LIFO Inventory Training Basics & Audit Guide

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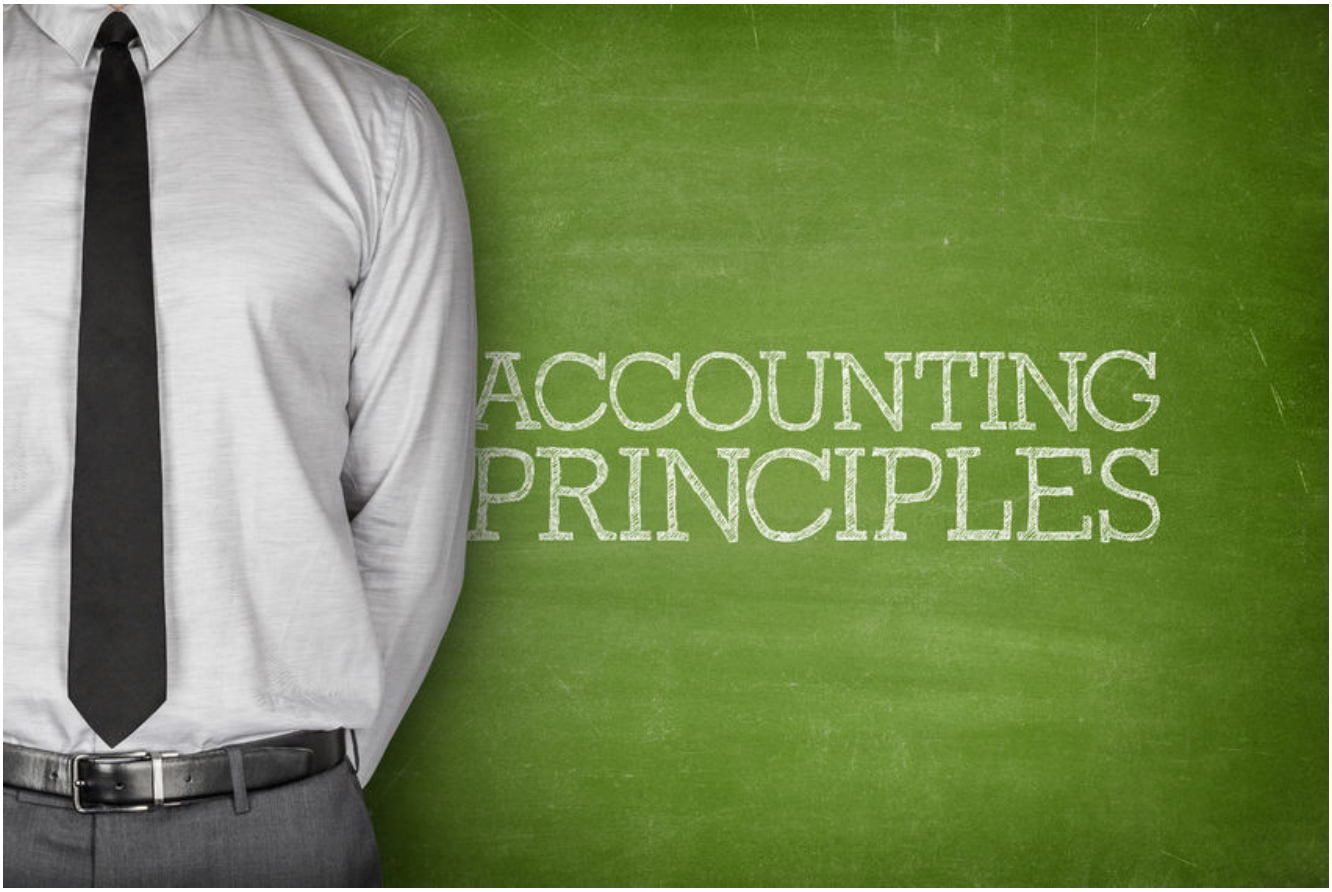
Section 1: LIFO Training Basics

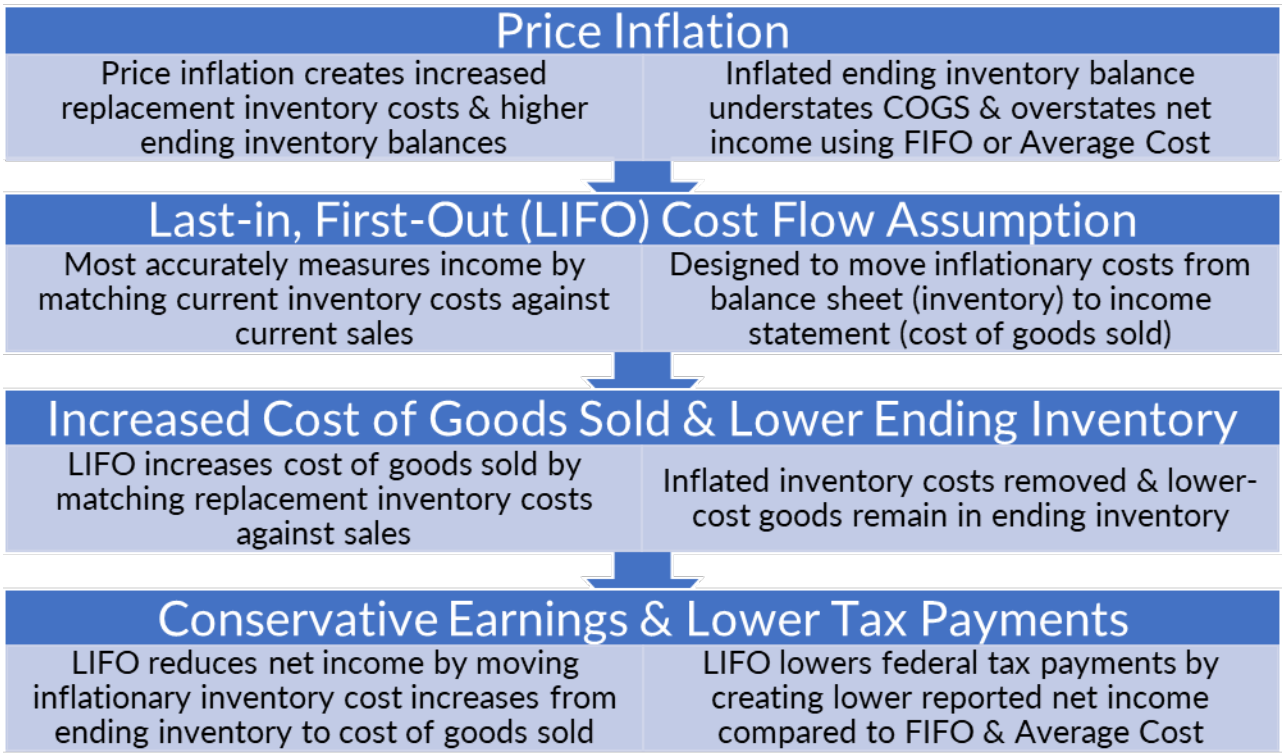


Overview

The Last-in, First-out method, also known as the LIFO method, is one of the four cost flow assumptions allowed by U.S. GAAP & the IRS (FIFO, average cost & specific identification are the three other acceptable methods). LIFO matches current inventory costs against current sales to provide a better measure of earnings. When there's inflation, the effect of using LIFO is that the value of the most recently purchased, higher cost items are included in cost of goods sold while the older, lower cost goods remain in inventory. In other words, LIFO is designed to move some of the inflationary costs from the balance sheet (inventory) to the income statement (cost of goods sold).

The IRS Tax Court made the following statement about LIFO, "The theory behind LIFO is that income may be more accurately determined by matching current costs against current revenues, thereby eliminating from earnings any artificial profits resulting from inflationary increases in inventory costs. At the heart of the LIFO method is the principle that income is more clearly reflected by matching current costs with current revenues." The annual difference between inventory valued at LIFO vs. a non-LIFO method (i.e. FIFO, average cost) is known as LIFO expense (income if LIFO > non-LIFO method), and the cumulative difference is known as the LIFO reserve. The infographic shown below further illustrates the concept of how LIFO works:

Illustration 1. LIFO Process Flow Chart



History of LIFO

In the 1930's, inflation was causing increased replacement inventory costs, artificially high ending inventory balances, understated cost of goods sold & overstated earnings. The unintended consequence was having to pay additional taxes based on artificial income on inventory not yet sold. Because of this, a large number of companies & industry trade associations collaborated with the Special Committee on Inventories of the American Institute of Accountants (now known as the AICPA) to develop an alternative inventory method that matched current costs against sales, and thereby more clearly reflecting income. The Securities & Exchange Commission considered LIFO to be permissible for

financial reporting purposes in 1936 & the AIA later advocated for LIFO to be allowed for both financial reporting & tax in 1938. The combined lobbying efforts of the AIA, corporations & trade associations eventually led to Congress accepting the use of the LIFO method for tax purposes when the Revenue Act of 1938 was passed.

