

STATE OF VIRGINIA
DEPARTMENT OF TAXATION



AUDIT SAMPLING PROCEDURES

Table of Contents

INTRODUCTION	1
SALES AND USE TAX AUDIT PROCEDURE – AUDIT SELECTION	2
I. Objective.....	2
I. General.....	2
II. Procedures.....	2
SAMPLING & FRONT-END AGREEMENTS	10
I. Objective.....	10
II. History.....	10
III. References	10
IV. Definitions	10
V. General.....	12
VI. Procedures.....	13
VII. Reporting the Results.....	17
VIII. Front-End Agreements	20
INVOICE CAPTURE TOOL (ICT) pOLICIES AND PRECEDURES	23
I. Overview.....	23
II. ICT Audit Candidate Determination	23
III. Successful Identification of an ICT Candidate.....	26
IV. ICT Audit Team and Roles of Individual Players.....	27
V. TECHNICAL ASPECTS OF THE ICT AUDIT PROCESS	30
VI. ICT AUDIT RESULTS REVIEW AND EVALUATION	32
STATISTICAL SAMPLING PROCEDURES	34
I. Introduction.....	34
II. Starting a Statistical Sample	34
III. STATISTICAL SAMPLING FORMULAS AND EXPLANATIONS..	35
IV. GLOSSARY OF RELATED TERMS:.....	39
V. DEVELOPING THE STATISTICAL SAMPLE.....	40
VI. STATISTICAL SAMPLING GUIDELINES	42
VII. CREATING THE SAMPLE	46
VIII. Creating the Exception List for the Field Auditor.....	47

INTRODUCTION

The State of Virginia, Department of Taxation, has always had procedures for sampling in audits of sales and use tax. This manual will outline the auditing procedures used by the Department of Taxation. We have always used a block sampling as a basis of determining an error factor to compute an assessment. With the emergence of new technology, in conjunction with block sampling, we now use a software program (WIN. IDEA) to develop our samples, both statistical and non-statistical. We refer to this sampling program as ICT. Although systematic sampling and statistical sampling are a part of our ICT software, we elected to segregate systematic from statistical sampling in the manual to better assist the research of procedures by users of the manual.

AUDIT SAMPLING MANUAL

The audit manual is divided into the following three sections:

- 1. BLOCK SAMPLING-** This section covers all of the procedures to be followed in conducting an audit, especially where we would be using block sampling. Block Sampling being where we would select a certain block of time in the audit period and review all of the records in that period. This section also touches on sampling for front-end agreements.

- 2. ICT SYSTEMATIC SAMPLING-** This section covers all of the procedures to be followed using the ICT program. This is where we take electronic files of information, manipulate the data and develop a sample to be used by the field auditor. Systematic sampling is where the system will select every “Nth” record. That is to say that if we want to look at 20 records out of 100, we would tell the system to select every 5th record.

- 3. ICT STATISTICAL SAMPLING-** This section covers the procedures to be followed in performing a statistical sample using the ICT program. Whenever possible we will try to use statistical sampling as the main source for developing a sample to be used in sales and use tax audits.

The following procedures manual will be the source document for field auditors to use when conducting audits. If you have any questions regarding these procedures, please contact your supervisor who will direct your questions to the Director of Auditing or the ICT Team Leader.

SALES AND USE TAX AUDIT PROCEDURE – AUDIT SELECTION

I. Objective

Discuss the application of sales and use tax as it applies to audit selection.

I. General

The auditor is to conduct field audits of the taxes administered by the Department in order to determine taxpayer compliance. The ultimate goal is to have total compliance with the tax laws. Taxpayers selected for audit are those deemed to be in non-compliance. It is the auditor's job to identify those taxpayers most in need of audit.

II. Procedures

- A. There are two steps prior to the selection of audit candidates:
 - 1. Identification
 - 2. Research
- B. Identification - There are several sources used to identify audit candidates.
 - 1. Audit recommendations - These taxpayers have been identified by other auditors or other employees who have evidence of activity in Virginia or some of type of taxpayer error.
 - 2. Recurring audits - Based upon the results of the previous audit, these taxpayers were selected as potential candidates.
 - 3. Taxpayers with a large volume of exempt sales.
 - 4. New businesses.
 - 5. Business types - These traditionally have proven to be good audit candidates.
 - a. Manufacturers
 - b. Contractors
 - c. Professionals/Service Providers
 - 6. Auditor experience and expertise - with time and experience auditors develop a sixth sense and are able to identify viable candidates.
 - 7. AUDAP, and other Departmental reports and databases of registered taxpayers. The records in the databases can be queried and/or sorted by selected criteria in order to provide a useful listing for the identification of audit candidates.
 - 8. Complaints from the public
 - 9. Income tax returns

Audit Sampling Procedures

10. Information gathered from other agencies and states
 - a. DMV
 - b. Commissioner of Revenue
 - c. IRS
 - d. VECABC Board
 - e. SEATA Nexus Questionnaires
11. Other outside sources include the following:
 - a. Media - This includes newspapers, radio, television and billboards. Look for advertisements, advertising inserts, news articles or segments on businesses.
 - b. Dodge reports - These list contractors doing business or bidding to perform construction contracts in Virginia.
 - c. Business journals and other publications.
- C. Research - Once taxpayers have been identified as potential audit candidates, the auditor must use the resources available to him to determine if a taxpayer is actually a viable candidate for audit. This requires thorough research. This is the most important step in the selection process. Sources include:
 1. STARS - The department's primary source of information is STARS and the related reports generated from STARS.
 - a. Most research begins with the registration screens. Through review of these screens you may identify other candidates, and other tax types audits.
 - (1) 2-02 Identify all registrations for a particular name.
 - (2) 2-03 Once you have all the account numbers, identify the tax types associated with each account number, the address, and social security numbers of the owners. You may also discover a different trade name or legal name. Look for other accounts under these names.
 - (3) 2-04 - Provides a list of registration numbers associated with a consolidated filer.
 - (4) 2-01 - Check BLD's, ELD's.
 - (5) 2-16, 2-17 Check for related entities of the business and it's owners.
 - b. Payment/billing
 - (1) 3-01, 3-02 - These screens will provide payment records, including a detail of the local tax allocation.
 - (2) 3-27 - VA-6 Inquiry - The amount of withholding paid to Virginia and the number of W2's sent to Virginia is an indicator of the size of business and/or its activity in Virginia.

Audit Sampling Procedures

- (3) 4-01 - The account status may identify trouble/delinquent accounts.
- c. Tax returns
 - (1) 5-01, 5-02 - provide return detail for withholding and corporate taxes which will indicate activity in Virginia. Corporate return detail shows if the business is showing a profit or loss and how much income is being apportioned to Virginia.
 - (2) 5-03 - The detail of the sales tax returns indicates the volume of gross sales, exempt sales and personal use reported. Fluctuations in sales can be identified by reviewing the returns. Filing errors may be more obvious. Reporting errors can be identified when return totals for a particular time span are compared to other sources such as the income tax return.
 - d. Collection tracking - 8-03 - Collection history may provide additional information.
 - e. Audit
 - (1) 9-06 - Audit cross-reference - Provides a listing of prior audit activity for a particular account number.
 - (2) 9-07 - Results of previous audit - This will identify the areas of deficiency on the prior audit -sales, purchases and/or assets. Were issues contested, and subsequently revised?
- ## 2. AR/SEIBEL
- a. IRMS Research – Audit Case Management System Overview

The Siebel Audit Case Management System (ACM) is a sub-system of the Siebel Customer Relationship Management application. ACM is directly integrated with ADVANTAGE Revenue (AR), Professional Audit Support System (PASS) and the Compliance Repository (CR). PASS uses models to query various criteria to identify potential audit candidates from data included in CR. While PASS and CR are not available to auditors in the field, much of this information is available in ACM. Also keep in mind that ACM system is also utilized by our desk/office auditor staff so there are many fields and some view tabs that are not used by field auditors.
 - b. Siebel Research

There are two different Siebel applications for field auditors – Server Siebel (Siebel web-client) on TAX servers and Remote Siebel that resides on the local laptop. For research purposes, you should always use Server Siebel. (Most of the detail Siebel screens are not populated in Remote Siebel.) The following information can be found in Server Siebel:

 - On the Audit Cases screen, query the FEIN to determine the audit history of a particular customer. This results in a list of all audit cases for a particular customer

Audit Sampling Procedures

- All cases 2004 and forward
- Includes work paper archive for cases processed after August 2005
- Select the specific case that you wish to view – there is much information in the Audit Case Detail applet:
 - Demographic information
 - Case Type – Audit or Revised Audit
 - Case Tax Type
 - Compliance Code
 - Description and Comment fields
 - Tax Account Number
 - Legacy Tax Account Number, if any
 - Case Status
 - Date Case Created
 - Audit Span Period
 - Waiver Information, if entered by auditor
 - Recurring Audit Indicator and Date
 - Audit Team Members
- Go the Determination view tab to see the audit results for those audits closed under ACM
- Go to the Work papers view tab to review those audits closed under ACM
 - If you were part of the original audit team, you can go to Remote Siebel and query for the specific case, go to the Work paper view tab and then click the Review button.
 - You can do this even if you deleted the work paper file from your laptop
 - It is possible that you may have to synchronize before viewing the audit
- If you were NOT part of the original audit team, in Server Siebel go to the Attachment view tab and download the most recent *.zip file to your local laptop.
 - Unzip it in the normal Audit Workbench path in the appropriate application folder
 - Use the file name for folder name choice from the WinZip menu
 - Then open the appropriate Audit Workbench application from the desktop to view the audit.

Audit Sampling Procedures

- It is not possible to view audits directly from Server Siebel
 - See M:\OCR\Audit Archives for audit work papers for audits closed between 2002 and July 2005
 - Go to the Attachment view tab to ensure that you see files that may not have been included in the system generated *.zip and *.det files
 - Some of the more common file you might expect to see are *.doc, *.xls, *.mdb, *.jpg and *.pdf files.
 - Go to the Audit Trail view tab
 - A history of most fields on the Audit Case Detail applet that were changed while the audit was open can be seen here
 - Some work units use the Description and Comment fields to record a series of notations
 - Each comment is recorded in full on the Audit Trail
 - Go to the Siebel Consolidated screen
 - View the Activities associated to your customer
 - Can access all incoming communications here
 - View the various flags such as bankruptcy, active CACSG case, etc.
 - Go to the Siebel Customers screen
 - Go to the Tax Accounts view tab
 - Verify that the tax account you want to audit is listed there and that your audit span period is within the listed BLD/ELD
 - A new audit case cannot be created until the tax account information is properly listed in Siebel
 - Go to the Compliance Repository view tab to see what source information is available.
 - Besides TAX data, there are usually entries from VEC and DMV that may have helpful information
- c. AR Research

While research in ACM and Siebel can provide useful information, AR provides the best data to determine a customer's tax compliance. In the ideal situation, each customer will have only one Customer Profile, with all tax accounts associated to it. Since AR is the TAX system of record, all demographic and financial transactions are recorded here.

