and exploitation techniques. Orlunda Agro, under the direction of Mrs. Klasén, works primarily in support of the National Laboratory of Forensic Science and the Swedish Police. The executive and operational control of Orlunda Agro is vested in Mrs. Klasén, who is also a Swedish National.

The Office of Special Counsel selected Mrs. Klasén, former Director of the Imaging Unit for the National Laboratory of Forensic Science in Sweden, on the basis of her extensive and unique background in the identification of human movement using image sequences and tracking algorithms on video and FLIR imagery. Mrs. Klasén is internationally recognized as leading the imagery community in cutting edge imagery exploitation and analysis. Prior to her engagement with the Office of Special Counsel, Mrs. Klasén has had no prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. Ms. Klasén signed a statement promising her complete impartiality throughout the Waco

investigation and guaranteeing that she would not make public any information relating to the investigation.

On January 13, 2000, the Office of Special Counsel also retained Aservice i Linkoping to analyze the FLIR video tapes taken by the FBI Nightstalker flying over the Branch Davidian complex on April 19, 1993. The Office of Special Counsel retained Aservice i Linkoping to:

- (4) Determine whether the video tracks on the April 19, 1993, FBI FLIR video tapes are original and authentic; and
- (5) Determine whether the video tracks on the April 19, 1993, FBI FLIR video tapes were altered or erased.

Aservice i Linkoping is a Swedish company, headquartered in Linkoping Sweden. The company specializes in providing detailed forensic analysis of audio and video tapes, computer systems, and imagery analysis.

The Office of Special Counsel selected Aservice i Linkoping on the basis of its owner Sten Madsen, an independent consultant and colleague of Ms. Lena Klasén. Mr. Madsen has an unique and extensive background in the authentication and enhancement of videotaped data. Among Mr. Madsen's customers are the Saab Military Aircraft Division, Saab Dynamics, Swedish Police, Swedish Defense Research Administration, Swedish Defense Material Administration, Swedish Army, Swedish Airforce and Bofors Underwater Technology. Prior to his engagement with the Office of Special Counsel, neither Mr. Madsen nor Aservice i Linkoping had any prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. The executive and operational control of Aservice i Linkoping is vested in its owner Mr. Madsen, who is a Swedish national. Mr. Madsen also signed a statement promising

his complete impartiality throughout the Waco investigation and guaranteeing that he would not make public any information relating to the investigation.

In October 2000, Mrs. Klasén and Mr. Madsen provided the Office of Special Counsel their Report titled "Waco Investigation: Image Analysis and Video Authentication."

Mrs. Klasén and Mr. Madsen concluded:

(1) The flashes on the FLIR videotapes from April 19, 1993, between 10:41 and 12:16 p.m. do not form evidence of gunfire. The flashes on the FLIR videotapes from April 19, 1993, between 10:41 a.m. and 12:16 p.m. are caused by solar or heat reflections from debris. Many of these flashes have been distorted in appearance by the unique operational characteristics of the FBI Nightstalker's FLIR system, including its SPRITE/TED detector, scanning mechanism and interlaced video format.

(2) No humans or human type movements were detected on the April 19, 1993, FLIR videotapes in the area surrounding any of the flashes. The only movement detected is associated with moving debris.

(3) A numerical analysis of pixel intensity and pseudo-color sequence processing of the FBI FLIR videotapes from April 19, 1993, confirm a heat source at the eave of the shaded side of the catwalk roof. This heat source is confirmed on the FLIR tape at 12:04:21, 12:05:13 and 12:06:13.

(4) FLIR videotapes Q1, Q2, Q3, Q4 and Q5 are original recordings. FLIR videotapes Q6 and Q7 are first generation copies from original masters.

(5) There is no evidence that the recorded visual portions of FLIR videotapes Q1, Q2, Q3, Q4 and Q5 have been altered, edited or erased. Although FLIR videotape Q4 is

interrupted from 10:47:16 to 10:51:57, this interruption appears to have been induced by the operator at the time of recording. There is no evidence to suggest that this portion of the FLIR videotape Q4 has been altered, edited or erased.