LIFO's Advantages & Disadvantages

Advantages

- Reduced tax liability in periods with inflation compared to non-LIFO methods (FIFO, average cost, earliest acquisitions, etc.)
- Represents an annuity that will grow over time as opposed to a one-time deduction
- Usually provides more long-term tax savings than other valuation reserves since it continues to grow (unlike LCM & obsolescence reserves that are reversed after the related items are sold/disposed of)
- Increases cash flow & ability to grow/reinvest
- One of the few prospective financial reporting accounting method changes (also treated prospectively for tax)

Disadvantages

- Making calculation manually is often complex, error-prone & often difficult to forecast
- Difficult to provide transparent reports to financial statement users when done manually
- LCM & other inventory reserves must be taken into income over a three-year period for tax purposes
- Deflation and/or significant inventory liquidations can cause increased taxable income (LIFO income)

Contrasting Inventory Costing & Dollar-Value LIFO

Inventory Costing

- Typically managed by an accounting database or system to track inventory-related activity (purchases, sales etc.)
- Dictates unit costs used to calculate beginning inventory balance, cost of goods sold & pre-LIFO calculation ending inventory balance (also known as current-year cost)
- Dollar-value LIFO users must continue valuing inventory at cost & perform LIFO adjustment separately
- FIFO & average cost most commonly used
- Applies to both periodic & perpetual inventory system users
- Only situation where unit costs would be maintained on LIFO basis is using a method called specific identification or "unit LIFO" (seldomly used)

Dollar-value LIFO

- End of reporting period side calculation that allows companies to be on LIFO while maintaining same costing method to track purchases, sales & inventory value
- Uses ending inventory balance at cost (i.e. FIFO or average cost) to compute indexes & variables for determining ending inventory at LIFO
- General ledger journal entry made to convert period end inventory balance from cost to LIFO
- Typically involves a debit to cost of goods sold & credit to LIFO reserve contra inventory account
- Unit costs tracked in accounting database remain unaffected after adjusting journal entry to convert inventory to LIFO from cost

How LIFO is Accounted For

For dollar-value LIFO method users, a company will continue tracking inventory costs within their accounting database using the same method that was used prior to adopting LIFO. This means that beginning inventory, purchases, sales & cost of goods sold recorded during the reporting period continues to be valued any of the available non-LIFO methods (i.e. FIFO, average cost, earliest acquisitions etc.). Illustration 2 below provides an example of common inventory activity occurring during the course of a reporting period using FIFO or average cost:

Illustration 2. Accounting for Inventory Activity Under LIFO – Year 1 on LIFO

2017 Year End Inventory Costing General Ledger Journal Entries						
Description	**FIFO**			**Average Cost**		
Beginning Inventory	5,000,000 units	$5.50/unit	$27,500,000	5,000,000 units	$5.00/unit	$25,000,000
	Account Name	**Dr.**	**Cr.**	**Account Name**	**Dr.**	**Cr.**
Purchase 8,000,000 units at $6/unit	Inventory	48,000,000		Inventory	48,000,000	
	Accounts payable		48,000,000	Accounts payable		48,000,000
Sell 7,000,000 units at $12/unit	Accounts receivable	84,000,000		Accounts receivable	84,000,000	
	Cost of goods sold	39,500,000		Cost of goods sold	39,307,692	
	Sales		84,000,000	Sales		84,000,000
	Inventory		39,500,000	Inventory		39,307,692
Ending Inventory	6,000,000 units	$6.00/unit	$ 36,000,000	6,000,000 units	$5.62/unit	$ 33,692,308

2017 Year End Balances Before LIFO Calculation			
FIFO		**Average Cost**	
Inventory		**Inventory**	
27,500,000		25,000,000	
48,000,000		48,000,000	
	39,500,000		39,307,692
36,000,000		33,692,308	
Cost of Goods Sold		**Cost of Goods Sold**	
-		-	
39,500,000		39,307,692	
39,500,000		39,307,692	
LIFO Reserve		**LIFO Reserve**	
	-		-
	-		-

The LIFO reserve contra account is shown with a zero balance because this example assumes that the company will be adopting LIFO for the 2017 year end. The main consideration is to realize that companies on LIFO continue using some non-LIFO method such as FIFO or average cost to account for current period inventory activity. Once the period has been closed and all inventory related activity has been posted, the side calculation to compute the required LIFO values can now be made. Once the current year index is computed, the ending inventory balance at cost (i.e. FIFO, average cost etc.) is used along with the current period inflation index to compute the current period LIFO inventory, LIFO expense & reserve values. Using the same inventory data from Illustration 2, an example is shown below of the period end side calculation made to compute the LIFO inventory, expense & reserve balances as well as

the general ledger adjusting journal entry required to account for the difference between inventory at cost & LIFO (LIFO expense is the difference in cost of goods sold between LIFO vs. cost & is the difference between the current & prior period's LIFO reserve):

Illustration 3. LIFO Calculation & General Ledger Adjusting Journal Entry Year 1 on LIFO

2017 Year End LIFO Calculation Summary		
Description	FIFO	Average Cost
Current Period End Inventory Balance	$36,000,000	$33,692,308
Prior Period End Inventory Balance	27,500,000	25,000,000
Current Period Inflation Index	1.09	1.12
Current Period LIFO Inventory Balance	33,525,000	30,692,308
Current Period LIFO Reserve	2,475,000	3,000,000
Prior Period LIFO Reserve	-	-
Current Period LIFO Expense	$ 2,475,000	$ 3,000,000

2017 Year End Post LIFO Calculation Adjusting Journal Entry						
Description	FIFO			Average Cost		
	Account Name	Dr.	Cr.	Account Name	Dr.	Cr.
Adjust ending inventory balance	Cost of Goods Sold	2,475,000		Cost of Goods Sold	3,000,000	
from FIFO or average cost to LIFO	LIFO Reserve		2,475,000	LIFO Reserve		3,000,000

As shown in the calculation summary above, the LIFO inventory balance is between $2 - $3 million less than the current period end inventory balance at cost. This difference represents the LIFO expense (current – prior period LIFO reserve) & LIFO reserve balances (inventory at cost – LIFO inventory). It also represents how LIFO transfers inflationary inventory costs from the balance sheet (inventory) to the income statement (cost of goods sold). The debits and credits in the journal entry shown above represent increases to both cost of goods sold and the LIFO reserve contra inventory account. Since the LIFO reserve account is a contra inventory account, ending inventory gross of LIFO reserve represents inventory at cost & while ending inventory net of LIFO reserve represents inventory at LIFO. The cost of goods sold account is essentially the vehicle that allows for LIFO taxpayers to reduce their taxable income. Using the data from the illustrations above, the example below shows the 2017 year end balances after the LIFO general ledger adjusting journal entry has been made:

Illustration 4. Post LIFO Calculation Inventory Balances Year 1 on LIFO

2017 Year End Balances After LIFO Calculation

FIFO

Inventory	
27,500,000	
48,000,000	
	39,500,000
FIFO 36,000,000	
Less: LIFO Reserve (2,475,000)	
LIFO 33,525,000	

Cost of Goods Sold	
39,500,000	
2,475,000	
41,975,000	

LIFO Reserve	
	-
	2,475,000
	2,475,000

Average Cost

Inventory	
25,000,000	
48,000,000	
	39,307,692
Average Cost 33,692,308	
Less: LIFO Reserve (3,000,000)	
LIFO 30,692,308	

Cost of Goods Sold	
39,307,692	
3,000,000	
42,307,692	

LIFO Reserve	
	-
	3,000,000
	3,000,000

As shown above, the cost of goods sold account is now $2 - $3 million higher after the LIFO calculation. Aside from any other adjusting entries required after the LIFO calculation, this will be the amount used for financial reporting and tax purposes. Although the cost of goods sold account balance will be closed out after recording the closing entries, the LIFO reserve contra inventory account is a permanent account that will be carried forward into the next reporting period.