- Start your research at the Customer Profile

Audit Sampling Procedures

- If you are already in Server Siebel, there are “AR-Customer Profile” hot buttons on most Siebel applets that take you directly to the same customer in AR
- If not already in Siebel, simply query AR by FEIN, name, etc.
- The Entity type is identified in the window title bar of the Customer Profile
- From the Customer menu you can:
 - View Affiliations
 - This is important to determine parent/child relationships for corporations and for determining the tax accounts to which an individual is affiliated
 - View Relationships
 - For individuals, usually the spouse is the only relationship
 - See Affiliations – where ties to businesses display
 - View Bill Summary
 - Besides outstanding and paid bills, non-filers are also noted
 - View Notes
 - Any notes made by TAX reps are viewed here
 - If you add a note be sure to identify the specific tax account and the period(s) to which the note applies
 - View AR Correspondence
 - All incoming correspondence is viewed in Siebel, but outgoing correspondence is viewed in the application where it was created
 - View Customer History
 - History is system generated
- View the Address Manager
 - The various addresses will tell you where the business is located, where the records are kept, where the mail is sent, etc.
 - View the Business Location Manager (located in the Address Manager menu) to learn trade names, localities and association dates
- View the Tax Account
 - Totals tab is the default tab
 - Shows calendar year totals for tax paid
 - This is great for CU tax accounts because you can compare actual tax amounts between years

Audit Sampling Procedures

- For ST and UT, however, you can only see the total tax paid
- There is no way to see span totals in AR for just CU
- View Tax Account Entries Tax Type tab has information such as the BLD, ELD, current filing status, seasonal filing status, combined or consolidated status, the old STARS number, if any, and other valuable data
- Contact tab should list the specific contact for the specific tax account as well as telephone and fax numbers
- From the Periods tab you can view the balances of the individual Tax Account Periods (TAPs) or access a TAP
- From the Tax Account Menu you can:
 - View Tax Account Entries
 - Very helpful to get a quick overview of the entire tax account without having to view each individual TAP separately
 - Shows all entries for all TAPs
 - Double click a column heading and the display will automatically sort by that column heading
 - Great for trying to figure out on what TAP a Stop has been placed.
- View the Tax Account History
 - General History includes BLD and ELD changes, etc.
 - Address History is important for multiple location audits
 - Only place where closed business locations display
- Go to an individual TAP
 - Details for each period are located here including all financial entries (returns, payments, bills, stops, offsets, additional interest, etc.)
 - Currently the AR TAP filter is OFF by default
 - Therefore, all entries are visible
 - You may want to use the Tax Account Period menu to turn the filter ON to eliminate offsetting entries
 - This step can make the TAP easier to understand
 - Many windows are not expandable in AR, but the Tax Account / Periods window and the TAP / Entries window are
 - By pulling down the windows to the maximum vertical length you can see much more information without having to scroll

Audit Sampling Procedures

- If you access the return, you can go to the Return menu and select View Form to view the actual scanned document
- The Transaction Search is very helpful in these situations:
 - Need to view the return for each month
 - Use the Transaction Search icon and query for the FEIN, the specific tax, and use Returns for the transaction type
 - You can further limit to a specific period if desired
 - Please note the CU, Sales and UT are distinct taxes for this search
 - Saves several steps compared to going into each TAP to view the return
 - Find returns that are work listed
 - Use the Transaction Search icon and query for the FEIN, all tax types and choose Work list Items as the transaction type
 - If you locate work listed returns you cannot save any changes to the return, but you are able to view the return to obtain figures
 - Search for W-2 forms
 - No prior W-2 forms were transferred from STARS so 2005 is first year available
 - Click File, Close All to obtain a blank AR window – The Tax Information menu is now available
 - Select W-2 Information and enter the required information
 - Can query for all company W-2s or for an individual's SSN
- 3. Compare information provided - results of last audit to current filings; amount of WH to amount of CU or volume of sales; gross receipts per income tax returns to sales tax returns; tax reported to tax reported by similar businesses.
- 4. Inquiries - ask other auditors, employees, and local officials about their knowledge of the particular business in order to get a general feel for the business. Contact the business and ask questions.

D. Make selection

Weigh all the information you have reviewed in order to determine the feasibility of the candidate - revenue potential vs. time and other costs. Keep in mind that an audit candidate does not have to have a large revenue potential to be a good candidate. Small audits that can be done in a short amount of time are good candidates, too.

SAMPLING & FRONT-END AGREEMENTS

I. Objective

Discuss the audit technique of sampling for compliance. Discuss audit sampling and procedures for front-end agreements.

II. History

Sampling is an audit technique of significant value that is widely used in both the public and private sectors for all types of audits where a detailed audit would not prove beneficial either to the auditor or the client. When sampling techniques are applied, the final results are usually within a narrow percentage range of the actual amount that would have been determined by a detailed audit. The purpose of the audit sample is to determine a factor for errors within a representative selected period. Once the error factor is determined, the factor is extrapolated over the entire audit period. The purpose of the projection is to account for likely similar transactions on which Virginia tax has not been paid.

III. References

A. Code of Virginia, as cited

B. Virginia Administrative Code Title 23

C. Ruling Letters

PD 01-106	Record keeping
PD 01-96	Error Factor
PD 01-51	Credits Included In Sample
PD 01-50, PD 01-36	Isolated Transactions
PD 00-93, 01-130, 01-60	Withdrawals From Inventory

D. Applicable exemption certificate

IV. Definitions

Audit Sampling is defined as the application of audit procedures to less than 100% of the population to provide a conclusion on the level of compliance with the tax laws.

Population refers to all similar transactions during an audit period. There may be multiple populations in an audit. See also “Sample Base”.

Sample Period means the portion of the audit period which is reviewed in detail in order to project the findings over the entire audit period. Depending on the volume of records, the sample period may be days, weeks, months or years.

Audit Sampling Procedures

“Sample Base” means the data chosen to reflect the sample period for projection purposes over the audit period. Sample base usually conforms to the population of the sample period; but may be any consistent data on which the dealer and the auditor agree to use. For example, a sales audit with the month of May as the sample period may use gross sales (population) for the month of May as sample base to be used to arrive at an error factor to compute a liability/refund against gross sales for the entire audit period. The use of sales (population) data as a sample base in a purchase audit is an example of an agreed upon base.

“Block Sampling” means the use of all transactions in a selected period of time, combination of time periods, numerical sequence, or alphabetical sequence as the test period from which the sample is based.

“Statistical Sampling” means either the use of random-based sampling selection criteria, usually mathematically chosen random transactions throughout the audit period as the test for compliance; or systematic sampling criteria using a fixed interval between selections, the first interval having a random start. A computer program may be used to define and select transactions included in the sample.

“Structured Nonstatistical Sampling” means the use of defined criteria chosen by agreement between the taxpayer and the auditor as the test for compliance. For example, a recurring expense purchase sample may be used which contains only certain general ledger accounts that are identified to contain taxable transactions.

"Error Factor" refers to the percentage of records sampled which do not comply with the Virginia Retail Sales and Use Tax Regulations or the Code of Virginia. The error factor is computed by dividing the additional taxable sales/purchases by the gross sales/expense purchases reported for the period in question. Also known as **“margin of error”**.

"Extrapolate" means to infer or estimate by extending or projecting known information.

“Rollup Method” means to extrapolate the error factor evenly throughout the audit period. This assumes no fluctuation in business and produces a measure that is the same for all the periods in the audit. For example, a three-month sample in a three-year (36 month) audit period produces an untaxed measure of \$5,040.00. Rollup method would extrapolate \$1,680.00 per month or \$60,480.00 measure for the period.

"Fixed Assets" means depreciable property used in operating a business that will not be consumed or converted into cash or its equivalent during the current accounting period. Fixed assets also include property deducted under IRC Section 179. Assets may be deducted under IRC Section 179 if they are purchased for use in the active conduct of a trade or business and meet certain criteria.

"Recurring Expense Purchases" means non-depreciable ongoing purchases used in the everyday operation of a business.

“Withdrawals From Inventory” means the removal of tangible personal property from an inventory of items for resale for purposes other than resale.

Audit Sampling Procedures

“Front-End Agreement” refers to an agreement between the taxpayer and the Department of Taxation where the taxpayer will remit additional taxes on certain categories or general ledger accounts based on a single or multiple percentages which are derived from the results of an audit (either detail or sampled) of the taxpayer’s records for a predetermined period of time. Front-end agreements usually cover prospective audit periods and reduce the amount of time needed to perform an audit.

V. General

Audit sampling is examining less than all of the records of an audit period to determine the audit liability. Audit sampling is a technique used to compress the time required to perform an audit, and to minimize the volume of records examined. Sampling may be used in all types of audits. An audit period assessment that is based on a sample period and assessed by the Department of Taxation is prima facie correct and valid. The burden of proof that the sample is incorrect is upon the taxpayer.

An auditor should thoroughly “think through” the use of samples before beginning the audit. Audit sampling assumes that a rationally selected sample period is representative of the audit population. Consideration should be given to fluctuation in business and categories of transactions within the business as well as volume of records. The objective should be to choose sample periods which are representative of all transactions of the dealer in the audit period. Choose different periods for the different tax areas, if necessary.

In very large audits, the Department of Taxation has software that can aid in sampling. This software may be used with sales or purchases. An auditor experienced with the “Invoice Capture Tool” is available to work with field auditors on audits where the use of this software is beneficial. The software is used to stratify a population, or divide the population into relatively homogeneous subgroups called strata. These strata then may be sampled separately; the sample results may be evaluated separately, or combined, to provide an error factor for the total population. Whenever items of extremely high or low values or other unusual characteristics are segregated into separate populations, each population becomes more homogeneous. It is then easier to draw a representative sample from which a smaller number of items may be examined in each strata than to sample the total population. In addition to increasing the efficiency of sampling procedures, stratification enables auditors to evaluate materiality and other characteristics of items and to apply different audit procedures to each stratum.

Fixed assets should not be included in the sampling procedure. These items are not purchases that have recurred during the audit period. Asset purchases which are expensed (IRC Section 179) should be detailed along with capitalized fixed assets. The depreciation schedule should show expensed asset purchases. Cross check Form 4562 from the federal income tax return; it will show the dollar value of Section 179 property and will clue the auditor to request purchase invoices for these items if not seen elsewhere.

Audit Sampling Procedures

VI. Procedures

A. To Sample or not to Sample

It is important to consider various aspects of the taxpayer's business when deciding on a sample audit. Some type of sample can usually be used on most businesses. An evaluation of the type of business and sampling opportunities should be done. The basic characteristics of the business and the method of reporting must be consistent throughout the audit period. If characteristics of the business change during the audit period, separate samples should be made for each specific period to determine the individual error factors for each period. A sample should contain sufficient transactions to produce an accurate error factor representative of the business as a whole.

Check the prior audit comments for the methods used by the prior auditor. Research payment record and returns data to get information on taxable and exempt sales and fluctuation of business. By entering data into the STAUDN returns data screen, the program can be used to identify potential sample periods using various criteria. Does the return data appear to be correct in that gross sales and exempt sales are being reported on the return rather than just taxable sales? Ask the question in the initial contact if there is doubt. This may affect the periods chosen for sampling. Is there any familiarity with the nature of the business and the type of customers (exempt versus taxable)? Is the taxpayer selling to industrial and commercial customers? Are the invoice amounts on average small amounts? Is this taxpayer a multi-state dealer? What portion of total sales are Virginia sales?

The auditor should use the initial contact to obtain information about the business which will aid in the decision of whether or not to use sampling and the methods of sampling which would be most effective to obtain an accurate result. Inquire about the volume, nature & seasonality of the business, volume and organization of records, changes in accounting methods, software, and personnel responsible for administering taxes. Are invoices available in hard copy for will you be able to view them on computer screen? Some companies now have the capability to download information to disk for your viewing on your computer.