**6. Expert Report of Vector Data Systems (UK), Ltd. (Appendix I)**

On December 2, 1999, the Office of Special Counsel retained Vector Data Systems (U.K.) Ltd. (“VDS (UK)”) to review the infra-red imagery taken by the FBI Nightstalker aircraft flying over the Branch Davidian complex on April 19, 1993. The Office of Special Counsel retained VDS (UK) to determine from the April 19, 1993, FLIR imagery :

- (1) Whether agents of the United States directed gunfire at the Branch Davidian complex;
- (2) When visual evidence of fire first appears at the Branch Davidian complex; and
- (3) Whether personnel can be seen on the ground in or near the Branch Davidian complex.
- (4) The external dimensions and orientation of the Branch Davidian complex.

VDS (UK) is a UK-registered, majority-owned subsidiary of Vector Data Systems Inc.<sup>4</sup> and is located in Peterborough, England. The company specializes in providing imagery exploitation ground stations, imagery software, and imagery training. VDS (UK) also offers a wide-range of consultancy support, drawing on the staff’s extensive understanding of imagery requirements and first-hand operational experience. VDS (UK) works primarily for the UK Ministry of Defense, and prior to being retained by the Office of Special Counsel has never been under a direct contract with the U.S. Government. The executive and operational control of VDS

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<sup>4</sup>Vector Data Systems, Inc. is a wholly-owned subsidiary of the U.S. headquartered Anteon Corporation.

(UK) is vested in the UK staff, all of whom are UK nationals.

The Office of Special Counsel selected VDS (UK) on the basis of the staff's unique<sup>5</sup> and extensive background in strategic and tactical imagery analysis, reputation as a world leaders in imagery exploitation and analysis, and lack of prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993.

VDS (UK) assigned Nick Evans, Director Operations, Peter Ayres, Senior Imagery Analyst, and David Oxlee, Imagery Exploitation Manager to the FLIR Trial and 1993 FLIR tape analysis. Messrs Evans, Ayers, and Oxlee have more than 100 years of collective experience in strategic and tactical imagery analysis. Prior to commencing work, Messrs Evans, Ayres, and Oxlee obtained U.S. security clearances at the top secret level. All VDS (UK) employees also signed a statement promising their complete impartiality throughout the investigation and guaranteeing that they would not make public any information relating to the investigation.

On May 8, 2000, VDS (UK) issued its "Imagery Analysis Report: The Events at Waco, Texas 19 April 1993." VDS (UK) provided copies of the Final Report to the U.S. District Court for the Western District of Texas and the Office of Special Counsel. In the Final Report, VDS (UK) concluded with absolute certainty:

(1) The 57 thermal events ("flashes")<sup>6</sup> captured by the FBI's thermal imaging system on April 19, 1993, including the alleged sighting of a person at 11:34:33 a.m. are all

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<sup>5</sup>Mr. David Oxlee has prior experience viewing gunfire on FLIR imagery.

<sup>6</sup>The term "thermal event" or "flash" is used in to describe a time sequence in which a thermal anomalie(s) appears on the FLIR tape. Thus a thermal event may contain one or more related flickers of light on the FLIR tape during the selected sequences

caused by passive specular solar reflection, active thermal reflection, or movement of debris. None of the 57 flashes are caused by gunfire.

(2) The first visual outbreak of the fire indicated on the April 19, 1993, FLIR imagery occurs at 12:07:43 p.m. on the second floor of the Branch Davidian complex in the Red/White corner. A near-simultaneous outbreak occurs at 12:08:26 at the entrance to the cafeteria/kitchen area.

(3) No persons are seen on the April 19, 1993, FLIR imagery until 12:10:50 p.m. Thereafter numerous personnel (assumed to be Government personnel by their actions) attend the fire.

(4) A detailed mensuration of the Branch Davidian complex was performed from still and video images. The results of this mensuration are attached to their Report.