Using the data from the illustrations above, the examples shown below illustrate how inventory costs will be tracked when going from the first to the second reporting period on LIFO:

Illustration 5. Accounting for Inventory Activity Under LIFO – Year 2 on LIFO

2018 Year End Inventory Costing General Ledger Journal Entries						
Description	**FIFO**			**Average Cost**		
Beginning Inventory	6,000,000 units	$6.00/unit	$36,000,000	6,000,000 units	$5.62/unit	$33,692,308
	Account Name	**Dr.**	**Cr.**	**Account Name**	**Dr.**	**Cr.**
Purchase 7,000,000 units at $7/unit	Inventory	49,000,000		Inventory	49,000,000	
	Accounts payable		49,000,000	Accounts payable		49,000,000
Sell 8,000,000 units @13/unit	Accounts receivable	104,000,000		Accounts receivable	104,000,000	
	Cost of goods sold	50,000,000		Cost of goods sold	50,887,574	
	Sales		104,000,000	Sales		104,000,000
	Inventory		50,000,000	Inventory		50,887,574
Ending Inventory	5,000,000 units	$7.00/unit	$35,000,000	5,000,000 units	$6.36/unit	$31,804,734

2018 Year End Balances Before LIFO Calculation			
FIFO			**Average Cost**

Inventory	
36,000,000	
49,000,000	
	50,000,000
35,000,000	

Inventory	
33,692,308	
49,000,000	
	50,887,574
31,804,734	

Cost of Goods Sold	
-	
50,000,000	
50,000,000	

Cost of Goods Sold	
-	
50,887,574	
50,887,574	

LIFO Reserve	
	2,475,000
	2,475,000

LIFO Reserve	
	3,000,000
	3,000,000

As shown above, beginning inventory, purchases, sales & cost of goods sold continue being valued at cost throughout the course of the second period on LIFO (will remain the case for all subsequent periods on LIFO). As explained earlier, the LIFO reserve contra inventory account remains in place because the beginning inventory balance net of LIFO reserve represents inventory at LIFO cost. The example below illustrates the year 2 LIFO calculation results along with the adjusting journal entries and post-LIFO calculation general ledger inventory balances:

Illustration 6. LIFO Calculation, General Ledger Adjusting Journal Entry & Account Balances – Year 2

2018 Year End LIFO Calculation Summary		
Description	FIFO	Average Cost
Current Period End Inventory Balance	$35,000,000	$31,804,734
Prior Period End Inventory Balance	36,000,000	33,692,308
Current Period Inflation Index	1.17	1.13
Current Period LIFO Inventory Balance	27,444,522	25,145,782
Current Period LIFO Reserve	7,555,478	6,658,952
Prior Period LIFO Reserve	2,475,000	3,000,000
Current Period LIFO Expense	$ 5,080,478	$ 3,658,952

2018 Year End Post LIFO Calculation Adjusting Journal Entry						
Description	FIFO			Average Cost		
	Account Name	Dr.	Cr.	Account Name	Dr.	Cr.
Adjust ending inventory balance	Cost of Goods Sold	5,080,478		Cost of Goods Sold	3,658,952	
from FIFO or average cost to LIFO	LIFO Reserve		5,080,478	LIFO Reserve		3,658,952

As shown above, the current period LIFO calculation resulted in 17% & 13% inflation for each of the two calculations that resulted in approximately $5 million & $3.7 million of LIFO expense (increase to cost of goods sold). Although the LIFO inventory balance is the difference between ending inventory gross and net of the current period LIFO reserve, the LIFO expense is the difference between the current & prior period LIFO reserve and represents the current period increase to cost of goods sold. Using the data from the illustrations above, the example below shows the 2018 year end balances after the LIFO general ledger adjusting journal entry has been made:

Illustration 7. Post LIFO Calculation Inventory Balances Year 2 on LIFO

2018 Year End Balances After LIFO Calculation

FIFO

Inventory	
36,000,000	
49,000,000	
	50,000,000
FIFO 35,000,000	
Less: LIFO Reserve (7,555,478)	
LIFO 27,444,522	

Cost of Goods Sold	
50,000,000	
5,080,478	
55,080,478	

LIFO Reserve	
	2,475,000
	5,080,478
	7,555,478

Average Cost

Inventory	
33,692,308	
49,000,000	
	50,887,574
Average Cost 31,804,734	
Less: LIFO Reserve (6,658,952)	
LIFO 25,145,782	

Cost of Goods Sold	
50,887,574	
3,658,952	
54,546,526	

LIFO Reserve	
	3,000,000
	3,658,952
	6,658,952

How LIFO Reduces Taxable Income & Tax Liability

As illustrated above, the cost of goods sold account was increased in each of the two years shown and represents the vehicle for companies on LIFO to reduce their taxable income & tax liability. Using the 2018 year end (year 2) data from the illustrations above, the example below compare the differences in cost of goods sold, taxable income & federal income tax liability between LIFO, FIFO and average cost:

Illustration 8. Cost of Goods Sold, Taxable Income & Income Tax Liability Comparison

2018 Year End Taxable Income Comparison: FIFO, Avg. Cost & LIFO		
Description	FIFO	Average Cost
Beginning Inventory Balance	$36,000,000	$33,692,308
Inventory Purchases During Year	49,000,000	49,000,000
End of Year Inventory Balance at Cost	35,000,000	31,804,734
Cost of Goods Sold Before LIFO Calculation	50,000,000	50,887,574
Current Period LIFO Reserve	7,555,478	6,658,952
End of Year Inventory Balance at LIFO	27,444,522	25,145,782
Prior Period LIFO Reserve	2,475,000	3,000,000
Current Period LIFO Expense	5,080,478	3,658,952
Cost of Goods Sold After LIFO Calculation	55,080,478	54,546,526
LIFO vs Not on LIFO Taxable Income Reduction	5,080,478	3,658,952
LIFO vs Not on LIFO Income Tax Liability Reduction: 30% Rate	$ 1,524,143	$ 1,097,686

As shown above, there's a $5 million & $1.5 million reduction in taxable income & federal income tax liability when comparing a LIFO vs. non-LIFO taxpayer that uses FIFO as their current-year cost method. Similarly, there's a $3.5 million & $1.1 million reduction in taxable income & federal income tax liability when comparing a LIFO vs. non-LIFO taxpayer that uses average cost as their current-year cost method. It should be noted that this difference would also have been recognized in the first year on LIFO (prior period LIFO reserve amounts), and will recognition will continue in subsequent periods as long as there's inflation.

LIFO Election Requirements

Requirement	Financial Reporting	Tax
IRS Form 970 Application to Use LIFO Inventory Method & statement attachment must be filed with federal tax return in year of adoption	✓	✓
Opening (beginning) inventories must be valued at cost for a company's first year on LIFO	✓	✓
Ending inventories must be valued using FIFO, earliest acquisitions or average cost	✓	✓
Must be used for financial reporting & tax purposes for all periods beginning in year of election	✓	✓
Financial reporting LIFO election scope must be equal to or greater than Tax scope (i.e. goods on LIFO for tax purposes can not be greater than what is on LIFO for financial reporting)	✓	✓
Prior lower of cost or market writedowns must be restored through income over a three-year period		✓

Chapter 2: LIFO Glossary

Accounting and financial professionals who work with LIFO need to understand the associated jargon. This chapter defines a number of LIFO-related terms.

10 percent method – An IPIC LIFO submethod provided for in Reg. § 1.472-8(e)(3)(iii)(C)(2) which allows taxpayers to assign current-year cost balances to less-detailed BLS categories as long as these less-detailed categories do not subsume any more-detailed BLS categories that exceed 10 percent of the sum of current-year cost balances for that pool. The advantage of the 10 percent method is that assigning items to BLS categories can be less time consuming because less-detailed breakdowns are required. The disadvantage of using the 10 percent method is that the pool index calculation is more complicated and requires a more complicated two step weighted average calculation using both BLS weights and current-year cost dollars as the weighting factor and both arithmetic mean and harmonic mean math.

5 percent method – An IPIC LIFO submethod provided for in Reg. §§ 1.472-8(b)(4) and 1.472-8(c)(2) which allows IPIC method taxpayers to create LIFO pools based on CPI or PPI major commodity groups. When this rule is used, separate LIFO pools are established for each of the 8 CPI major groups or 15 PPI 2-digit codes that include 5% or more of the total current-year cost of inventories on LIFO. This pooling method is popular because it is an "audit proof" method favored by the IRS.

Appropriate month – This refers to which month's CPI or PPI indexes are used to calculate IPIC method category inflation indexes. IRS Reg. § 1.472-8(e)(3)(iii)(B)(3) provides rules regarding selection of "appropriate months." Taxpayers may elect to consistently use the same month every year, which is referred to as a "representative appropriate month."

Average cost – An inventory valuation method that calculates an average unit cost for each inventory item. While there are several average cost calculation methods, the most commonly used for modern inventory accounting systems is a moving average which recalculates the average unit cost with each inventory purchase for each item. The IRS refers to this method as the "rolling average" method in Rev. Proc. 2008-43 which specifies that this is a permitted LIFO current-year cost method under most circumstances.

Bureau of Labor Statistics (BLS) – A division of the Department of Labor. The BLS publishes Consumer Price Indexes (CPI) in the monthly *CPI Detailed Report*. It also publishes Producer Price Indexes (PPI) in the monthly *PPI Detailed Report*. These published indexes are used for external index LIFO calculations (a.k.a. IPIC LIFO method).

Category inflation index – This is a term used in IRS Reg. § 1.472-8(e) to describe the LIFO index for a particular CPI or PPI category.

Cost LIFO – A term that describes a method of calculating LIFO inventory balances by first converting cost inventory balances to inventory at base balances using inflation indexes that are a measure of inflation in the cost of inventory items.

Consumer Price Index (CPI) – These are price indexes compiled and published monthly by the BLS in the *CPI Detailed Report*. IPIC method taxpayers can use the indexes in Table 3 of this report for LIFO calculations. Retailers can use either CPI or PPI indexes for LIFO purposes while non-retailers must use PPI indexes. There are over 300 CPI index categories in Table 3 and approximately 200 of these are for commodities. Service category indexes cannot be used for LIFO purposes.