Suggest to the taxpayer that a sample audit could be done to minimize the number of records and time needed to do the audit. Time and effort are as important to the taxpayer as they are to the auditor. Discuss sampling and share with the taxpayer the statistics from the returns screen data. Ask the taxpayer to be thinking about sample period(s) that would be representative of the overall business during the proposed audit period and for which records are readily available. This will give him period(s) to consider and time to evaluate the sampling concept.

At the beginning of the audit, review sampling again. By this time, you have evaluated the possibilities and opportunities for sampling from your initial conversation with the taxpayer. Now is the time to firm up the sample period and consider methods. Be sure the dealer understands the mechanics of

Audit Sampling Procedures

sampling and agrees to the months selected. Remember that taking the time to fully explain how the audit process works generates goodwill and makes finalization much easier for both parties. When a sample is performed, a signed sample agreement from the dealer detailing the sample period and extent of the sampling may be desirable. Signed sample agreements can defuse later challenges to the validity of the sample. The sample agreement should note the sample period and class of transactions being sampled (sales, purchases). The auditor should inform the taxpayer or his representative that signing a sample agreement does not jeopardize his right to contest or appeal any portion of the audit with which he is not in full agreement.

Exemption certificates should be examined before beginning sales samples. This examination will alert the auditor to large volume, exempt customers and also give a warning to potential liability based on the information contained on the exemption certificate as well as helping to identify which customers for which exemption certificates are not on file. Title 23 of the Virginia Administrative Code (VAC 10-210-280) explains that the burden of proving that the tax does not apply rests with a dealer unless he takes, in good faith from the purchaser or lessee, a certificate of exemption indicating that the property is exempt under the law. A certificate that is incomplete, invalid, infirm or inconsistent on its face is never acceptable. The regulation further provides that an exemption certificate cannot be used to make a tax-free purchase of any item of tangible personal property not covered by the exact wording of the certificate. Therefore, the seller must use reasonable care and judgement in selling tangible personal property exclusive of the tax, even when an exemption certificate from the purchaser is in his file. Furthermore, certificates of exemption obtained during or after an audit situation will be accepted only if the auditor can confirm that the customer's use of the certificate was valid and proper for the specific transaction.

B. Sample Design

Sample design covers the method of selection, the sample structure and plans for analyzing and extrapolating the results. There are many ways in which a sample can be selected. If the volume of invoices is small, larger sample periods may be selected. Detail audits may be appropriate when they can be accomplished in a short time frame. This allows the auditor to examine all facets of the business, which may reveal other audit opportunities. A combination of methods may be the answer, depending on the circumstances.

1. Records

Code of Virginia 58.1-633 requires every dealer "to keep and preserve suitable records of the sales, leases, or purchases. . .and such other books of account as may be necessary to determine the amount of tax due hereunder, and such other pertinent information as may be required by the Tax Commissioner". When a dealer fails to maintain adequate records, the department is authorized by Code of Virginia 58.1-618 to use the best information available to reconstruct a dealer's sales or purchases to

Audit Sampling Procedures

determine whether a tax liability exists. A sample of records on hand may be used to reconstruct data for an audit. Cancelled checks, credit card statements, bank deposits, items of public record, or statements by the taxpayer may be used when there are no records available. Any sample projected on this basis is considered prima facie correct.

2. Sales

How are the records organized? Block sampling is particularly useful in sales audits and is the historical method used by department auditors. If sales invoices are available by invoice number in date order, the sample period could be a block of invoices less than a year. Monthly sales journals give flexibility to examine one-month blocks and tie tax collected to returns. If the only invoice information available is by customer by year, the auditor may have to examine an entire year of invoices to see all invoices.

If the business is seasonal, both the auditor and the taxpayer must be satisfied that the time block is representative.

Statistical sampling is useful in sales audits where the volume of transactions is large. In the best of audit environments, a sample chosen based on the volume of the dealer is preferable. Usually, a one-month to three-month sample is adequate. When transactions are fairly consistent, choose an average month as a sample. A three-month sample selecting one month from each of the three years of the audit period, or using the high, low and average months as indicated by the return statistics are additional options. If you are auditing a particularly large business such as manufacturers or retailers, consider a much smaller sample, such as one week.

If there are different categories of sales where dollar amounts fluctuate, such as equipment sales, parts sales, and repair sales, you may want to use a combination of sample methods or a combination of sample and detail methods.

3. Purchases

Review the chart of accounts to identify which accounts are used for charging taxable purchases. Make a note of construction-in-progress and other suspense accounts used to initially charge depreciable assets. These accounts should be examined for purchases, that may be reclassified and capitalized later. Negotiation with the taxpayer may be necessary to separate the items to be considered assets and those that may be included in the expense purchase sample. Also note intercompany accounts which may contain charges not seen elsewhere.

The method used for sampling purchases should be determined by the size of the taxpayer and their filing system. Many taxpayers file purchase invoices by vendor, by year. The year may be calendar or fiscal. If the volume of records is small, a one-year block sample may be advisable. By scheduling the audit near the end of the first six months of the year, the use of a six-month sample period instead of an entire year would be possible.

Audit Sampling Procedures

If purchase invoices are batched and filed by voucher number sequence or by pay dates, there is much more flexibility in negotiating a sample period with the taxpayer that is smaller than twelve months, and covering more than one year of the audit period. Statistical sampling is a good choice where the number of transactions is very large.

The general ledger detail or an accounts payable ledger for a chosen sample may be used to select invoices to be examined. This can save time over looking at all the invoices in a sample period. Use of the general ledger assures that you are seeing all the transactions during a certain period. This can be valuable when there are intercompany charges for which no invoice is present. Remember to consider withdrawals from inventory, which may or may not show up on the books of the taxpayer.

C. Unusual Items

There is always the possibility that isolated errors may occur which are not typical of a taxpayer's operations. For an item to be removed from an audit sample, a taxpayer must establish that the transaction was an isolated event and not a normal part of its operations. Allow the taxpayer to produce documentation that this was an isolated event and not a part of his regular course of business.

Before any item of unusual circumstance is omitted from the sample, the auditor should thoroughly analyze and discuss the situation with the Audit Supervisor. Factors that should be taken into consideration before an item is excluded or included are: the size of the item is excessive compared to the normal items and occurs only at rare intervals; the sale or purchase is a type not ordinarily handled; or the item involves some unusual circumstance. Consider expanding the sample or reaching a compromise that would be fair to the taxpayer and to the Department of Taxation.

D. Credits Against the Sample

1. Sales

When conducting a sales audit the taxpayer has the legal right to bill its customers for the sales tax not originally collected. Those customers may have been audited, or they may have properly accrued the untaxed sale made to them. Most taxpayers feel that in this case, the exception should be removed from the sample; however, this is not a reason to remove the sale from the sample. A one-time credit is given on a separate schedule when it is established that a customer has paid the tax. This is done because there are likely similar transactions outside the sample period on which the tax has not been paid. To remove the exception would invalidate the sample. The likelihood that every other customer with a similar transaction in the other months of the sample accrued and paid the tax is remote.

2. Tax Collected in Error

Taxpayers who have nexus in other states sometimes collect taxes from their customers based on the customer's location rather than the ship to location. This erroneously collected tax is remitted to the other state rather than

Audit Sampling Procedures

Virginia. Any dealer who collects tax in excess of a 4 1/2% rate or who otherwise overcollects the tax, is required to remit the over collection to the state. Virginia sales where the taxpayer has collected another state's tax are included in the sample using a measure amount to recover the amount of tax collected. If the taxpayer elects to research over collections and either refund or credit the customer's account, a credit may be taken on a future return.

3. Expense Purchases

Sometimes it is impossible to trace accruals from the return to an invoice. In these instances, the best approach is to list all untaxed taxable purchases made during the sample period and all untaxed taxable fixed assets acquired during the entire audit period. Extrapolate the sample measure and give credit for the measure accrued on a separate schedule. This should produce an audit liability that allows for the following:

- a. Inconsistent accrual of use tax.
- b. Accrual of use tax based on a percentage of sales, or some fixed dollar amount.
- c. Inability to identify the invoices and/or items accrued.

4. Tax Accrued in Error

Taxpayers may accrue tax on nontaxable purchases. A credit is given on the sample schedule for any tax accrued in error during the sample period. If the taxpayer accrued it in the sample period you examined, it is likely he accrued in other periods as well.

5. Tax Paid in Error

Many times, taxpayers do not check their invoices to determine that Virginia tax is being correctly charged by their vendors. No credit is given for another state's tax paid in error. It is the taxpayer's responsibility to get a refund from the vendor for any tax paid in error. The purchase is included in the sample as if it was an untaxed purchase.

VII. Reporting the Results

A. Sample Bases or "Population" and Error Factor

Sales tax return data is usually used as the base for extrapolation of sales samples. If it is discovered that the taxpayer has reported only taxable sales on line 1 of the sales tax return, using sales data from financial statements may be a better alternative to using return data. Accounts payable totals are generally used for purchase samples. The STAUDN software uses the total of untaxed exceptions as the numerator of a fraction, of which the denominator is the total of the sample period data in the sample base, to arrive at an error factor which is then extrapolated or multiplied by the data for each month in the sample base. This gives the measure amount for the audit liability.

Audit Sampling Procedures

If a rollup is done (not recommended for sales), the base would be the same number for each of the months during the audit period. Rollups are used to project the same measure amount (and audit liability) for each month throughout the audit period.

B. Error Factor Computation Example

This example has been prepared to provide an illustration of how the error factor is computed from the sampling procedure, how it is applied to the sample base to determine the taxable measure, and the effects of “altering” the sample base. In our example, the audit period is April 1998 – March 2001.

The taxpayer has provided a schedule of Accounts Payable debit TOTALS for each month of the audit period. These monthly totals will be used as the “Sample Base” or “Population” for extrapolation purposes. AP debit totals are generally acceptable for the base as they accurately reflect the trends and expenses for the company, and are readily available. From these monthly totals, our sample months (high, low, avg.) were selected for review. From each sample month, general expense purchase invoices are reviewed. All invoices where tax was not paid on the invoice or accrued and remitted to the State are listed as purchase exceptions.

For our example, the total untaxed purchase exceptions from the sample months are \$270,517.83.

Our sample months are: May 1999, Feb. 2000, and Jan. 2001

For our Original Computation, the sample “Population” from our sample period will be:

<u>Period</u>	<u>Total AP Debits</u>	<u>Total Exceptions</u>
9905	\$3,140,614.84	\$270,517.83
0002	\$4,510,766.69	
0101	<u>\$6,020,671.52</u>	
	\$13,672,053.05	

This represents the total Accounts Payable disbursements from the sample months. The error factor is computed as follows:

$$\begin{array}{rcl} \text{Total Exceptions} & = & \text{Error Factor} \\ \text{Population} & & \\ \underline{\$270,517.83} & = & \underline{.019786189} \\ \$13,672,053.05 & & \end{array}$$

The error factor from the sample periods indicates the percentage of the total disbursements that were not taxed. It is assumed that there will be a similar rate of error in the remainder of the months of the entire audit period. Therefore, the error factor from the sample periods is applied to the “Sample Base” for the entire audit period to determine the total taxable measure identified by the audit. With

Audit Sampling Procedures

total AP for the audit period of \$170,902,694.17, the extrapolated total of \$3,382,513.01 now becomes the taxable measure (\$170,902,694.17 X .019786189).