**7. Expert Report of Dr. Michael Graham, Chief Medical Examiner, City of St. Louis (Appendix J)**

On December 2, 1999, the Office of Special Counsel retained Dr. Michael Graham, Chief Medical Examiner for the City of St. Louis to review autopsy files, pathological evidence and other pertinent information related to the events that occurred at the Branch Davidian complex on February 28, 1993 and April 19, 1993. The Office of Special Counsel retained Dr. Graham to:

- (1) Assess the process originally used to investigate the Branch Davidian deaths on February 28, 1993 and April 19, 1993, for consistency with accepted practices and procedures;
- (2) Conduct an independent review of the autopsies performed on the Branch Davidians to determine cause and manner of death;
- (3) Determine the manner in which Davidian Clive Doyle suffered burns to

his hands on April 19, 1993; and

- (4) Review the autopsy of and determine the cause of death for Dr. Carlos Ghigliotty, FLIR Expert for the House Committee on Government Reform, who was found dead in his office on April 28, 2000.

Dr. Michael Alan Graham, a board certified forensic pathologist, currently serves as the Chief Medical Examiner for the City of St. Louis. Dr. Graham is also a Professor of Pathology at the St. Louis University School of Medicine, where he serves as Co-Director of the Division of Forensic and Environmental Pathology. Dr. Graham specializes in sudden, unexpected and violent deaths, including firearm related deaths. He is frequently invited to lecture on medicolegal death topics, has written numerous papers, book chapters and books, and serves on the Board of Directors for the National Association of Medical Examiners. Dr. Graham has more than 15 years of experience as a forensic pathologist.

Prior to being retained by the Office of Special Counsel, Dr. Graham has testified as an expert in the field of forensic pathology on behalf of State and Federal authorities in numerous criminal matters. The Office of Special Counsel selected Dr. Graham on the basis of his unique expertise in sudden and violent death and his extensive background in forensic pathology. Dr. Graham has had no prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. Moreover, prior to commencing work for the Office of Special Counsel, Dr. Graham signed a statement promising his complete impartiality throughout the investigation and guaranteeing that he would not make public any information relating to the investigation.

In September 2000, Dr. Graham provided the Office of Special Counsel his final report: "Forensic Pathology Evaluation of the 1993 Branch Davidian Deaths and Other Pertinent

Issues.” Dr. Graham concluded:

(1) The overall process for recovering, identifying and examining the Branch Davidians’ bodies was carried out with proper authority and planning in an appropriate fashion by properly qualified personnel. The examinations were significantly hindered by the effects of fire, decomposition and, to a lesser extent, structural collapse. In some cases these hindrances detrimentally affected the pathologists’ abilities to offer opinions about the cause of death and other pertinent issues. Overall, the descriptions of the observations made during the postmortem examinations appear to be accurate and reliable.

(2) The recovered remains from the Branch Davidian complex include 54 adults (26 men and 28 women), 28 children (4 males, 21 females and 3 of undetermined gender) and two fetuses. Branch Davidian decedents recovered from the burned structure died of firearm injuries (20), smoke inhalation/thermal burns (33), blunt trauma (4), sharp trauma (1) and undetermined causes (18). The six bodies, all adults, recovered from the graves and the ravine all died of gunshots.

(3) The uniform diffuse burning of Davidian Clive Doyle’s hands is consistent with damage caused by ignition of an accelerant that has been spilled or splashed onto the skin. The burns to his hands are not consistent with burns caused by pushing against a burning door or wall.

(4) Mr. Ghigliotty’s death was a natural death due to his arteriosclerosis. There is no evidence to suggest foul play caused or contributed to his death.

## **8. Expert Report of Dr. George Lucier (Appendix K)**

On December 2, 1999, the Office of Special Counsel retained Dr. George W. Lucier, Director, Environmental Toxicology Program at the National Institute of Environmental Health Sciences (NIEHS) to independently evaluate the effects of methylene chloride on the inhabitants of the Branch Davidian complex on April 19, 1993.<sup>7</sup> The Office of Special Counsel retained Dr. Lucier to:

- (1) Determine whether methylene chloride killed or contributed to the death of any Branch Davidian on April 19, 1993; and
- (2) Determine whether methylene chloride incapacitated or disoriented any Branch Davidian such that they were unable to escape the fire on April 19, 1993.