Cumulative LIFO index – A LIFO index that is the measure of inflation from the base year to the current year end. For double-extension LIFO index calculations, the cumulative index is calculated by dividing the sum of extensions at current year end prices (current year end on-hand quantity times current year end unit price) for all items by the sum of extensions at base-year prices (current year end on-hand quantity times prior year end unit price) for all items. For

link-chain LIFO index calculations, the cumulative index for the current year end is calculated by multiplying the cumulative index for the prior year end times the current year LIFO index. Cumulative LIFO indexes are used to convert (by division) the current year end inventory cost to base-year dollars which is then compared to the prior year end inventory at base dollars to determine whether there is an increment or decrement for the year.

Current year LIFO index – An index that is the measure of LIFO inflation for the current year only. Current year LIFO indexes are used for link-chain LIFO calculations.

Current-year cost – A term used by the IRS that describes the year end inventory balance that is to be converted to base-year prices for companies using the dollar-value LIFO method. The current-year cost is usually the general ledger balance (for each LIFO pool) adjusted to exclude valuation reserves and to include adjustments for in-transit goods, shrink reserves, vendor discounts and other price reductions. The general ledger balance will usually be inventories stated at FIFO or average cost. There are four different current year method alternatives allowed by the IRS in Reg. § 1.472-8(e)(2)(ii).

Deflator index – LIFO index used to convert or "deflate" current-year cost inventory balances to inventory at base-year price values.

External Indexes – Government-published price data published by the Bureau of Labor Statistics (BLS) to measure inflation. Consumer Price Indexes (CPI) and Producer Price Indexes (PPI) are the two external index inflation sources allowed by IRS Regs. & are used in the IPIC method to calculate LIFO indexes. Also referred to as "published or government indexes."

FIFO – This is an acronym for "first-in, first-out" which is an accounting method for determining the cost of inventories. Under this method, the first items purchased are treated as being the first items sold. Period-end inventories are valued using the unit cost of the last purchases made on an item-by-item basis.

Inflation effect – This is the portion of the change in the LIFO reserve for the current year that is attributable to the current year LIFO inflation or deflation. The amount of inflation effect for each separate LIFO pool is calculated by multiplying the prior year end current-year cost times the current year inflation or deflation percentage (current year LIFO index minus 1.00). The inflation effect will be expense if there was inflation for the current year and it will be income if there was deflation for the current year.

Inflator index – LIFO index used to multiply or "inflate" layer (or increment) at base prices to produce a layer valued at LIFO cost.

Internal indexes – A term used to describe inflation indexes calculated using a company's actual unit prices.

Inventory price index (IPI) – A measure of the current year's inflation for a particular pool when using external indexes. This term is used in IRS Reg. § 1.472-8(e)(3)(i) to describe a pool's weighted average index for taxpayers using the IPIC method. For link-chain taxpayers, a pool's IPI is multiplied times that pool's previous year's cumulative deflator index to produce the current year's cumulative deflator index, which is then used to "deflate" current-year cost balances to base-year prices.

Involuntary LIFO termination – Termination of a taxpayer's LIFO election by the IRS. The IRS can terminate a taxpayers LIFO election for the following reasons: 1) improperly electing LIFO, 2) violating the LIFO conformity rule, 3) using a current-year cost of inventories for the LIFO calculation that is net of valuation reserves, and 4) maintaining books and records that do not adequately document the calculation of LIFO indexes and inventory balances.

IPIC method – The Inventory Price Index Computation (IPIC) method was authorized by IRS Reg. § 1.472-8(e) starting in 1982. This method permits taxpayers to use published government inflation indexes, a.k.a. external indexes published by the BLS to calculate inflation for purposes of valuing LIFO inventories.

IRS Form 3115 – *Application for Change in Accounting Method*. Taxpayers must file Form 3115 for tax LIFO-related methods change including:

- Change from LIFO to a non-LIFO method (also referred to as LIFO termination)
- Change from one LIFO method to another LIFO method

There are many tax inventory methods considered by the IRS to be permissible that are "automatic approval" or "automatic consent" methods for which advance IRS consent is not required. The advantages of a change to an "automatic approval" method are that the filing deadline for this change is that for the annual tax return including extension and the Form 3115 is filed with the tax return (with a copy sent also to the Ogden, UT IRS office) and there is no IRS Users Fee ($8,600 per change). The Form 3115 for tax methods changes that are not "automatic approval" must be filed before the end of the year for the year of change. IRS Rev. Proc. 2015-13 and Rev. Proc. 2015-14 describe the IRS rules for tax method changes. Rev. Proc. 2015-14 and the Form 3115 instructions contain a list of the methods considered to be "automatic approval" methods.

IRS Form 970 – *Application to Use LIFO Inventory Method*. A Form 970 is required for:

- Initial LIFO election
- Expansion of scope of LIFO election
- Change from a non-IPIC method to the IPIC method

LIFO – This is an acronym for "last-in, first-out" which is a cost flow assumption used to value inventories. LIFO assumes that goods sold are those purchased most recently and that goods remaining in inventory at period end are those acquired in chronological order since the company adopted LIFO. This seldom matches the actual physical flow of goods. The theoretical justification for LIFO is that it matches goods sold during the current period with the cost of goods most recently purchased. Compared to alternative inventory valuation methods (FIFO & average cost), the effect of using LIFO in times of rising prices is that the value of the most-recently purchased, higher cost items are included in the cost of goods sold while older, lower cost goods remain in inventory. In other words, the LIFO cost flow is designed to move some of the inflationary costs from the balance sheet (inventory) to the income statement. This results in a lower inventory valuation, higher cost of goods sold and lower taxable income.

LIFO conformity rule – Wording in IRS Reg. § 1.472-2 that requires the use of the LIFO method for financial reporting purposes for inventories included in the LIFO election scope for tax purposes.

LIFO decrement – This refers to a negative number resulting from subtracting a prior period's inventory at base from the current period's inventory at base. A LIFO layer is not created for years that have decrements. Instead, one or more prior years' layers are reduced. A LIFO decrement is not the same as a decrease in the LIFO reserve compared to the prior year LIFO reserve – this is instead referred to as LIFO income.

LIFO election scope – This describes inventories valued using the LIFO method. Neither the IRS Regs. nor GAAP require that taxpayers electing the LIFO method use it to value all of their inventories. A LIFO election that does not encompass all inventories is referred to as "partial" or "selective" LIFO election.

LIFO layer erosion – This occurs when a decrement reduces one or more previous years' layers.

LIFO layer erosion effect – This is the portion of the change in the LIFO reserve for the current year that is attributable to the current year decrement and this reflects the difference in the cumulative indexes of the layers eroded and the current year cumulative index. The amount of the LIFO layer erosion effect for each separate LIFO pool is calculated as (current year cumulative deflator index minus weighted average cumulative index of layers eroded) times decrement at base prices. If the weighted average cumulative index of layers eroded is less than the current year index, the LIFO layer erosion effect will be income; otherwise it will be expense. The grand total of all pools' layer erosion effect for the year is the pre-tax amount of the LIFO layer erosion effect that is required by GAAP to be disclosed in the notes to the financial statements if material for financial reporting LIFO.

LIFO expense – This is the difference between the current period's LIFO reserve and the previous period's LIFO reserve (LIFO expense = current period's LIFO reserve - previous period's LIFO reserve) when this change is a positive balance (this change is referred to as LIFO income if the change is a negative balance). This is the amount that taxable income or financial reporting pre-tax income has been reduced for the current period by using LIFO.

LIFO income – This is a term used to describe a change in the LIFO reserve that results in income (prior year reserve exceeds current year reserve). LIFO income results from either a LIFO decrement, current year LIFO deflation or a combination of both. For companies using retail LIFO, LIFO income can also be a result of higher gross profit margins in the current year than in the previous year.

LIFO increment – The excess of the current period's inventory at base minus the previous period's inventory at base. This is also referred to as a "layer."

LIFO index – A ratio expressed in decimal format that is the measure of inflation for each pool for taxpayers using dollar-value LIFO.

LIFO layer – A LIFO layer is the same as a LIFO increment.

LIFO pools – For taxpayers using the dollar-value LIFO method, all inventory items included in the LIFO election scope are separated by type of item. Similar items are grouped together to establish separate pools. There are several different methods of grouping inventory items into LIFO pools allowed by the IRS in Reg. § 1.472-8(b), (c) & (d).

LIFO reserve – This is the difference between the FIFO value of inventory and the LIFO value of inventory (LIFO Reserve = FIFO - LIFO). The LIFO reserve is a measure of the cumulative amount that a company's taxable income or financial reporting pre-tax income has been reduced by using LIFO since the method was first adopted. The general ledger contra asset account used to record this difference is also referred to as the LIFO reserve.

Lower-of-cost-or-market (LCM) – Another term for market write-downs. IRS Reg. § 1.472-2(b) requires that market write-downs be eliminated for LIFO inventories.