For Computation Two, assume that the taxpayer requests that certain disbursements be removed from the extrapolation base, i.e.: salary, insurance, etc. since these represent non-taxable amounts. For the example, assume that these monthly disbursements are 13% of the total.

The error factor the second computation will be as follows:

<u>Period</u>	<u>Total AP Debits</u>	<u>Total Exceptions</u>
9905	\$2,732,334.91	<u>\$270,517.83</u>
0002	\$3,924,367.02	\$11,894,686.15 Population
0101	<u>\$5,237,984.22</u>	
	\$11,894,686.15	Error Factor .022742746

Reducing the AP by 13%, the AP total is \$148,685,343.93. The extrapolated taxable measure from Computation Two is \$3,381,513.01 (\$148,685,343.93 X .022742746). No difference from Computation One. Although it would seem at first thought, reducing the sample base will reduce the potential tax liability, the only thing that changes is the error factor. The net result is that the error factor went up, and you are now essentially taking a bigger “Bite” out of a smaller pie.

The most important factor in determining the computation of the audit is the total of untaxed exceptions. This total is what will determine the error factor to be used in the extrapolation of the sample base

C. Penalty

The application of penalty to audit deficiencies is mandatory and its application is generally based on the percentage of compliance determined by computing the dealer’s compliance ratio. The compliance ratio for the sales or use tax is computed by using the following formula:

$$\frac{\text{Measure Reported}}{\text{Measure Reported} + \text{Measure Found}} = \text{Compliance Ratio}$$

“**Measure reported**” means dollar amounts of sales or use measure reported on returns for the audit period. “**Measure found**” means dollar amounts of additional sales or use measure disclosed by the audit. Separate ratios for sales and use taxes will be necessary if the audit contains deficiencies in both areas. The STAUDN software automatically computes compliance ratios based on returns data entered. Tax paid to vendors will not be included in the computation of the compliance ratio for the audit period. See Alternative Method for Computing Compliance Ratio for additional taxpayer options to avoid the penalty.

- 1. First generation audits-** Generally, penalty cannot be waived if any of the following conditions exist:

Audit Sampling Procedures

- a. The taxpayer has been previously notified in writing to collect tax on sales or to pay tax on purchases, but has failed to follow instructions; or
 - b. The taxpayer has collected the sales tax, but failed to remit to the Department of Taxation; or
 - c. There are indications of fraud in which the taxpayer has willfully evaded reporting and remitting the tax to the Department of Taxation.
2. **Second-generation audits-** Penalty will be applied unless the taxpayer's compliance ratios meet or exceed 85% for sales tax and 60% for use tax.
 3. **All subsequent generation audits-** Penalty will be applied unless the taxpayer's compliance ratios meet or exceed 85% for sales tax and 85% for use tax.
 4. **Alternative Penalty Method-** If penalty is applied based on the department's calculation of the use tax compliance ratio, the Taxpayer will have the option of calculating the use tax compliance ratio, under the Alternative Method, as follows:

$$\frac{\text{Measure Reported} + \text{Measure Paid to Vendors}}{\text{Ratio}} = \text{Compliance}$$

$$\text{Measure Reported} + \text{Measure Paid to Vendors} + \text{Measure Found}$$

It is the Taxpayer's responsibility to compute the above compliance ratio and provide the auditor with documentation supporting the computation. The Taxpayer must compute the alternative ratio based on a review of purchases for the same period used by the auditor to compute the traditional compliance ratio. Tolerances for the Alternative Method will remain the same as those of the traditional compliance ratio.

If it is determined that use tax audit penalty is applicable based on the traditional compliance ratio calculations, the auditor will advise the Taxpayer. If the Taxpayer desires to recalculate the compliance under the Alternative Method, the auditor will assess the audit penalty as a contested issue. The Taxpayer must complete the Alternative Method calculations and provide the documentation to the auditor within 60 days of the audit assessment. If the use tax compliance falls within the acceptable tolerances based on the Alternative Method calculations, the audit penalty will be abated.

VIII. Front-End Agreements

Front-End Agreements have traditionally been used for taxpayers that are manufacturers or holders of direct payment permits and are recurring three-year cycle audit candidates. The agreement covers the expense purchase portion of the audit. The taxpayer and the Department of Taxation agree that the tax will be paid "on the front end" rather than at audit time.

An audit is done and areas are identified where compliance is not being met. In the case of a manufacturer, the agreement may be to remit an additional amount

Audit Sampling Procedures

of use tax based on the error factor in the audit; or an additional amount or percentage of use tax based on account transaction information. The direct payment permit holder may agree to remit tax based on the error factor of the audit, on accounts payable data, or, for certain accounts which were found to be totally taxable, tax would be remitted on the activity in these accounts. A written agreement is drafted and signed by both parties. In subsequent audits, the auditor does limited “testing” to determine that the agreement is being followed. This “testing” would also determine whether or not the percentages need to be adjusted for the next audit cycle. Negotiations with the taxpayer would fix the agreement for the subsequent audit period.

Fixed assets are audited in detail each audit period. Front End Agreements substantially reduce the amount of time needed to complete an audit.

Exercise

1. What are the factors to consider when selecting a sample period for purchases? Why are these factors important?
2. You are auditing a vendor. You identify several sales in the sample period on which the taxpayer failed to collect the sales tax. The taxpayer contacts the customers and instructs them to either submit an exemption certificate or remit the uncollected sales tax. One of the customers responds that he has been audited by the Tax Department covering the same period, and thus has already paid the tax. The sample periods were different on each audit.

The vendor, in turn, states that the sales to this particular customer need to be removed from the audit since he, too, was audited. How do you handle the sales to this customer?

3. You have completed your sales and purchase samples; the taxpayer agrees to the exceptions, but is uncomfortable with using gross sales as a base for both samples. What do you do?

Sales and Use Tax Training

Exercise Answers

Exercise Answers

1.

- Audit Generation
- Nature of Business
- Personnel
- Seasonality of Business
- Volume of records
- Organization of records
- Consistency of the taxpayer remittance

This is a "mental checklist" to use in gathering your facts to decide on a representative sample period. All business have different characteristics. Knowing these characteristics, and others, are essential in determining a representative sample period.

NOTE: If other factors are mentioned, encourage a discussion of their usefulness.

2. The sales should be included and extrapolated on the audit. Sales exceptions represent transactions on which the taxpayer failed to comply. It is irrelevant to whom the sales were made. Sampling implies that the same type of errors were made throughout the audit period, not that untaxed sales to the same customers were made. In both audits, a "sample" audit period was selected and an error rate established for use during the entire audit period. In this case the sample periods used in the audit of the vendor and the audit of the customer were two entirely different periods. Had the same transaction been included in the sample of both companies, the auditor would allow a miscellaneous credit.
3. It is probable that he just does not understand the mechanics of sampling. Explain and offer examples of how the error factor is determined. If he fully understands how the projection will be made, he is more likely to agree with the audit. If he continues to object, offer to use any figures he proposes, as long as they are taken from the same source for the entire audit period.

INVOICE CAPTURE TOOL (ICT) POLICIES AND PROCEDURES

Version 2.0

I. Overview

The Invoice Capture Tool (ICT) program introduced by the Office of Compliance in January 2000 will enhance the software that the Virginia TAX field audit staff uses. The current audit process involves extensive manual searching through taxpayer paper invoices. The ICT initiative will deliver software that will allow ICT auditors to receive this information electronically from taxpayers. Furthermore, this new software will significantly reduce the burden of the taxpayer, increase the accuracy of the audit, and decrease the time it takes for an auditor to complete an audit.

This document outlines the policies and procedures for the ICT audit program. The initial ICT rollout involves a limited number of TAX audit personnel. Through increased usage of the ICT software, TAX may consider expanding the ICT Audit Program. The purpose of the ICT Policies and Procedures is to provide a framework for the limited ICT rollout. As the ICT program evolves, the Policies and Procedures will be updated to incorporate any necessary changes to the ICT Audit Program.

II. ICT Audit Candidate Determination

A. Identifying ICT Audit Candidates

The first stage of the ICT Process involves the identification of audit candidates. The audit selection process employed by OOC involves the Audit Supervisors, District Auditors, and the TAX Audit Selection program for identifying ICT audit candidates. Using the Central Audit Selection program will permit the selected candidates to be assigned directly to the ICT Support Team (IST) for assignment to Audit personnel. Additionally, referrals from District Auditors, and Audit Supervisors will be used for identifying ICT audit candidates.

In addition to the centralized audit selection process, the following processes will also be used to identify ICT audit candidates.

- *Evaluate current audit inventory:* All District Audit Supervisors, and District Auditors will be encouraged to evaluate their current audit inventory to identify taxpayers that may qualify for an ICT audit.
- *Field audit leads:* District Audit Supervisors and District Auditors should evaluate new audit leads to identify taxpayers that may qualify for an ICT audit.
- *Collection referral audit leads:* All audit leads provided by Collection personnel should be reviewed and evaluated for qualifying as a possible ICT audit candidate.

Audit Sampling Procedures

- *Audits at the request of taxpayers:* All taxpayers that request an electronic audit will be considered as a potential ICT audit candidate. The ICT Auditor, and the District Audit Supervisor will evaluate the feasibility of conducting an ICT audit on this taxpayer.

B. Qualifying criteria for an ICT Audit Candidate

Upon being assigned an audit, the District Auditor after reviewing the assignment, should immediately contact the taxpayer to coordinate and establish the audit schedule, and arrange for a pre-audit conference with the taxpayer. All field auditors will be trained on the policies and procedures employed by TAX for identifying and qualifying ICT audit candidates. Additionally, detailed documentation outlining the policies and procedures will accompany this training. The District Auditors will conduct their standard pre-audit conference and determine the feasibility for conducting an ICT audit.

After the successful identification of an audit candidate, the District Auditor must determine if the ICT program should be used to facilitate the audit process. It is the responsibility of the audit staff to determine if an individual audit candidates would be feasible for utilizing the ICT audit tool. Field auditors should consider the following issues when making the determination:

- Does the taxpayer have an automated chart of accounts?
- Is the taxpayer's general ledger updated from posted information?
- Is the taxpayer willing to download data?
- Does the taxpayer want to participate in an ICT audit?
- Will the use of the ICT audit program reduce the amount of time needed to complete the audit?
- Will the use of the ICT audit program reduce the amount of time needed to complete the audit?
- Has the taxpayer's accounting system been consistent for a known period of time (i.e. consistent accounting codes and methodology)?

C. Technical Feasibility for conducting an ICT Audit

Upon the identification of a potential ICT audit candidate, the District Auditor will arrange a meeting with the ICT Auditor, and the Taxpayer to discuss the technical feasibility of using the ICT audit tool for conducting the audit. The District Auditor should directly contact the ICT Auditor when they are located in the same district. Otherwise, the District Auditor should contact the IST, who will then identify an ICT auditor in a neighboring district. This audit team (the District Auditor, and the ICT Auditor) will arrange a second pre-audit conference with the taxpayer to discuss the technical feasibility for applying the ICT software to the audit assignment.

Audit Sampling Procedures

The following factors should be considered when analyzing the technical feasibility for using the ICT audit program.