In his capacity as Director of NIEHS, Dr. Lucier established new directions for the National Toxicology Program, the nation's most comprehensive toxicology testing program. Since 1970, Dr. Lucier has served as a researcher at NIEHS focusing his research group on molecular epidemiology and dosimetry. Dr. Lucier is widely recognized for his work in the areas of steroid action, mechanisms of dioxin toxicity, and xenobiotic metabolism and has published more than 200 articles in these areas. During the last 10 years, Dr. Lucier has helped to forge the emerging areas of molecular epidemiology and the development of laboratory approaches to improve risk assessment processes. Dr. Lucier has also served as Chairman of the Scientific Advisory Board for regulation of toxic air pollutants by the State of North Carolina.

The Office of Special Counsel selected Dr. Lucier on the basis of his unique and

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<sup>7</sup>On June 30, 2000, Dr. Lucier retired from his position as Director of the Environmental Toxicology Program at the National Institute of Environmental Health Services.

extensive background in environmental toxicology and prior work on high visibility human health risk assessments, including methylene chloride. Dr. Lucier is a world leader in the analysis of varied toxicological data and prior to his engagement with the Office of Special Counsel he had no prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. Before commencing work, Dr. Lucier signed a statement promising his complete impartiality throughout the investigation and guaranteeing that he would not make public any information relating to the investigation.

In October 2000, Dr. Lucier provided the Office of Special Counsel his Final Report: “Analysis of the Toxicity Hazards of Methylene Chloride Associated with the Use of Tear Gas at the Branch Davidian Compound at Waco, Texas on April 19, 1993.” Dr. Lucier concluded:

(1) Methylene chloride exposures did not kill any of the Branch Davidians on April 19, 1993. The highest blood concentrations predicted from the worst case exposure scenario was 65 mg/L. This compares to the range of blood methylene chloride concentrations in cases of fatal methylene chloride poisoning of 281-700mg/L.

(2) It is likely that some of the Branch Davidians could have experienced some form of central nervous system depression as a result of the exposure to methylene chloride at the concentration levels predicted inside the Branch Davidian complex. The effects likely could have led to decreased responsiveness to visual or auditory signals, irritation or dizziness. These effects would have been slightly more pronounced in children. It is also possible that exposure to methylene chloride may have caused a few of the Branch Davidians to become unconscious from smoke inhalation slightly earlier than he or she would have if methylene chloride exposures had

not occurred. Branch Davidians would have been able to escape the fire if they decided to do so right after the fire started. The greatest risk for MC influences on escaping the fire would be for the hypothetical case of a person who made an initial decision not to leave or who was prevented from leaving, then attempted to leave after they had suffered very significant smoke inhalation effects. Controlled testing, however, provided evidence against this possibility as rats administered low levels of CO (mimicking methylene chloride metabolism to CO) followed by much higher CO exposures, (mimicking fire exposure), exhibited the same or better escape reactions than rats receiving only the high CO exposure.

#### **9. Expert Report of Dr. Uwe Heinrich (Appendix L)**

On December 2, 1999, the Office of Special Counsel retained Dr. Uwe Heinrich, Director of the Fraunhofer Institute of Toxicology and Aerosol Research and Professor of Toxicology and Aerosol Research at the Hanover Medical School, to independently evaluate the effects of CS gas on the inhabitants of the Branch Davidian complex on April 19, 1993. The Office of Special Counsel retained Dr. Heinrich to determine whether CS gas killed or contributed to the death of any Branch Davidian on April 19, 1993.