Negative LIFO reserve – This occurs when the LIFO inventory balance is greater than the current-year cost (average cost or FIFO) balance. Also known as a "debit-balance LIFO reserve" since the LIFO reserve is stated as a contra inventory account on the balance sheet that has a normal credit balance.

New item – Inventory items that were purchased for the first time during the year and are on hand for the current year end. These present a problem for internal index calculations because an inventory accounting system will have no record of a prior year end unit price for the new item.

Producer Price Index (PPI) – These are price indexes compiled and published monthly by the BLS in the *PPI Detailed Report* reflecting average prices paid to producers (manufacturers and processors) for inventory purchase/sales transactions. IPIC method taxpayers generally use the indexes in Table 9 of this report for LIFO calculations – Table 11 indexes can be used but only if they are a better fit for the inventory items in question than any Table 9 index. There are approximately 2,500 commodity PPI index categories in Table 9. Service category indexes cannot be used for LIFO purposes.

Published indexes – See external indexes.

Retail Inventory Method (RIM) – An inventory method historically used by many retailers whereby merchandise department cost balances are calculated by multiplying departmental cost complements (of gross profit margins) times departmental retail inventory balances. RIM is used when perpetual inventory records by item are not practical. Physical inventories are taken using marked selling prices.

Retail LIFO – A term that describes the calculation of LIFO inventory balances by first converting retail inventory balances to retail basis inventory at base balances using inflation indexes that are a measure of retail price inflation. Layers at retail are then reduced to cost by multiplying them times the LIFO cost complements calculated for each pool.

Simplified LIFO – The IPIC method is commonly referred to as "simplified LIFO." Simplified LIFO is actually a term the IRS used to describe a more simplified LIFO method applicable only to very small businesses provided for in Reg. § 1.474 starting in 1981. This Reg. section became superseded after 1986.

UNICAP costs – This is the amount of labor and overhead that IRS Reg. § 263A requires taxpayers to capitalize as an add-on to inventory balances in addition to labor and overhead costs capitalized as required by GAAP. In other words, these are inventory related costs that should be treated as product costs instead of period costs according to the IRS. These costs are also referred to as Sec. 263A costs.

Weighted arithmetic mean – A method for calculation of weighted average pool indexes whereby current-year cost balances are multiplied times the current year inflation index for that CPI or PPI index category to determine an arithmetic mean "extension." The pool index is calculated by dividing by the sum of the arithmetic mean extensions for all index categories by the sum of the current-year cost. This method was used by most taxpayers prior to the issuance of the new IPIC LIFO Regs. in 2002.

Weighted harmonic mean – The math prescribed by IRS Reg. § 1.472-8(e) to calculate weighted average pool indexes for the IPIC method. Weighted harmonic mean math entails "deflating" current-year cost balances to prior year prices by division of the current-year cost by the current year inflation index for that CPI or PPI index category to determine a harmonic mean "extension." The pool index is calculated by dividing sum of the current-year cost for all index categories by the sum of the harmonic mean extensions.

Chapter 3: LIFO Methods & Submethods

Summary

LIFO Index Computation Method:

- **Dollar Value Method** – A shortcut cost flow method which measures inventory layers in terms of dollars rather than physical units. Inventory items are grouped by pools and are priced in terms of each pool's aggregate base year cost. The result is compared to each pool's aggregate base year cost at of the end of the prior year to determine whether the inventory levels have increased or decreased.
- **Specific Goods Method (Unit LIFO)** – An approach to applying LIFO in which changes in the quantity of individual types of inventory are the basis for determining whether the inventory levels have increased or whether a portion of the existing inventory has been liquidated.

LIFO Election Scope: can be selective (by stage of production, product groups, departments, business segment, parent on LIFO but subsidiary is not, etc.) with these exceptions:

- Manufacturers using Natural Business Unit Pools (NBU)
- IRS TAM 200603027 would prevent selective elections within IPIC pooling method pools

Item Definition Method:

- Individual items
- Fungible commodities measured in gallons, pounds, board feet, etc.

Inflation Comparison Period:

- **Link-Chain Method** - Compare current year-end prices to prior year-end prices
- **Double-Extension Method** - Compare current year-end prices to base-year prices

Current Year Cost & Layer Valuation Method:

- Latest acquisitions (FIFO)
- Earliest acquisitions
- 12-month moving average or rolling-average (i.e. weighted-average or average cost)
- Other method that clearly reflects income

LIFO Pooling Method:

- Resellers (retailers & wholesalers)- By line, type or class of goods
- **Manufacturers:**
    - NBU pools (separate pool required for parts purchased for resale)
    - Raw materials content pools
    - Multiple pools
    - IPIC pooling method using CPI/PPI major groups (for IPIC method taxpayers)

Inflation Measurement Source:

- **Internal Indexes:**
    - All inventory items used
    - Representative sampling (index method)
- **IPIC method:**
    - **BLS Index Selection:**
        - Consumer Price Indexes (CPI)
        - Producer Price Indexes (PPI)
    - **Index timeframe selection:**
        - Final Indexes
        - Preliminary Indexes
    - **Discontinued categories treatment:**
        - Compound inflation method
        - Substitute index method
    - **Weighted-Average pool index calculation method:**
        - 10% method
        - Most detailed category method
    - **Appropriate month selection:**
        - Annually select appropriate month (annual selection)
        - One-time binding selection of representative appropriate month

LIFO Methods & Submethods Detail

Index Computation Method Options: Specific Goods vs. Dollar-Value Methods

Specific Goods Method - This is also known as the unit LIFO method. This is an approach to applying LIFO in which a change in the quantity of individual types of inventory is the basis for determining whether the inventory levels have increased or whether a portion of the existing inventory has been liquidated. The specific goods method entails segregating physical quantities of inventory such as tons, gallons, or number of items. Each such unit is effectively a separate pool. The specific goods method was the only LIFO method allowed by the IRS from 1938 to 1947. It is seldom used today because it is cumbersome and almost always results in less tax benefits than the dollar-value method. This is because LIFO layer erosions occur for every item each year there are fewer units on hand compared to the prior year. These layer erosions reduce previous years' tax deferrals. Calculation of LIFO indexes is not necessary for this method because layers are valued at the unit price applicable to each item.

Dollar-value Method - This is a LIFO method that groups inventory items into pools that are priced in terms of aggregate base-year cost. This precludes the need to account for the various unit cost values for individual inventory

items. The result is compared with the pool's aggregate base-year cost as of the end of the prior year to determine whether the inventory level has increased or whether a portion of the inventory has been liquidated. The pool aggregate base-year cost for any year is calculated by dividing the year end current-year cost by the cumulative index for that year. When dollar-value LIFO is used, increases and decreases in items on hand are netted together which results in fewer LIFO layer erosions than if the specific goods method was used. Fewer layer erosions–compared to the specific goods method–is why almost all companies use the dollar-value LIFO method today.

Inflation Comparison Period Options - Double-extension vs. Link-chain Methods:

These are alternative methods for calculating inflation cumulative indexes. Double-extension method cumulative indexes are the quotient of current year item costs divided by base-year item costs, requiring a company to keep records of inventory item costs going back to the base year. Link-chain index calculations involve two steps: 1) calculate the "current year" inflation index by dividing the current year's item costs by the previous year's item costs, then 2) calculate the "cumulative" inflation index by multiplying the current year inflation index times the previous year's cumulative index. Link-chain indexes can be calculated using only the current year and previous year inventory cost records.

Double-extension and link-chain are terms that were originally used to describe internal index calculations using individual inventory item prices. The IRS also allowed a third method for calculating inflation indexes called the "index" method which was the double-extension method applied on a sampling basis. In practice, calculating inflation indexes using a sampling basis is common. For all years for which the dollar-value method has been permitted, the IRS the use of the double-extension method to be preferable to the link-chain method and required that a company justify its use of link-chain on the basis of the impracticality of using double-extension. This justification is not required when the IPIC method is elected and a change from a non-IPIC double-extension method to a link-chain IPIC method is an automatic approval method change.

Use of the double-extension method is especially problematic for a company that experiences fast turnover of items in inventory. The IRS requires that base-year prices be reconstructed for new items introduced into inventory. A retailer with a base year of 1980, for example, that carries a new item in 2005 would have to reconstruct what that item's cost would have been in 1980. If that is not possible the company would have to, in effect, use 2005 as the base year for that item. As older items are replaced by newer items, this has the effect of reducing the amount of inflation and, in turn, reducing the tax deferral benefit of using LIFO.

Another disadvantage of using the double-extension LIFO method is that it is much more likely to produce big swings in LIFO inflation or deflation from one year to the next, compared to using the link-chain method, when there are significant changes in the inventory mix. Current-year cost dollars are divided by cumulative indexes for each PPI category using the double-extension method (rather than current year indexes, as with the link-chain method) and the amount of inflation difference in cumulative indexes from one PPI code to another can be far greater than current year index differences. As a result, inventory mix changes from one year to the next can result in much larger changes in the pool cumulative index than when the link-chain method is used. An example of this is that one PPI code could have a cumulative index of 3.00 (200 percent inflation) while another PPI code might only have a cumulative index of 1.50 (50% inflation). Each of these PPI codes might only have a current year index of 1.02 (2% inflation) but there is 150% difference in the cumulative index inflation between the two. If the mix of dollars between the two changes significantly there can be a change in the pool cumulative index that indicates far more or less inflation than there was during the year. This can result in the amount of LIFO expense or income for the year being caused largely by a mathematical oddity rather than the actual PPI inflation or deflation. For this reason, we do not consider the double-extension method to be a reliable measure of LIFO inflation.

