

THE PROS AND CONS OF A LARGE SCALE OUTSOURCING OF CONVICTED OFFENDER SAMPLES

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Through the passage of legislation in 1989, the Virginia Division of Forensic Science was charged with establishing a DNA Data Bank of blood samples drawn from all convicted sex offenders. In 1990, Virginia's Data Banking law was expanded to include all convicted felony offenders. Subsequently in 1996, the law was expanded again to include all juveniles 14 years and older who were convicted of what would be considered a felony if they had been tried as an adult.

Initially the Virginia Division of Forensic Science began to analyze the convicted sex offender blood samples in-house using the Restriction Fragment Length Polymorphism (RFLP) technology. Due to the approximately 25,000 new samples received by the Virginia Division of Forensic Science each year, by January of 1998 the Division had received over 150,000 convicted offender samples. During a 5 year period (1993-1997) the Division analyzed approximately 10,500 of these samples using the RFLP technology, which resulted in 30 DNA Data Bank "hits". However, with advances in DNA technology, it became apparent to the Division that typing both crime scene materials and analyzing convicted offender blood samples using short tandem repeats (STRs) offered significant advantages over the previously used RFLP technology. Due to the large number of convicted offender samples that were backlogged and the Division's inability to analyze this high volume of samples with its current staff, in 1998 the Virginia General Assembly provided funding and language in its 1998-2000 biennial budget to allow the Division of Forensic Science to outsource 50,000 to 70,000 samples per year over three (3) fiscal years (1999-2001) in order to eliminate the Division's existing backlog of 150,000 samples by the year 2001.

To ensure that the Division maintained control over the quality of work that would be conducted by the contract laboratory analyzing the convicted offender samples, the invitation to bid required the contractor to follow the same quality assurance standards and technical procedures utilized by the Division.

- The contractor was required to be accredited by the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) or certified by the National Forensic Science Technology Center (NFSTC). This accreditation/certification was required to be maintained throughout the contract period.
- The contractor was required to certify to the Division that all DNA STR testing would be performed in compliance with the DNA Advisory Board's "Quality Assurance Standards for Convicted Offender DNA Databasing Laboratories" and the "Guidelines for Acceptance of DNA Data into CODIS (Combined DNA Index System)".
- Each bidder was required to submit a written plan detailing how the analysis of a minimum of 1,000 samples per week would be handled.
- In order to allow for the Division to conduct periodic inspections, provide oversight of the work product and help in troubleshooting problems, as well as to minimize opportunities for loss of the samples during transport to and from the contract laboratory, the contractor's laboratory facility where the analysis would be conducted was required to be within approximately 150 miles of the Division's Central Laboratory in Richmond, Virginia.
- The contractor was required to use the same sample platform (i.e., Hitachi Software, FMBIO® Fluorescent Image Analysis System) as the Division, and amplify and type the STR profiles in accordance with the Division's procedures using the Promega *GenePrint™*PowerPlex™ 1.1 System (CSF1PO, TPOX, TH01, vWA, D16S539, D7S820, D13S317, and D5S818) kit. In

addition, the contractor was required to retain a portion of each convicted offender sample for future analysis at the remainder of the core CODIS loci (FGA, D8S1179, D18S51, and D3S1358) when the kits (i.e., *GenePrint™* PowerPlex™ 2.1 System) become available.

In July 1998, the Virginia Division of Forensic Science began to outsource these samples to The Bode Technology Group, Inc. located in Springfield, Virginia, at a rate of approximately 70,000 samples per year. Approximately 1 year after the Division began outsourcing the analysis of convicted offender samples and approximately 6 1/2 months after the Division began analyzing crime scene samples using STRs from cases where a suspect could not be identified, the division surpassed the number of DNA Data Bank "hits" it took 5 1/2 years to make using the RFLP technology. Although outsourcing of samples on a large scale has been demonstrated to be a positive approach to reducing the backlog of unanalyzed convicted offender samples, as well as helping law enforcement agencies in the commonwealth of Virginia to identify suspects in unsolved case, all of the hard work and effort is not solely conducted by the contract laboratory.

In order to handle the volume of samples (initially 2,000 and eventually settling on 4,000) that would be sent to the contractor on a semi-weekly basis, additional staff had to be hired to generate lists of samples that require analysis, locate, pull and package the convicted offender samples for distribution to the contractor, prepare the chain of custody documentation associated with each shipment of samples, and re-file the samples upon return from the contractor. The DNA Data Bank staff responsible for analyzing the convicted offender samples in-house had to significantly reduce the number of samples they each analyzed on a monthly basis in order to have sufficient time to review the large volume of analytical data returned from The Bode Technology Group, Inc. In addition, staff also had to be hired to upload into CODIS the 4,000 STR profiles returned to the Division on a semi-weekly basis.

Despite the reduction in the number of convicted offender samples analyzed by the Division's DNA Data Bank staff in-house and the need to hire additional staff to support the analysis of the convicted offender samples by the contractor, the Virginia Division of Forensic Science obtained a DNA Data Bank "hit" on an average of once a week during the first 8 months of 1999 due to the outsourcing of the convicted offender samples combined with an increase in the analysis of cases where a suspect could not be identified. Doubling the number of DNA casework examiners statewide during the past year with additional casework examiner staff anticipated during the upcoming year and the Division's continued commitment to outsourcing the analysis of convicted offender samples, undoubtedly the Division will continue to increase the number of DNA Data Bank "hits" at an even greater rate in the future using the STR technology.