D. Data Format

The ICT software (IDEA) can work effectively with a wide array of data formats. These formats include one or more of the following applications:

Application Data and Databases

- Access
- Lotus 123
- Oracle
- Various accounting packages including Accpac, Simply accounting, Pegasus, Sage, and many others
- Btrieve
- Excel
- SQL Server
- Sybase
- Xbase (the DBF format from dbase, foxpro, and others)

Flat Files/ unformatted DATA

- ASCII (fixed length and variable length)
- EBCDIC (fixed length)
- AS/400 DIF (Data interchange Format)
- ASCII Delimited
- EBCDIC (variable length ANSI/IBM)

Most software applications can effectively export a flat, or ASCII, file type. The ICT Auditor should work with the taxpayer to identify a usable file format.

1. File Size Limitations

The largest file that IDEA can handle is 2.1 gigabytes, unless the auditor is working with ODBC data (application data – Excel and Access), in which case you can access files that are much larger. The 2.1 gig limit is a function of the operating system rather than a limitation of IDEA. The 32-bit version of IDEA will overcome this limitation. IDEA can handle files with up to 2.1 billion records and files with up to 32,766 fields per record.

For additional information, view IDEA website at www.cica.ca/idea/v3faq.htm or the user manual accompanying the IDEA software.

Audit Sampling Procedures

2. Fields Available Electronically

The ICT Auditor must ensure that the appropriate data is available to effectively conduct the audit. The ICT and District Auditors should work with the taxpayer to identify the fields that are available electronically.

The following fields are required to perform an audit, based on gross sales:

- a. Customer name and/or account number
- b. Amount of sale
- c. Sales tax collected (if any)
- d. Ship to location
- e. Date of sale
- f. Description of the item sold

The following fields are required to perform an audit, based on purchases:

- a. Vendor name and/or account number
- b. Account number that the purchases are being charged to
- c. Sales tax paid to vendor, when separately stated
- d. Date of purchase
- e. Cost of item
- f. Description of item purchased
- g. If no sales tax paid to vendor, is accrual being posted?

As documented in Section IV: (Technical Aspects of the ICT Audit Process), many of these fields can be directly imported into the STAUDN exceptions list. Additionally, many of these fields can facilitate the generation of an exceptions list in the ICT software, but may not need to be imported into STAUDN.

III. Successful Identification of an ICT Candidate

A. Recommendation to IST (Audits Outside the District of an ICT Auditor)

Upon the successful identification of an ICT audit candidate from sources outside the district, the ICT Auditor will review the audit candidate with the District Audit Supervisor and will be notified who the District Auditor is that will be assigned the audit.

B. Recommendation to IST (**Audits** within the District of an ICT Auditor)

Upon the successful identification of an ICT audit within a District, the ICT Auditor will contact the auditor in charge of the assignment to discuss the details of how the ICT audit procedures will be used. The District Auditor will follow the criteria outlined below for developing a potential ICT audit.

The IST will use the following criteria when approving an ICT audit candidate.

Audit Sampling Procedures

- Feedback from the District Auditor
- Documentation reviewed for the following:
 1. Business classification for the audit candidate
 2. Special audit issues and/or tax policy concerns regarding the business classification.
 3. Availability of ICT Auditor resources
 4. Geographic location of audit candidate
 5. Current inventory of the District where the ICT audit candidate is located
 6. Feedback from the District Audit Supervisor.

IV. ICT Audit Team and Roles of Individual Players

A. Key Players in the ICT Audit Process

- The District Audit Supervisor: Coordinates ICT audits with the District audit plan
- The District Audit Staff: All OOC audit personnel
- The ICT audit staff: Eight auditors, Five from the Central Regional area, One from the Western Regional area, and one from the Eastern Regional area, and one from the Interstate Audit unit. As the ICT program expands, additional auditors will be added.
- The ICT Support Team (IST) members are: Richard Dotson Director of Audits, Jim Mason, Team Leader, Ramin Amira, Mark Foster, Ken Shafer, Mindy Stembridge, Nancy Gimbert, Sara Shorter, Stewart Silhol will each perform the IST functions.

B. ICT Support Team (IST)

The primary objectives of the IST support team will be to ensure the standardized use of the ICT software, to identify new opportunities for the use of the ICT software, and to manage the expansion of the ICT program. Through the use of a centralized team, TAX can closely manage and assess the effectiveness of the use of this new auditing tool.

The IST will perform a wide array of tasks, to include measures of performance for the ICT program.

The team leader will provide the Director of Audits, a monthly report on the status of new ICT cases that were begun during the month. All ICT auditors will submit to their team leader, the identification of all new cases. The team leader will compile and consolidate, and forward the report to the Director of Audits. The report will also be forwarded to the IST support team.

At the completion of the fiscal year, each ICT Auditor will submit a completed time savings report to the team leader. The report will be forwarded to the

Audit Sampling Procedures

Assistant Tax Commissioner. Copies of this report will also be provided to the Director of Audits, and to the IST support team.

C. ICT Auditor (Audit Team)

The role of the ICT Auditor involves a wide array of technical and analytical processes. Through the course of the ICT training, auditors will learn to perform the tasks needed to electronically capture the taxpayer data and perform the requisite analysis. These tasks include:

- Understanding and, if necessary, defining the layout of the data
- Assessing the taxpayer's data file formats, and determining if any compatibility issues exist.
- Working with the taxpayers technology representatives to perform the data transfer
- Generating queries to extract specific records from the taxpayer's file
- Statistically analyze the taxpayer's file
- Importing and Exporting databases
- Working with external storage devices (i.e. Jaz drives and Superdisks) to facilitate the data importation process

The ICT Auditor will work with the District Auditor to perform the tasks needed to complete an audit. In addition to the aforementioned technical roles, the ICT Auditor will be responsible for:

- *Working with the field auditor to schedule ICT audits:* Upon being notified of a potential ICT audit assignment, the ICT auditor will work with the District Auditor to schedule a second pre-audit conference. The ICT audit team should gather sufficient information that will allow them to qualify the candidate as an ICT audit candidate. Additionally, the audit team will determine the overall audit schedule during the audit conference.
- *Working with field auditors to recommend ICT audit candidates:* Upon completion of the second pre-audit conference, the ICT Auditor should work with the field auditor to determine if the ICT software will benefit the audit process.
- *Reviews the results of the ICT analysis with the field auditor:* After generating an exceptions list using the ICT software, the ICT Auditor will review the list with the District Auditor. The ICT Auditor and the District Auditor will review the exceptions list, IDEA log file, and any additional documentation to ensure the results meet the audit strata defined by the audit team. Additionally, this information may be included in the final audit report.
- *Imports data into the STAUDN worksheet on the field auditor's laptop:* Upon agreeing on the exceptions list, the ICT Auditor will assist the

Audit Sampling Procedures

District Auditor in importing the exceptions list into the District Auditor's STAUDN worksheet.

D. District Auditor (Audit Team)

District Auditors serve as the primary auditor on all ICT audit assignments. As the primary auditor, the District Auditor will be responsible for:

- Contacting the taxpayer to schedule a pre-audit conference, and schedule the audit
- Serve as the primary liaison between the taxpayer and the TAX Department
- Working with the taxpayer to arrange the data transfer
- Writing a confirmation letter (using approved template) to ensure the agreed upon approach and data requirements are explicitly documented
- Developing audit program and schedule
- Performing the audit field work
- Concluding the audit activities and review audit results with the taxpayer
- Generating the final audit reports
- Generating assessments, and/or refunds
- Coordinating the ICT audit assignments with the appropriate District Audit Supervisor

District Auditors serve as the primary link between the ICT audit program, and the taxpayers. To support the use of the ICT software, District Auditors need to communicate the benefits of the ICT program to the taxpayers, and should continuously try to identify potential ICT audit candidates. Upon identifying a potential ICT audit candidate, the District Auditor should contact the ICT Auditor to arrange a second pre-audit conference with the taxpayer. The District Auditor, and the ICT Auditor will work together to determine the feasibility for applying the ICT software on the identified potential ICT candidate.

As part of the ICT audit team, the District Auditor will work with the ICT Auditor; the District Auditor will import the data into the STAUDN audit template on their laptop computer. Furthermore, the District Auditor will complete the remainder of the audit activities, and present the results of the audit to the taxpayer. Although the District Auditor will report directly to the IST in Richmond, they will participate in completing the assessment for the completed audit, (i.e. benefits, issues, and recommendations).

As a part of the ICT audit team, the District Auditors need to communicate the benefits of the ICT program to the taxpayers, and are to continuously try to identify potential ICT audit candidates. Upon identifying a potential ICT audit candidate, the District Auditor should contact an ICT Auditor, and arrange a second pre-audit conference with the taxpayer. The District Auditor, and the ICT

Audit Sampling Procedures

Auditor will work together to determine the feasibility for applying the ICT software for all audit candidates.

As a part of the ICT Audit Team, the District Auditor will work with the ICT Auditor in the generation of an exceptions list. With the assistance from the ICT Auditor, the District Auditor will import the data into the STAUDN audit template on their laptop computer. Furthermore, the District Auditor will complete the remainder of the audit activities, and present the audit results to the taxpayer. Although the District Auditors will not report directly to the IST in Central Office, they will participate in the preparation of the assessment of the audit results (i.e. benefits, issues, and recommendations).

V. TECHNICAL ASPECTS OF THE ICT AUDIT PROCESS

A. Data Retrieval

During the second pre-audit conference, the ICT Auditor and the District Auditor will work with the taxpayer's technical team to discuss the data retrieval requirements. The audit team should consider the following:

- *File Format:* The audit team should work with the taxpayer's technical team to identify an acceptable format (Section I-C: Technical Feasibility of the ICT Audit). To facilitate the data importation process, the audit team should try to obtain a file in either an application file format (i.e. Access or Excel) or in a fixed ASCII file layout.
- *File Size:* The audit team must consider the file size limitations associated with a floppy diskette (1.44 MB) and a super floppy diskette (120MB).
- The above two storage devices will be available to the audit team when transferring files.
- *Taxpayer willingness to work with the super floppy drive:* When transferring data using a super floppy diskette, hardware drivers need to be installed on the source computer. Taxpayers must agree to use an external super floppy drive on their computer. Additionally, a representative responsible for the taxpayer's information system should perform the installation process.

B. Data Analysis

When using the ICT software to generate the exceptions list, the auditor should consider the following:

- Target a small percentage of transaction volume to achieve a high percentage of dollar coverage.
- Data analysis and manipulation will be performed on like transactions.

Audit Sampling Procedures

- Completeness testing on all areas of ICT audits must be performed on the front end of the data manipulation process.
- The ICT Auditor will maintain a log of activities for each ICT audit assignment, which details file manipulation, file names, and data analysis. WIN IDEA produces a log file that tracks these activities.
- The ICT Auditor will provide the audit comments as they pertain to the data manipulation process. Per the District Auditor’s discretion, the comments may be incorporated into the final audit report. The ICT Auditor will also maintain a copy of the comments in their own files.

The methodology employed when analyzing taxpayer data will be established as the ICT audit program matures. The ICT auditors should continuously communicate their data as identified and approved. This data will be documented in the Data Analysis section of the ICT Policies and Procedures.

C. Import Data into STAUDN:

The STAUDN audit worksheet contains a file importation feature. Using this feature, the District Auditors can import the ICT produced output (i.e. the exceptions list) into STAUDN. This importation process will create new records in the taxpayer exceptions list. Note that this process appends the existing exceptions list, and does not write over the existing records.