Most companies using the double-extension method use an internal index method but the double-extension method can also be used by companies using the IPIC method. This involves dividing current year CPI or PPI indexes by base-year CPI or PPI indexes for selected BLS categories. Double-extension is seldom used with the IPIC method because of the difficulty of reconstructing base-year costs for new items and the fact that the BLS regularly discontinues some PPI categories and introduces new ones. The IRS does not require a company to justify its use of the link-chain

methodology when the IPIC method is used. A link-chain IPIC method index calculation involves dividing current year CPI or PPI indexes by previous year CPI or PPI indexes to calculate the current year inflation index which is then be multiplied times the previous year cumulative index to calculate the current year cumulative index.

Current-year Cost Methods

IRS Reg. § 1.472-8(e)(2)(ii) specifies these alternatives for calculation of current-year cost:

a. By reference to the actual cost of the goods most recently purchased or produced.
b. By reference to the actual cost of the goods purchased or produced during the taxable year in the order of acquisition.
c. By application of an average unit cost equal to the aggregate cost of all of the goods purchased or produced throughout the taxable year divided by the total number of units purchased or produced.
d. Pursuant to any other proper method which, in the opinion of the Commissioner, clearly reflects income.

Method A above is the FIFO method. Method B above is seldom used because a side calculation is required since this is not a normal inventory accounting system cost flow option. The average cost method (method C above) is known as the 12-month moving average method. This is not a normal inventory accounting system cost flow option either which means using this method would involve a side calculation. Current-year cost methods B and C are legacy methods permitted by the IRS in the 1940s before computerized inventory accounting systems were common.

One of the most popular inventory accounting system cost flow assumptions today is not specifically listed in methods A through C above. This method is an average cost method known as the weighted moving average cost method. Under this method, the average unit cost is recalculated with every purchase of each unit and each sale of an inventory item results in a decrease in both the numerator and denominator of the average unit cost calculation fraction. The IRS refers to this method as the "rolling average" method in Rev. Proc. 2008-43 which specifies that this is a permitted LIFO current-year cost method under most circumstances. This means that it fits the description of a "proper method" referred to in method D above. Another current-year cost method deemed to be a "proper method" by the IRS is the specific identification method in which each inventory item is considered to be unique (such as an automobile) and the cost recorded for each item is the invoice cost.

LIFO Pooling Methods

A LIFO pool is a grouping of similar inventory items. Separate indexes are calculated and layer histories maintained for each LIFO pool. To maximize tax savings, companies should use as few pools as possible because this will reduce the likelihood of decrements. This is because decreases in inventory values for some items will be offset by increases in others included in the same pool. Decrements result in lower-cost goods being included in cost of goods sold which increases taxable income. The following are alternative pooling methods permitted by the IRS:

- **By Line, Type, or Class of Goods** – Wholesalers and retailers can use separate pools for each major line, type, or class of goods. Customary business practices for a particular trade or industry determine what constitutes a major line, type, or class of goods. Authorized by Reg. § 1.472-8(c)(1).
- **IPIC Pooling Method** – The IRS Regs. authorize companies using the IPIC method to create pools based on CPI or PPI major commodity groups using a "5% rule." When this rule is used, separate LIFO pools are established for each of the 8 CPI major groups or 15 PPI 2-digit codes that include 5% or more of the total current-year cost of inventories on LIFO. Reg. § 1.472-8(b)(4) describes this method for manufacturers and Reg. § 1.472-8(c)(2) for resellers (retailers and wholesalers). This pooling method is popular because it is an "audit proof" method favored by the IRS. A change to this method is also an automatic approval change while changes to most of the other pooling methods are advance approval changes.

Pooling methods available only to manufacturers:

- **Natural Business Units** – This is a pooling method authorized by Reg. § 1.472-8(b)(1) for manufacturers. A natural business unit (NBU) includes all inventory items related to a product line or related product lines, including raw materials, work-in-process, and finished goods. Distinct business units require separate pools. A natural business unit may be defined based on divisions established by internal management, separate production facilities or processes, or separate financial records. Manufacturers that also purchase goods for resale are required by the IRS

in Rev. Rul. 79-290, Rev. Rul. 82-192 and PLR 8842061 to use separate pools for manufactured goods vs. goods purchased for resale.

- **Multiple Pools** – Companies may group together similar items in a pool even if they are not all within the same natural business unit. Grouping goods together to form a pool may be based on such factors as the similarity or interchangeability of raw materials, the similarity of the production processes, the similarity of the use of the products, standard practices within the trade or industry, and whether the goods are treated similarly by a company's management. Authorized by Reg. § 1.472-8(b)(3)(i).
- **Raw Material Content** – Goods with similar raw materials, including the raw material content of work-in-process and finished goods may be grouped together to form a pool for manufacturers. Raw materials that are not similar in nature may not be grouped together in the same pool even if they are processed or manufactured into the same finished product. Authorized by Reg. § 1.472-8(b)(3)(ii).

Inflation Measurement Source – Internal vs. External (IPIC) Index Methods

These are alternative methods for calculating the inflation indexes necessary to convert current-year costs to inventory at base-year costs. Companies using the IPIC method assign their current-year cost balances to categories defined by the Bureau of Labor Statistics (BLS) and use either PPI or CPI indexes published by the BLS to calculate a weighted average pool inflation index.

The alternative to the IPIC method is to use internal indexes. Internal indexes compare the company's actual unit prices for year end on-hand inventories to calculate LIFO indexes. The unit costs compared are the current year ends to the prior year ends for the link-chain method while the double-extension LIFO method compares current and base year costs.

IPIC LIFO Submethod Options Detail

BLS table selection – Producer Price Index (PPI) v. Consumer Price Index (CPI)

The Bureau of Labor Statistics (BLS) publishes monthly Producer Price Indexes (PPI) and Consumer Price Indexes (CPI). Retailers using the IPIC method can choose to use either CPI Table 3 or PPI Table 9 indexes, while non-retailers must use PPI indexes. For taxpayers using PPI indexes, Table 9 of the *PPI Detailed Report* must be used unless the taxpayer can demonstrate that another PPI table is more appropriate. Use of PPI Table 11 indexes rather than Table 9 PPI indexes is rare because the main difference between these tables is in organization (Table 9 is organized by commodity type and Table 11 by industry type) and there are Table 9 index categories corresponding to almost every Table 11 index category. Some retailers use PPI for tax purposes and CPI for financial reporting because there has been consistently more PPI than CPI inflation for certain types of retailers.

Index Timeframe Selection - Preliminary v. Final PPI:

This is an issue for companies using PPI indexes for IPIC calculations. The BLS publishes preliminary PPI indexes approximately two weeks after the end of a month (e.g., preliminary July 2014 PPI indexes were published in the middle of August 2014) and final PPI indexes were published four months later (e.g., final July 2014 PPI indexes were published in the middle of December 2014). Companies using the IPIC method may select either preliminary or final PPI indexes but must do so consistently. The final PPI indexes reflect the receipt of price surveys from producers not received in time to be included in the preliminary index compilations and corrections of data originally reported. Final PPI indexes are less commonly used than preliminary PPI indexes because most companies do not want to wait the additional four months entailed by the use of final indexes. CPI indexes are based on marked retail selling prices. No changes to CPI indexes are made after they are published.

Weighted-Average Pool index Calculation Method - 10 Percent v. Most-detailed Category Methods

These are alternative methods for assigning inventory balances to BLS categories and calculating inflation indexes when using the IPIC method. A company using the IPIC method must elect to use one of these methods. The most-detailed categories method provided for in Reg. § 1.472-8(e)(3)(iii)(C)(1) requires assigning the current-year cost balances associated with each item in inventory to a most-detailed BLS category (a category that does not subsume another category). The 10 percent method allows taxpayers to assign current-year cost balances to less-detailed BLS

categories as long as these less-detailed categories do not subsume any more-detailed BLS categories that exceed 10 percent of the sum of current-year cost balances for that pool. The 10 percent method, which was mandated by the original 1982 IPIC Regs. and was retained as an optional method by the 2002 Regs. (§ 1.472-8(e)(3)(iii)(C)(2)), simplifies the task of assigning items in inventory to BLS categories.

While the 10 percent method makes the task of assigning inventory to BLS categories less burdensome, there is a trade-off involved because the math required to calculate category inflation indexes is more complicated. When the 10 percent method is used, the following two separate steps are required to calculate the pool index for each pool after the current year index for each BLS category (i.e. c/y PPI index divided by p/y PPI index) has been calculated:

1. Calculate the 10 percent categories' weighted average index of the more-detailed BLS categories included in the 10 percent category using the BLS weights of relative importance as the weighting factor using arithmetic mean math.
2. Calculate the weighted average pool index of the various index categories using the current-year cost of each as the weighting factor using harmonic mean math.