The Fraunhofer Institute of Toxicology and Aerosol Research (“Fraunhofer ITA”) located in Hanover, belongs to the Fraunhofer Society for the Advancement of Applied Research, the second largest research organization in Germany. The Fraunhofer Society, as well as its 48 institutes, are partially supported by the German government, but 60-70% of the budget is covered by contract research and development for public institutions and industry. Under the direction of Dr. Heinrich, Fraunhofer ITA is one of the leading inhalation toxicology research centers in the world. With more than 20 years of experience, Dr. Heinrich is one of the world’s

foremost inhalation toxicologists and serves as advisor to various national and international institutions. Dr. Heinrich serves on the Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area and the Advisory Committee on Toxicology, Committee on Hazardous Substances, Ministry of Labour and Social Affairs. He is currently the Vice President of the International Society of Environmental Medicine and a Fellow of the Academy of Toxicological Sciences (U.S.).

The Office of Special Counsel selected Dr. Heinrich on the basis of his unique and extensive background in inhalation toxicology and work with aerosol health risks. Prior to his engagement with the Office of Special Counsel, Dr. Heinrich has had no prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. Moreover, in advance of commencing work, Dr. Heinrich signed a statement promising his complete impartiality throughout the investigation and guaranteeing that he would not make public any information relating to the investigation.

In October 2000, Dr. Heinrich provided the Office of Special Counsel his Final Report: "Possible lethal effects of CS tear gas on Branch Davidians during the FBI raid on the Mount Carmel compound near Waco, Texas April 19, 1993." Dr. Heinrich concluded that if the exposed Davidians were able to leave the affected rooms, avoid the affected rooms, or were able to protect themselves sufficiently by wearing gas masks, the exposure experienced on April 19, 1993, while uncomfortable, would not have caused lethal effects. However, if the exposed Davidians were not able to leave affected rooms, under the worst exposure scenarios, there is a distinct possibility that this kind of exposure could significantly contribute to or even cause lethal effects. However, CS-related toxicity in the respiratory tract does need some time to actually cause death.

**10. Expert Report of Mr. William George and Mr. John Kaltenbronn, St. Louis County Police Crime Laboratory (Appendix M)**

On December 2, 1999, the Office of Special Counsel retained Mr. William George and Mr. John Kaltenbronn to review ballistics evidence associated with the events that occurred at the Branch Davidian complex on April 19, 1993. The Office of Special Counsel retained Mr. George and Mr. Kaltenbronn to determine:

- (1) Whether twelve (12) .308 caliber spent shell casings collected from FBI sniper position Sierra One were fired from an FBI weapon.
- (2) Whether twenty-four (24) .223 caliber spent shell casings collected from FBI sniper position Sierra One were fired from an FBI weapon.
- (3) Whether fuel cans and lanterns recovered from the Branch Davidian complex possess any man-made puncture holes.

Mr. William George is employed by the St. Louis County Police Department headquartered in Clayton, Missouri. Mr. George specializes in the forensic discipline of firearm and toolmark examination and has 17 years of experience serving as a Firearm/Toolmark examiner for the St. Louis City and St. Louis County Police Crime Laboratory. In addition, Mr. George has 12 years of experience as a crime scene investigator. He currently serves an instructor at the St. Louis County and Municipal Police Academy on crime scene examination and advanced crime scene investigation. Prior to being retained by the Office of Special Counsel, Mr. George has testified on behalf of State and Federal authorities in numerous criminal matters and attended firearms identification training at the FBI Academy.

Mr. Kaltenbronn has more than 19 years of experience with the St. Louis County Police Crime Laboratory as a firearm and toolmark examiner and 8 years as a crime scene investigator. He also serves as an Instructor at the St. Louis County and Municipal Police

Academy on crime scene examination and advanced crime scene investigation.

The Office of Special Counsel selected Mr. George and Mr. Kaltenbronn on the basis of their extensive background in firearm and toolmark identifications and their membership in the Association of Firearm and Toolmark Examiners. Neither Mr. George nor Mr. Kaltenbronn have had any prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. Prior to commencing work, Mr. George and Mr. Kaltenbronn signed a statement promising their complete impartiality throughout the investigation and guaranteeing they would not make public any information relating to the investigation.