Prior to importing the exceptions list into STAUDN, the ICT Auditor must perform the following critical steps:

- Review the exceptions list with the District Auditor. It is essential that the ICT Auditor and the District Auditor agree on the exceptions list prior to importing it into STAUDN.
- Identify and rename the fields in the ICT database to names recognized by STAUDN. STAUDN will only import fields that have specific names. The following table lists the fields that can be in the import file:

Check this table

Field Name	Type	Description	Format	Notes
Invoice Date	Date	Field holding, Month, Day and Year on Invoice	Any valid date format	Field cannot be left blank
Measure	Text	Measure type of invoice		Interface has Auditor math values in this field to STAUDN measures. Any blank values in field will also be mapped to STAUDN
Locality	Text	Locality to use Distribution		Must be blank or valid numeric locality code
Invoice Amount	Text	Amount on invoice	Can have \$'s if needed	Field cannot be left blank
Account Number	Text	Account No. used by taxpayer		

Audit Sampling Procedures

Items	Text	Descriptions of item on Invoice		
Invoice Number	Text	Invoice number used by taxpayer		
Vendor Name	Text			If blank, invoice will map to a New vendor named "Imported"
Comments	Text	Comments about invoice		
UD1	Text	Custom field 3		
UD2	Text	Custom field 2		

NOTE: At a minimum, the INVOICE DATE and INVOICE AMOUNT fields must be included. My fields included in the files that are not listed above will simply be ignored.

- Export the approved exceptions list to an Access 2.5 file. This feature is located under File Export in the IDEA 3.0 software.
- Save the Access 2.5 file to a diskette.
- Import the Access 2.5 file into the District Auditor's STAUDN audit file. This function is located under File Import in the STAUDN work sheet.
- Identify the measures corresponding to individual exceptions. This procedure can be done during either the file importation process via the File Importation Wizard, or during the generation of an exceptions list in the ICT software.

D. Return Taxpayer Data and Archive IDEA Files

After successfully importing the taxpayer data into STAUDN, and concluding all audit activities, the taxpayer data should be returned to the taxpayer in its original format. Additionally, all manipulations of the taxpayer data should be explained to the taxpayer placed onto the diskette sent into the TAX archive. These manipulations include all IDEA 3.0 audit files.

VI. ICT AUDIT RESULTS REVIEW AND EVALUATION

A. Overview

The review of the effectiveness of the ICT Audit Program is the responsibility of the ICT Support Team (IST) Team Leader. To support the achievements of the ICT Audit Program, standard criteria have been developed to assist the IST and TAX management, reviewing and evaluating the effectiveness of the ICT audit program. These criteria will track the monthly number of ICT audits begun, and the yearly savings in time.

B. ICT Report of Audit Results

Audit Sampling Procedures

At the completion of each ICT audit assignment, the ICT audit team will complete the ICT Savings Report on the Savings Report Form, and the Monthly List of new ICT audits by completing the following steps:

1. This is accomplished by computing the number of actual invoices reviewed compared to the total population of invoices in the original file. This number is divided by 1000 (average number of invoices reviewed per day) to determine the number of days saved.
 2. This number is combined with the number of records imported into STAUDN by the ICT auditor. This is computed by dividing the total number of records imported by 200 (average number of records keyed in one day).
 3. The two amounts will result in the total savings of time by using the ICT audit program. The amount of time is multiplied by \$300 (average value of time to complete an audit based on the past history of closed audits).
- C. Communicating the Results of the ICT Audit Program

The ICT Audit Program involves many OOC resources. In addition to the ICT Auditors, all Audit Supervisors, and District Office Audit personnel will be involved in the ICT audit program. In an effort to involve all relevant personnel in the ICT audit program, the ICT Auditors, and the IST should continuously inform TAX management, the Audit Supervisors, and the District Auditors on the status, and the results of the program. The ICT Auditors will distribute the appropriate reports to management in the Office of Compliance, and the appropriate TAX personnel. In this manner the program will remain visible to all employees, and will promote the increased usage of the ICT audit program.

STATISTICAL SAMPLING PROCEDURES

I. Introduction

The Virginia Department of Taxation uses statistical sampling, in conjunction with various other methods of sampling, where examination of 100% of the taxpayer's records is not feasible. This section will address the statistical sampling procedures used by the Department as part of our overall ICT (Invoice Capture Tool) program. The policies and procedures for the ICT program have all ready been established and approved. This section will become an addendum to the procedures for using ICT.

The objectives of the Department in incorporating the use of statistical sampling into our ICT program is to enhance our efficiency in performing audits that benefits both the State of Virginia as well as the taxpayers.

The procedures set forth in this section will be a guide to be followed by auditors in using statistical sampling methods in sales and use tax audits. Additionally, information contained in these procedures is not confidential in nature and may be used to explain to taxpayers the benefits of using statistical sampling.

II. Starting a Statistical Sample

A. Objectives

In this section we will discuss:

- Identifying good candidates for a statistical sample
- Explaining to taxpayers the benefits of a statistical sample

B. Identifying Good Candidates for a Statistical Sample

A good candidate for a statistical sample should have:

- A large volume of records. Sampling has long been accepted as a valid auditing technique where the volume of records from the taxpayer is too great to do a 100% review. We have traditionally used a block sampling method or a systematic sampling method using ICT in performing sales and use tax audits.
- The taxpayer must have complete records for the audit period. This is a requirement for performing statistical sampling. This is determined using the same standards we have always used found in our original procedures.
- Electronic data. This is a requirement for performing a statistical sample. It is essential that we have an accurate count of the total number of invoices in the population as well the capability to stratify the data on the invoice amount in order to improve sampling efficiency. Electronic data must also be verified to insure that all of the data has been captured
- Good Internal Controls. The auditor should verify that the taxpayer has good internal controls and has been consistent in the determination of the taxability of transactions

Audit Sampling Procedures

C. The Benefits of a Statistical Sample

- Statistical sampling is the most accurate method of sampling. Other sampling methods should be used only if it is not a good candidate described above.
- The process of selecting records for examination is objective. The records in a statistical sample are selected randomly, ensuring that each record has the potential to be reviewed.
- Statistical sampling is much more efficient than other methods of sampling. This is especially true where the taxpayer has large volumes of records. Statistical samples typically require the auditor to look at fewer records and the taxpayer to pull fewer records.

III. STATISTICAL SAMPLING FORMULAS AND EXPLANATIONS

Examining the entire population of records in tax audits is unrealistic given time and resource constraints. Instead we can draw a valid random sample and use the sample results to project a statistically valid estimate. Here follows the methodology to be used in performing a statistical sample.

First, the sample size s is determined as :

$$s = \left(\frac{\sigma \cdot \Phi^{-1}\left(1 - \frac{\alpha}{2}\right)}{m} \right)^2$$

The formula for sample size reveals, as intuition would suggest, that the sample size s increases as the margin of error m decreases, as the standard deviation σ increases, or as the significance level α decreases (the inverse of the cumulative distribution function is monotonically increasing in its parameter).

Example:

Suppose we are interested in finding the rate at which sales tax is being incorrectly assessed, and we need to know how many records to randomly sample in order to be 95% sure (0.05 significance level) that our estimate is within 3% of the true error rate. In this case the variable we are trying to estimate (the error rate) is modeled as a Bernoulli¹ random variable. The true standard deviation of a Bernoulli random variable is given by:

$$\sigma = \sqrt{\rho \cdot (1 - \rho)}$$

Where ρ is the probability that the tax was properly paid. Assuming $\rho = 0.5$, we have

¹ A Bernoulli random variable takes the value 1 with probability of success ρ and 0 with failure probability $1-\rho$.

Audit Sampling Procedures

$$s = \left(\sqrt{0.5 \cdot (1 - 0.5)} \cdot \frac{\Phi^{-1}\left(1 - \frac{0.05}{2}\right)}{0.03} \right)^2 = 0.5 \cdot (1 - 0.5) \cdot \left(\frac{1.96}{0.03}\right)^2 = 1067.11$$

which should be rounded up to a sample size of 1068.

The following table shows how large the random sample should be for different combinations of confidence and margin of errors, and assuming a 50% probability of an event occurring².

		Confidence Interval						
		70%	75%	80%	85%	90%	95%	99%
Margin of Error	5.0%	108	133	165	208	271	385	664
	4.5%	133	164	203	256	335	475	820
	4.0%	168	207	257	324	423	601	1,037
	3.5%	220	271	336	423	553	784	1,355
	3.0%	299	368	457	576	752	1,068	1,844
	2.5%	430	530	657	829	1,083	1,537	2,654
	2.0%	672	828	1,027	1,296	1,691	2,401	4,147
	1.5%	1,194	1,471	1,825	2,303	3,007	4,269	7,373

The sample sizes above can also serve as a baseline for sampling a continuous variable, as in the case of a dollar amount (for our purposes, a tax assessment –or credit. Here, m is the acceptable margin of error, in dollars, of the tax assessment).

After conducting the random sample, we should make sure that sample size was sufficiently large to achieve the desired combination of margin of error and confidence interval. To do so we re-calculate the sample size using the statistics collected from the sample. The procedure is illustrated below first for a simple random sample and then for a stratified random sample.

² Note that this is the most conservative figure because it maximizes the sample size. If we had prior information that made us believe that the responses were more skewed, say 75%, then our sample size wouldn't have to be as big (800 in our example above).

Audit Sampling Procedures

A. Baseline: Simple Random Sample

Suppose we take a random sample of 1,068 out of a total population of 20,000 and we find that tax is underpaid in the sample by an average \$20 per item³. Then the projected total error is simply $\$20 \cdot 20,000 = \$400,000$. Suppose the sample standard deviation $\hat{\sigma}$ of underpayment is $\$7.5^4$. For a simple random sample, the projected standard deviation of the total underpayment in the population is simply $\hat{\sigma} \cdot n$, or $\$7.5 \cdot 20,000 = \$150,000$ in this example. We want to be 95% confident that, under repeated sampling, the \$400,000 tax assessment is within \$12,000 of the true tax owed (a 3% margin of error).

$$s = \left(\frac{150,000 \cdot \Phi^{-1}\left(1 - \frac{0.05}{2}\right)}{12,000} \right)^2 = (12.5 \cdot 1.96)^2 = 600.25$$

Thus we find that a sample size of 601 would have met the precision goal. In fact, in this specific example we can be 95% confident that the tax assessment is within \$8,996 of the true tax owed⁵, a margin of error of about 2.25%. If we find that our goal was not met, we could either change our goals (in discussion with the taxpayer we can decide to increase the margin of error or the significance level) or draw a larger sample of magnitude equal to the recalculated sample size.

B. Stratified Random Sample

While it is perfectly valid to draw a simple random sample from the entire population, stratified random sampling is more efficient (sample size being equal, you are more likely to reach your precision goals if you stratify). The method of stratified sampling is one where the population is divided into strata (i.e., based on dollar amounts). We have chosen to stratify the audit population into 5 strata. We use a 100% sampling rate on the highest dollar stratum. We sample 267 records (1068 divided by 4) in each of the other 4 strata. While it is valid to judgmentally determine the stratum cutoffs, our preferred method is to give each stratum equal weight by total dollars. Typically, this increases efficiency through a higher sampling rate for the strata containing high dollar items.