Taxpayers using the most-detailed categories method only use inventory dollars to weight inflation indexes. The rules governing 10 percent category assignments and the resulting index calculations can seem convoluted and confusing, especially for companies using numerous BLS categories.

The advantage of using the most-detailed categories method is the simplicity of the index calculation math and tends to be used by companies with relatively few items in inventory. The advantage of the 10 percent method is that assigning items to BLS categories can be less time consuming because a lesser number of more-detailed category breakdowns are required. This method is more likely to be used by companies with many different items in inventory.

Appropriate Month Selection

IRS Reg. § 1.472-8(e)(3)(iii)(B)(3) provides rules regarding selection of an "appropriate month." This refers to which month's CPI or PPI indexes to use to calculate IPIC method category inflation indexes. For example, a company using December as their appropriate month would calculate 2004 year end category inflation indexes using December 2004 PPI or CPI divided by December 2003 PPI or CPI. In the case of a retailer using the retail method, the appropriate month is the last month of the retailer's taxable year. In the case of all other taxpayers, the appropriate month is the month most consistent with the method used to determine the current-year cost of the dollar-value pool. A taxpayer not using the retail method may either annually select an appropriate month for each dollar-value pool or make an election on Form 970, *Application to Use LIFO Inventory Method* to use a representative appropriate month (a.k.a. representative month) consistently for the year of the IPIC LIFO method election and all future years.

IPIC LIFO Method Advantages & Disadvantages

Advantages

- **Higher inflation indexes possible** – Some companies have found CPI or PPI inflation rates to be consistently higher than their internal index inflation. For most large supermarket chains the advantage of using CPI vs. internal indexes has been substantial. An annual positive differential of 1% between CPI or PPI inflation and a company's internal index inflation would reduce taxable income by $1 million annually for a company with $100 million in total inventory at FIFO cost at the beginning of a year.
- **Fewer pools possible** – Supermarket chains not using IPIC LIFO are required to maintain as many as 12 pools. The IPIC method allows pooling based on the 8 different CPI major groups or 15 different 2-digit PPI codes. Supermarket chains using IPIC LIFO typically use the 5% rule which results in 3 to 6 pools. Having fewer pools will produce additional LIFO benefits because layer erosions are less likely.
- **Index calculation simpler than internal index** – Use of a published index precludes the need to calculate an internal index unless companies switch for tax LIFO only. Internal index calculations are usually a major undertaking and can be avoided if companies switch to IPIC for book LIFO also. IPIC LIFO weighted average index calculations can also be complicated if made manually but this problem is solved with automated LIFO software.

- **Treatment of "new items" in inventory** – These are inventory items that were purchased for the first time during the year and are on hand for the current year end. New items present a problem for internal index calculations because the inventory accounting system has no record of a prior year end unit price for the new item. The two methods for dealing with new items allowed by the IRS in calculating LIFO internal indexes are either potentially very time consuming or tend to understate the actual inflation. These problems go away completely using the IPIC method.
- **Simple way for manufacturers to use LIFO for labor and overhead inventories** – It is fairly common for manufacturers to exclude labor and overhead inventories from the LIFO election scope because the IRS does not allow separate LIFO pools for these costs (this is called the components-of-cost method). This means that for labor and overhead inventories to be included in the LIFO election scope for LIFO internal index calculations, those costs must be added to the unit cost of each item. Unless a manufacturer uses standard cost accounting, inclusion of these labor and overhead costs for each item is not practical. This problem goes away using the IPIC method because WIP and finished goods inventory items (raw materials, labor and overhead) are assigned to the appropriate PPI commodity code applicable to the ultimate finished good.
- **PPI inflation is often less volatile than Internal index LIFO inflation for manufacturers** – Manufacturers that purchase commodity-type raw materials for which the prices are volatile are especially prone to big changes in LIFO indexes from year-to-year particularly if an internal index method is used to measure LIFO inflation. When an internal index method is used, the index for the year should correlate closely to the inflation or deflation for the raw materials. Even if a large portion of the inventories are work-in-process (WIP) and finished goods, the raw materials component of these inventories will probably constitute a large part of the value of these inventories. While the long term LIFO inflation for a manufacturer may be about the same for PPI indexes as it is for internal indexes, the tax PPI index LIFO inflation is less likely to be as volatile as the book LIFO internal index inflation. This is because of the way in which PPI IPIC method LIFO inflation is calculated for WIP and finished goods inventories. The IRS IPIC LIFO Regs. specify that the PPI codes applicable to the finished goods will be used for all WIP and finished goods dollars including the labor and overhead components of WIP and finished goods. The PPI finished goods inflation is usually less volatile than raw material inventory prices. The further along in the stage of production an inventory item is and the closer that item is to being in the hands of the end user of that product, the less likely big price changes are.
- **IRS audit exposure reduced for past years** – Companies switching to the IPIC method are provided a "safe harbor" by the IRS with respect to methods used in years prior to the change. IRS audit exposure may be eliminated in these areas:
    - **Pooling** – Many companies use pooling methods not authorized by the IRS. Taxpayers may elect the optional IPIC pooling rules thereby establishing an acceptable pooling method.
    - **Statistical sampling** – Many companies use internal index sampling methods not acceptable to the IRS. For example, a company's sampling method may exclude new items.
    - **Other** – Some manufacturers still use the components of cost method despite its prohibition by the IRS. Some manufacturers also incorrectly apply raw-materials-only indexes to total inventory dollars including labor and overhead dollars. Companies can eliminate exposure from use of these methods by adopting IPIC.

Disadvantages

- **Implementation time –** Developing a means to sort inventory by the appropriate CPI or PPI categories can require considerable time & effort. The annual BLS CPI or PPI category assignment task is often time-consuming for companies with any of the following situations:
    - Large amount and/or variety of items
    - Multiple stages of production
    - Significant percentage of new items introduced into product mix annually
- **Separate Book & Tax calculations for companies required to continue using internal indexes for Book & IPIC for Tax –** Although there are hundreds (if not thousands) of companies that use IPIC LIFO for Book & Tax, most publicly-traded companies along with some larger private corporations are required to maintain

internally-calculated inflation indexes for financial reporting while using IPIC LIFO for Tax, meaning a company must maintain separate Book & Tax LIFO layer histories.

- **Certain goods are difficult or unable to be mapped to a BLS category –** The BLS has multiple BLS PPI categories for certain items, and determining the "correct" category is dependent on material composition. For example, there are often two possible PPI categories for plumbing fitting, and determining the correct code requires knowing if the product is made of plastic or metal. For many various items, this is often burdensome or impossible to determine, meaning judgement calls must often be made. Furthermore, the BLS has limited or no coverage for certain types of inventories, meaning a "catch-all" category must be used in the absence of a more applicable one.
- **Higher inflation not guaranteed** - Higher CPI or PPI inflation than for internal indexes historically is no guarantee that it will always be higher.

Chapter 4: LIFO Calculation Steps

All dollar-value method LIFO calculations, regardless of the methods used, consist of the following two primary steps:
1) Front-end: Calculation of the current period's inflation index
2) Back-end: Calculation of the current period's value of inventory at LIFO cost

Most companies are required by IRS Reg. Sec. 1.263A to capitalize inventory related labor and overhead costs over and above that required by GAAP. For LIFO taxpayers using a simplified Sec. 263A method, these costs are added to various LIFO layers that remain at any given year end which means that the calculation of these additional costs for tax return purposes requires this calculation to be made using the tax LIFO layer history schedules. The following LIFO-PRO reports are shown in these examples:

- **Report 23 – IPIC LIFO Index Calculation Report:** This shows the details of the pool index calculations using Harmonic Mean Weighting specified in the IRS Regulations.
- **Report 18a – LIFO Reserve Calculation Report:** Balances shown include inventory current year cost (FIFO or average cost), current and cumulative indexes, LIFO inventory, reserve and expense and Sec. 263A (UNICAP) costs (if applicable). This report shows all the steps necessary to calculate a given year's LIFO reserve, and shows the details of decrement calculations where applicable. This report shows these calculations for all pools and in total for a given year. The bottom section of this report (except where retail LIFO is used) shows the breakdown of the LIFO expense or income components between the inflation index effect and the layer erosion effect which is also a proof of the accuracy of the current year LIFO reserve balance. The layer erosion effect (a.k.a. LIFO layer liquidation) is the pre-tax amount that is required by GAAP to be disclosed in the notes to the financial statements (if material) for financial reporting purposes.
- **Report 17 – LIFO Inventory History Detail Report:** This is a one page per pool LIFO history for all years which includes all data contained in Report 16 but also shows the remaining balance of all layers for all years.
- **Report 16a – LIFO Layer History Report:** The top rows of Report 18a show the steps required to calculate the LIFO reserve for a given year and the bottom rows show the proof of the accuracy of the change in the LIFO reserve. Report 17 is a carryforward format LIFO layer history schedule showing the layers at base and at LIFO cost for all years of the LIFO election. Report 16a is a proof of the decrement calculations. Report 16a it shows the prior years' layers to which each decrement is allocated using the LIFO principle and shows the math of the decrement calculations. All three reports are required for comprehensive documentation of the LIFO calculations. The Report 17 shows all values for all years but does not show the math of a decrement calculation for decrements for which multiple prior years' layers are eroded. The Report 18a describes the math steps of the LIFO reserve calculation for a year including row number references but reference must be made to Reports 17 and 16a for an accounting of the LIFO layers and decrements.