In August 2000, Mr. George and Mr. Kaltenbronn provided the Office of Special Counsel their Final Report: "Firearms and Toolmark Examination of Physical Evidence Relating to the Events at Waco, Texas on April 19, 1993." Mr. George and Mr. Kaltenbronn concluded:

(1) The twelve .308 caliber spent shell casings retrieved from FBI sniper position Sierra One were not fired from an FBI weapon.

(2) The twenty-four .223 caliber spent shell casings retrieved from FBI sniper position Sierra One were not fired from an FBI weapon.

(3) Three fuel cans and one lantern recovered from the Branch Davidian complex contain tool made puncture holes. Eleven additional fuel cans recovered from the Branch Davidian complex contain holes that are consistent with tool made punctures or damage caused by exploding ammunition.

#### **11. Expert Report of Dr. Gerry Murray and Mr. David Green (Appendix N)**

On December 17, 1999, the Office of Special Counsel retained Dr. Gerry Thomas Murray, Principal Scientific Officer, Explosive Section of the Forensic Science Agency of Northern Ireland to independently evaluate the concrete bunker at the Branch Davidian complex

for evidence of explosive residue or damage. The Office of Special Counsel also retained Mr. David Green, a criminalist with the Forensic Trace Evidence Unit, Lake County Regional Forensic Laboratory, Cleveland, Ohio to assist Dr. Murray with the collection and evaluation of physical evidence. The Office of Special Counsel retained Dr. Murray and Mr. Green to:

- (1) Determine whether agents of the United States used an explosive device to breach the concrete bunker on April 19, 1993; and
- (2) Determine whether agents of the United States used an explosive device to detonate the exploded propane tank recovered from the Branch Davidian complex fire debris.

The Forensic Science Agency of Northern Ireland is headquartered in Belfast, Northern Ireland. The Explosives Unit, under the direction of Dr. Murray, is one of the world's leading authorities in the analysis of micro-chemical explosive residue and in the terrorist use of explosive devices. The Forensic Science Agency, Explosive Unit, primarily supports local and national police efforts. In 1997, prior to being retained by the Office of Special Counsel, Dr. Murray served on an international panel of experts to investigate allegations of misconduct and improper practices within the Federal Bureau of Investigation Laboratory.<sup>8</sup> This panel recommended a substantial restructuring of the FBI's own explosives unit.

The Office of Special Counsel selected Dr. Murray on the basis of his unique and extensive background in the use and effects of military and terrorist style explosive devices. Dr. Murray has more than 26 years of experience investigating all aspects of the terrorist use of explosives in Northern Ireland and has been retained by several Governments to investigate terrorist materials located in those countries. Dr. Murray is a Chartered Chemist, a Fellow of the

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<sup>8</sup>See United States Department of Justice, Office of the Inspector General Report entitled: "The FBI Laboratory: An Investigation into Laboratory Practices and Alleged Misconduct in Explosives-Related and other Cases (April 1997)."

Royal Society of Chemistry, and an Officer of the Order of the British Empire.

The Office of Special Counsel selected Mr. Green on the basis of his reputation in the field of trace evidence analysis and explosives investigations. Mr. Green is a forensic chemist with more than ten years of experience in the collection and examination of trace evidence and crime scene processing.

Prior to their engagement with the Office of Special Counsel, neither Dr. Murray nor Mr. Green had any prior involvement with any investigation into the events occurring at Waco, Texas on April 19, 1993. Moreover, before commencing work, both Dr. Murray and Mr. Green signed a statement promising their complete impartiality throughout the investigation and guaranteeing that they would not make public any information relating to the investigation.

In September 2000, Dr. Murray and Mr. Green provided the Office of Special Counsel their Final Report: "Micro-chemical Explosive Residue and Blast Damage Analysis Concerning the Events at the Branch Davidian Complex in Waco, Texas." Dr. Murray and Mr. Green concluded:

(1) Government agents did not use a shaped charge or other high explosive device to breach the concrete bunker at the Branch Davidian complex on April 19, 1993.

(2) Government agents did not use an explosive device to detonate the exploded propane tank found amongst the fire debris of the Branch Davidian complex.