³ The sample average \bar{x} is given by $\bar{x} = \frac{1}{n} \cdot \sum_{i=1}^n x_i$ where x_i is the underpayment and n is the sample size.

⁴ The sample standard deviation $\hat{\sigma}$ is given by $\hat{\sigma} = \sqrt{\frac{1}{n-1} \cdot \sum_{i=1}^n (x_i - \bar{x})^2}$

⁵ Rearranging the sample size formula, we get $m = \frac{\sigma \cdot \Phi^{-1}\left(1 - \frac{\alpha}{2}\right)}{\sqrt{s}} = \frac{150,000 \cdot 1.96}{\sqrt{1068}} = \$8,996$

Audit Sampling Procedures

The average error amount in each stratum is used to project a total error. We can project each stratum separately and then add them up for a total. Alternatively, we can use the relative number of records in each stratum to calculate a weighted average error amount and then multiply by the population size to arrive at a tax assessment estimate.

To illustrate, suppose we stratified the population into four strata of equal dollar weight as follows: 8,000 records in the lowest dollar records stratum, 4,000 in the second, 2,000 in the third, and 1,000 in the fourth. Suppose we then sampled 267 from each stratum and found an average underpayment of \$1 in stratum one, \$5 in stratum two, \$20 in stratum three, and \$100 in stratum four, with corresponding standard deviations of \$0.2, \$1, \$2, and \$5. The fifth, the highest dollar stratum resulted in a tax assessment of \$200,000 (true, not estimated. The standard deviation is zero of course). The projected total tax assessment is then:

$$\$200,000 + (8,000 \cdot \$1) + (4,000 \cdot \$5) + (2,000 \cdot \$20) + (1,000 \cdot \$100) = \$368,000$$

or alternatively found using a weighted average:

$$\$200,000 + 15,000 \cdot \left(\frac{8}{15} \cdot 1 + \frac{4}{15} \cdot 5 + \frac{2}{15} \cdot 20 + \frac{1}{15} \cdot 100 \right) = \$200,000 + 15,000 \cdot \$11.2 = \$368,000$$

In a stratified random sample, the projected standard deviation of the total error in the population is found as:

$$\hat{\sigma} = \sqrt{\sum_{i=1}^4 N_i \cdot (N_i - n_i) \cdot \frac{\hat{\sigma}_i^2}{n_i}}$$

Where N_i is the total number of records in stratum i and n_i is the number of records sampled in stratum i (267). In our stratified random sample example above,

$$\hat{\sigma} = \sqrt{\left(8,000 \cdot (8,000 - 267) \cdot \frac{\$0.2^2}{267} \right) + \dots + \left(1,000 \cdot (1,000 - 267) \cdot \frac{\$5^2}{267} \right)} = \$185,751$$

Now we can determine whether the sample of 1,068 was large enough. We want to be 95% confident (0.05 significance level) that, under repeated sampling, this \$368,000 tax assessment is within \$11,040 of the true tax owed (a 3% margin of error).

$$s = \left(185,751 \cdot \frac{\Phi^{-1}\left(1 - \frac{0.05}{2}\right)}{11,040} \right)^2 = (16.3 \cdot 1.96)^2 = 1,088$$

Thus we find that a sample size of 1088 is needed to meet the precision goal. We are left with the choice of sampling 20 more records or simply accept a slightly

Audit Sampling Procedures

higher error rate –in this example, we can be 95% confident that the tax assessment is within \$11,140 of the true tax owed⁶, a margin of error of about 3.03%.

IV. GLOSSARY OF RELATED TERMS:

Random Sampling: For a simple random sample, each item in the population has the same probability of being sampled. In stratified random sampling, each item in each stratum has the same probability of being sampled (but the probability might differ among strata).

Stratified Random Sampling: The population is divided into strata. A random sample is taken from each stratum. Stratifying the population based on dollar amounts can provide for more precise results as compared to a simple random sample of the entire population, the reason being that in a simple random sample low dollar items have a higher probability of being sampled.

Weighted Average: When the weights are the same, weighted average is the same as a simple arithmetic average. Weighted averages take into consideration the frequency of the class of records in order to compute an average. For example, consider a population divided into two strata, one with the 100 highest dollar records and one with 900 records. If the average tax assessment was found to be \$50 for the high dollar items and \$1 for the low dollar items, then the weighted average is 5.9

$$\left(\frac{100}{1000} \cdot 50 + \frac{900}{1000} \cdot 1 \right).$$

Projection: Projection is expanding the sample results to the entire population. To arrive at an estimate of total assessment, multiply the average error value in each stratum's random sample by the number of items in that stratum. The total population estimate is simply the sum of each stratum's projected error. This is algebraically identical to the result obtained from multiplying a weighted average of the strata's assessment by the total number of records in the population.

⁶ Rearranging the sample size formula, we get

$$m = \frac{\sigma \cdot \Phi^{-1}\left(1 - \frac{\alpha}{2}\right)}{\sqrt{s}} = \frac{185,751 \cdot 1.96}{\sqrt{1068}} = \$11,140$$

V. DEVELOPING THE STATISTICAL SAMPLE

An important point needs to be made here. The field auditor is in charge and is responsible for their individual audits. The ICT auditor's position is that of a consultant who is responsible for manipulating data to achieve an efficient and workable sample for the field auditor to use.

A. Review and Verification

The taxpayer should send the records to the field auditor. It is the responsibility of the field auditor to review the records to determine if they received the information they requested. The field auditor should verify that the account balances are correct and is in agreement with the G/L for the period, to assure that all records have been received.

The field auditor should also review the file to assure there is no incorrect information and that there are no blank fields in the file or extra rows with any additional information.

B. Sampling Form

One of the primary responsibilities of the field auditor will be to determine if the ICT program can be used for conducting an audit. The field auditor, during the initial audit conference and/or upon first arriving at the audit site, must ask the taxpayer if they can use the ICT program to develop the sample for the audit. The field auditor must complete the ICT justification form below for each prospective audit, (blank copy enclosed for reference).

The questions are to be asked of the taxpayer by the field auditor.

- Can records be provided in electronic data format in Excel spreadsheet or similar type format?
- Approximately how many records will be provided/
- What is the audit period to be covered?
- If ICT cannot be used, explain why it cannot.
- Give any additional information, and /or explanations as to how the auditor will use the ICT audit program, or why it cannot be used.

The field auditor will be required to complete this form for each audit. Once completed, the field auditor should scan the document into their audit folder in STAUDN and keep the paper copy in their audit folder (**See Form 1**).

Audit Sampling Procedures

Form 1

ICT Information Form

Acct #: <Account #> Contact: <Contact Name>

Name: <Business Name> Title: <Contact Title>

Date: <Date> Auditor: <Auditor Name>

PURPOSE: To document the use of Excel and IDEA software applications in the audit. To be completed by auditor prior to starting the audit field work.

The use of ICT was discussed with the customer contact listed above. In addition, the customer was given a copy of the ICT Taxpayer Explanation handout. **(Required for ALL audits)**

After discussion with my team lead or audit supervisor, it was determined that this audit case is not a good candidate for ICT because: (Mark all that apply – Explain as necessary)

- Customer is not fully computerized
- Prior audit history (company size / hours) not sufficient to utilize ICT procedures
- Customer declines to use ICT procedures
- Other/Explanation:

The customer is interested in using ICT. The customer: (Mark all that apply – Explain as necessary)

- Cannot** provide data in Excel or other suitable format
- Can** provide data for at least one audit measure in Excel or other suitable format
- Agrees to use ICT procedures for this audit
- Other/Explanation:

If ICT to be used, provide the following information for each prospective ICT measure, account #, etc:

Data Available	Measure Name, ICT Use	Sample Approx. # Expected	Period of Records
Yes <input type="checkbox"/> No <input type="checkbox"/>	Sales Yes <input type="checkbox"/> No <input type="checkbox"/>		
Yes <input type="checkbox"/> No <input type="checkbox"/>	Assets Yes <input type="checkbox"/> No <input type="checkbox"/>		
Yes <input type="checkbox"/> No <input type="checkbox"/>	Purchases Yes <input type="checkbox"/> No <input type="checkbox"/>		
Yes <input type="checkbox"/> No <input type="checkbox"/>	Other Yes <input type="checkbox"/> No <input type="checkbox"/>		
Yes <input type="checkbox"/> No <input type="checkbox"/>	Other Yes <input type="checkbox"/> No <input type="checkbox"/>		

Additional Comments:

Audit Sampling Procedures

C. Manipulating the Data

Once the ICT auditor has received the file from the field auditor, it is their responsibility to develop the statistical sample. The ICT auditor will use the guidelines set forth in the following section to produce the statistical sample. The ICT auditor should evaluate the information received, to assure that a statistical sample can be done, and identify any extraordinary issues that need to be resolved before a sample is developed.

D. File Formats used by ICT

The ICT software (IDEA) can work effectively with a wide may of data formats. These formats include:

Application Data and Databases

Access •	Excel
Lotus 123 •	SQL Server
Oracle •	Sybase
Various accounting packages including •	XBASE (the DBF format from dBase,
Accpac, Simply accounting, Pegasus Sage and many others,	Foxpro, and others)
Btrieve	

Flat Files /Unformatted Data

ASCII (fixed length and variable length) •	ASCII Delimited
EBCDIC (fixed length) •	EBCDIC (variable length ANSI/IBM)
AS/400 DIF (Data Interchange Format)	

Most software applications can effectively export a flat, or ASCII, file type. The ICT auditor should work with the taxpayer to identify a usable file format.

See page three of the ICT Procedure Manual for further information.

VI. STATISTICAL SAMPLING GUIDELINES

When developing a statistical sample from virtually any size file of records, the auditor will use the following procedures to select a sample from the original population of records:

Audit Sampling Procedures

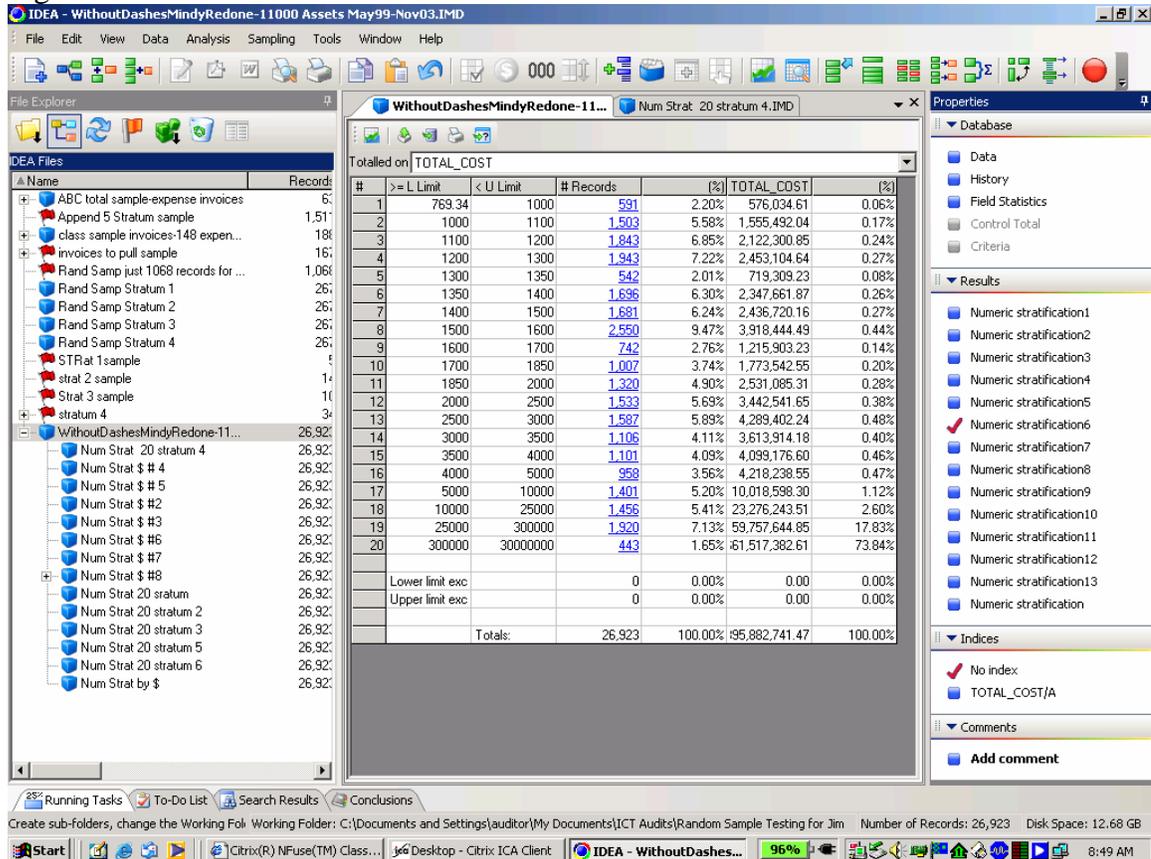
Initially, a detailed stratification should be done. All negative amounts should be extracted out with only positive amounts remaining in the population. The negative amounts can be reviewed separately. The auditor will use a total of 1068 records as specified by the table in Section 3. This is based on a Confidence level of 95% and a Margin of Error of 3%. The highest dollar stratum will be reviewed in detail. For the remaining strata, other than the highest dollar stratum, four equally weighted strata should be developed. For each of the four strata 267 records will be selected as the sample. This totals the 1068 records that should be used

NOTE: Obviously some audits will not have enough records to support reviewing 1068 records. In this case, the auditor should use the alternative sampling methods of ICT systematic sampling or block sampling.

A. Detailed Stratification

A detailed stratification is a very important step in arriving at four equally weighted averages. This may mean that you have as many as 20 or more strata. Each stratum should be finely defined so that we can develop the most accurate sample that we can (See Fig. 1).

Figure 1



Audit Sampling Procedures

B. Number of Records to Sample

Based on the statistical table in Section 3, when developing a statistical sample we will review a total of 1068 (not counting the highest dollar records). This sample size can be used for any population of records unless the population is too small to support reviewing this many records. The 1068 records will be selected from the final four stratum and the number of records of the high dollar stratum will be added to this for the total sample.

C. Detail Highest Dollar Stratum

The highest dollar stratum will always be reviewed in detail. Whether you are sampling expense purchases or assets, it is important to segregate the highest dollar for review. This assures that in reviewing the high dollar level the auditor can be assured that the taxpayer and the State of Virginia are not subject to any abnormal error created by extrapolating from a smaller sample.

D. Developing Four Stratum

To develop four stratum it will be necessary to take the remaining stratum from the detailed stratification and use the percentages of the total dollars (farthest right column), then total all of the percentages and divide by four. This will give you your weighted average for each stratum. For example in **Fig. 2** below, the total of the percentages was 26.06%. Divided by 4 this would be approximately 6.52%. That means that each stratum should contain as close to 6.52% of the total dollars of your remaining stratum. This will be achieved by starting at the first stratum and, based on the percent of total dollars, add the stratum together until they equal close to 6.52%. That ends your first stratum. Repeat for the other three stratum. Once the auditor completes this step, and then the auditor would rerun the stratification with the four new stratum. Now that you have your four stratum you are ready to draw your samples from the stratum using the Stratified Random Sampling Program.

Fig.2

Audit Sampling Procedures

IDEA - WithoutDashesMindyRedone-11000 Assets May99-Nov03.IMD

File Edit View Data Analysis Sampling Tools Window Help

WithoutDashesMindyRedone-11... Num Strat 20 stratum 4.IMD

IDEA Files

Name	Records
ABC total sample-expense invoices	6
Append 5 Stratum sample	1,511
class sample invoices-148 expen...	18
invoices to pull sample	16
Rand Samp just 1068 records for ...	1,068
Rand Samp Stratum 1	26
Rand Samp Stratum 2	26
Rand Samp Stratum 3	26
Rand Samp Stratum 4	26
STRat 1 sample	1
strat 2 sample	1
Strat 3 sample	1
stratum 4	3
WithoutDashesMindyRedone-11...	26,923
Num Strat 20 stratum 4	26,923
Num Strat \$ # 4	26,923
Num Strat \$ # 5	26,923
Num Strat \$ # 2	26,923
Num Strat \$ # 3	26,923
Num Strat \$ # 6	26,923
Num Strat \$ # 7	26,923
Num Strat \$ # 8	26,923
Num Strat 20 sratum	26,923
Num Strat 20 stratum 2	26,923
Num Strat 20 stratum 3	26,923
Num Strat 20 stratum 5	26,923
Num Strat 20 stratum 6	26,923
Num Strat by \$	26,923

Totaled on TOTAL_COST

#	>= L Limit	< U Limit	# Records	(%)	TOTAL_COST	(%)
1	769.34	14000	23,698	88.02%	58,380,136.66	6.52%
2	14000	64500	1,920	7.13%	58,161,880.39	6.49%
3	64500	156000	588	2.18%	58,902,918.43	6.57%
4	156000	300000	274	1.02%	58,920,423.38	6.58%
Lower limit exc			0	0.00%	0.00	0.00%
Upper limit exc			443	1.65%	61,517,382.61	73.84%
Totals:			26,923	100.00%	195,882,741.47	100.00%

Properties

- Database
 - Data
 - History
 - Field Statistics
 - Control Total
 - Criteria
- Results
 - Numeric stratification1
 - Numeric stratification2
 - Numeric stratification3
 - Numeric stratification4
 - Numeric stratification5
 - Numeric stratification6
 - Numeric stratification7
 - Numeric stratification8
 - Numeric stratification9
 - Numeric stratification10
 - Numeric stratification11
 - Numeric stratification12
 - Numeric stratification13
 - Numeric stratification
- Indices
 - No index
 - TOTAL_COST/A
- Comments
 - Add comment

Running Tasks To-Do List Search Results Conclusions

Show File Explorer windows side by side. Working Folder: C:\Documents and Settings\auditor\My Documents\ICT Audits\Random Sample Testing for Jim Number of Records: 26,923 Disk Space: 12.68 GB

Start Citrix(R) NFuse(...) Desktop - Citrix I... IDEA - Without... Document1 - Mic... 96% 8:50 AM

Audit Sampling Procedures

VII. CREATING THE SAMPLE

From your four stratum, using the stratified random sampling program, the auditor will select 267 records from each stratum and create a file. The auditor will then append these four files to the high dollar level file to create your total sample, (See **Fig. 3** below). By using 267 for each stratum, it will give you the total of 1068 records, which will be used in the statistical sampling procedure. An important note to follow in each stratum IDEA will give you a seed number. The auditor is to use the seed number the program provides for each stratum. The seed number is stored in your History and cannot be removed. This is important in case you should need to draw your 267 records from a stratum a second time.

Once the auditor has selected the sample from the four stratum, the auditor will need to append them to the file of the high dollar records to provide the one sample.

Generally speaking the auditor should have a total sample of the 1068 records plus between 200 to 800 records for the high dollar file. When the auditor has appended all of the files, the auditor can then export the file back to the field auditor who can use it to begin their fieldwork.

Fig. 3

	BUSINESS_UNIT	DEPARTMENT	GL_ACCOUNT	PROFILE	ASSET
1	11000	14300	15030000	LPTP	CNV0000
2	11000	15201	15030000	PCEQ	6142
3	11000	15201	15030000	PCEQ	6143
4	11000	15201	15030000	PCEQ	6144
5	11000	15201	15030000	PCEQ	6145
6	11000	15201	15030000	PCEQ	6146
7	11000	15201	15030000	PCEQ	6147
8	11000	15201	15030000	PCEQ	6148
9	11000	15201	15030000	PCEQ	6149
10	11000	15201	15030000	PCEQ	6150
11	11000	15201	15030000	PCEQ	6151
12	11000	15201	15030000	PCEQ	6152
13	11000	15201	15030000	PCEQ	6153
14	11000	15201	15030000	PCEQ	6154
15	11000	15201	15030000	PCEQ	6155
16	11000	15201	15030000	PCEQ	6156
17	11000	15201	15030000	PCEQ	6157
18	11000	15201	15030000	PCEQ	6158
19	11000	15201	15030000	PCEQ	6159
20	11000	15201	15030000	PCEQ	6160
21	11000	15201	15030000	PCEQ	6161
22	11000	15201	15030000	PCEQ	6162
23	11000	15201	15030000	PCEQ	6163
24	11000	15201	15030000	PCEQ	6164
25	11000	15201	15030000	PCEQ	6165
26	11000	15201	15030000	PCEQ	6166
27	11000	15201	15030000	PCEQ	6167
28	11000	15201	15030000	PCEQ	6168
29	11000	15201	15030000	PCEQ	6169
30	11000	15201	15030000	PCEQ	6170
31	11000	15201	15030000	PCEQ	6171
32	11000	15201	15030000	PCEQ	6172
33	11000	15201	15030000	PCEQ	6173
34	11000	15201	15030000	PCEQ	6174
35	11000	15201	15030000	PCEQ	6175

Credits within a Sample

Audit Sampling Procedures

As a result of sampling, the auditor may encounter records where the taxpayer has paid tax to a vendor erroneously or they have accrued tax and paid it to the state erroneously. Regardless of which situation occurs, the auditor cannot remove the record from the sample and replace it with another record. Credits remain in the sample but each situation is handled in a different manner.

If the taxpayer has paid tax to a vendor erroneously, the record would be marked exempt (E) and the taxpayer would be told that they need to be refunded from the vendor for that invoice and any other like invoice.

If the taxpayer has accrued tax and remitted it to the state, then the auditor would treat this record in one of two methods. First, if the taxpayer wants to extrapolate the credit through the audit, then the auditor would mark this particular record that will be held in the audit as part of the final assessment record as taxable (T), but it would have a credit value. This would offset taxable exceptions held in the audit that creates an assessment. It would be extrapolated to the extent that the entire sample is extrapolated. If the taxpayer chooses this method, then they would have no claims for refund on any other invoices not sampled in the audit period.

If the taxpayer elects not to include the credit in the sample, then the auditor would mark the record as exempt (E). The taxpayer would then be able to review all invoices that are in statute and submit a refund request to the Department of Taxation.

VIII. Creating the Exception List for the Field Auditor

Since the goal of using statistical sample is to capture all records for the audit period. It will only be necessary to gross up the error factor created from the sample by the total dollar value of the entire population. The ICT auditor, when entering data into STAUDN, can manipulate this information along with the exceptions noted.

If the sample period is less than the entire audit period, then the procedures above would be used and in addition the auditor would have to further extrapolate the results in STAUDN to determine the total assessment. The ICT auditor can manipulate the data in this situation as well to upload the data into STAUDN.