Front-end LIFO Calculation Steps Examples:

Link-chain Internal Index

Companies must either calculate inflation indexes based on their actual unit prices (i.e., internal indexes) or use price indexes published by the U.S. government (i.e., the IPIC method). The example shown below is for an internal index link-chain method calculation. Current year end item quantities (column B) are extended using the prior year's and current year's prices (columns C & D, respectively). The sum of the current year's price extensions are then divided by the sum of the prior year's price extensions (25.02 ÷ 23.86 = 1.0486) to calculate the current year's inflation index. The current year's cumulative inflation index (1.0486 x 1.2 = 1.2583) is a product of the current year's inflation index multiplied times the prior year's cumulative inflation index (from the prior year's LIFO index calculation schedule).

A	B End of year Quantity on hand	C Prior year end's Unit Price	D Current year end's Unit Price	B x C E C/Y Quantity at P/Y Price	B x D F C/Y Quantity at C/Y Price
Item 1	1	6.54	6.60	6.54	6.60
Item 2	2	2.33	2.31	4.66	4.62
Item 3	3	4.22	4.60	12.66	13.80
Totals				23.86	25.02
Current year inflation index = col. F sum/col. E sum =					1.0486
Prior year cumulative index (from prior year schedule)					1.2
New cumulative index = product of previous 2 rows' indexes					1.2583

This example is greatly simplified. Non-IPIC index calculations are often made on a sampling basis.

No new items (items that were not on hand at the previous year end) are shown in the example above. If the policy for pricing of the new items is to set the prior year item cost equal to the current year end item cost for new items, the prior year end item cost column must be populated with the current value. Another way to make this calculation is to leave the prior year end item cost value blank and use formulas to accumulate the extended cost for new items v. existing items separately in order to properly apply this pricing policy (not recommended as this shortcut is prohibited by the IRS).

Double-extension Internal Index

The example shown below is for an internal index double-extension method. Current year end item quantities (column B) are extended using the base year's and current year's prices (columns C & D, respectively). The sum of the current year's price extensions are then divided by the sum of the base year's price extensions (25.02 ÷ 17.00 = 1.4718) to calculate the cumulative inflation index.

A	B End of year Quantity on hand	C Base year's end Unit Price	D Current year's end Unit Price	B x C E C/Y Quantity at Base Price	B x D F C/Y Quantity at C/Y Price
Item 1	1	5.00	6.60	5.00	6.60
Item 2	2	1.50	2.31	3.00	4.62
Item 3	3	3.00	4.60	9.00	13.80
Totals				17.00	25.02
Cumulative index = col. F sum/col. E sum =					1.4718

In contrast to the link-chain method the math used for the double-extension method results in the direct calculation of the cumulative index.

Link-chain External Index (IPIC Method Using CPI/PPI)

Companies using published government indexes assign their year end current-year cost inventory dollars to categories defined by the Bureau of Labor Statistics (BLS) and then use either PPI or CPI indexes published by the BLS to calculate a weighted average inflation index for each pool. Companies must choose either the most-detailed categories method or the 10 percent method.

The following two examples show link-chain IPIC method pool index calculations using the most-detailed categories and the 10 percent methods. Both examples use link-chain method because the use of the double-extension method is very rare for IPIC method taxpayers. The value of inventory at LIFO cost can be calculated after a cumulative inflation index has been computed and the current-year cost balance determined for each pool. Each pools' current-year cost (FIFO or average cost) is divided (or "deflated") by the cumulative index to determine the value of current inventory quantities at base-period prices, which is then compared to the prior year's inventory valued at base-period prices. If the current year's inventory at base is greater than the previous year's inventory at base, this increment is multiplied times the cumulative index to price the LIFO layer. If the current year's inventory at base is less than the previous year's inventory at base, this decrement erodes a previous layer (or multiple layers, in reverse chronological order) and is priced using the cumulative index(es) originally used to price the layer(s).

Calculation Steps

The steps below utilize a LIFO-PRO software report to illustrate the front end IPIC LIFO calculation mechanics.

Example 1 – Sample Beer & Wine Distributor: Using Producer Price Indexes & Most-detailed Category Method

The LIFO-PRO software's IPIC LIFO Index Calculation Report 23 is shown below for a sample beer and wine distributor using a single dollar-value LIFO pool, December Producer Price Indexes (PPI) & the most detailed categories method. The front-end IPIC LIFO index calculation steps for companies using these submethods are as follows:

1) **Calculate Category Inflation Indexes** (column F) by dividing the current-year PPI (column D) by the previous-year PPI (column E) for each most-detailed category.
2) **Calculate Harmonic Dollars Weighted Extensions** (column H) by dividing category current-year cost dollars (column D) by Category Inflation Indexes (column F).
3) **Calculate the pool's index** (cell G25) by dividing the sum of the pool's current-year cost dollars (cell D24) by the sum of the pool's Harmonic Dollars Weighted Extensions (cell G24).

	A	B	C	D	E	F	G
1	IPIC Method Most-Detailed Categories Method Pool Index Calculation Example						
2	LIFO-PRO Software IPIC LIFO Index Calculation Report 23						
3			Current				Harmonic
4	BLS		Year			Category	Dollars
5	Category		Cost	Dec03	Dec02	Inflation	Weighted
6	Number	Category Description	Balance	CY PPI	PY PPI	Index	Extension
7	02	PROCESSED FOODS AND FEEDS					
8	026	Beverages and beverage materials					
9	0261	Alcoholic beverages					
10	026101	Malt beverages		147.7	145.5		
11	02610101	Bottled beer	25,000	132.2	131.9	1.002274	24,943
12	02610103	Canned beer	20,000	*147.7*	*145.5*	1.015120	19,702
13	02610105	Barrels and kegs	17,000	172.8	166.5	1.037838	16,380
14	02610107	Other malt beverages	7,000	175.0	163.1	1.072961	6,524
15	026102	Distilled spirits exc brandy (bulk & bottles)					
16	02610215	Bottled liquor, except brandy	7,000	173.1	175.2	0.988014	7,085
17	026104	Wines, brandy and brandy spirits		143.4	148.1		
18	02610431	Grape table wines	12,000	138.1	142.0	0.972535	12,339
19	02610434	Dessert wines	3,000	133.9	133.6	1.002246	2,993
20	02610435	Sparkling wines	2,000	132.5	157.0	0.843949	2,370
21	02610438	Non-grape, fortified, & specialty wine or coolers	6,000	117.5	111.7	1.051925	5,704
22	02610439	Beverage brandy and neutral fruit/brandy spirits	1,000	*143.4*	*148.1*	0.968265	1,033
23		Pool Total FIFO $s =	100,000				
24						Sum of Harmonic Dollars Weighted Extensions =	99,073
25		**Pool Index = Total CYC $s / Sum of Harmonic Dollars Wtd. Extensions = 100,000 / 99,073 =**					**1.009356**

LIFO-PRO, Inc. refers to the IPIC method steps that are not using the optional 10 percent method as the Most-Detailed Categories method. The IRS has not given the use of the alternative to the 10 percent method a name.

There were missing indexes for two most-detailed categories. Reg. § 1.472-8(e)(3)(iii)(D)(2) specify that the indexes for the next less-detailed category should be used when the most-detailed category indexes are not published for a given month. A December 2003 PPI is not available for 02610103 because no indexes were published by the BLS for this category for 2003, so the current-year and previous-year indexes for 026101 are used (cells D12 & E12). The index were first published for 02610439 in September 2003 (this is a new category added by the BLS) so no December 2002 PPI is available for this category and the current-year and previous-year indexes for 026104 are used (cells D22 & E22) for this calculation. The Regs. permit the use of a reasonable method when BLS categories are added or discontinued & this is a reasonable method.

There are changes made every six months in the PPI codes published by the BLS. Some of the PPI codes shown in this example have been discontinued since this example was first written but the use of these codes is still valid to illustrate the index calculation steps.

The IRS rules for the IPIC method steps not using the 10% method are contained in Reg. § 1.472-8(e)(3)(iii)(C)(1).

Example 2 – Sample Beer & Wine Distributor: Using Producer Price Indexes & Ten Percent Method
The LIFO-PRO software's IPIC LIFO Index Calculation Report 23 is shown below for a sample beer and wine distributor using a single dollar-value LIFO pool, December Producer Price Indexes (PPI) & the ten percent method. The front-end IPIC LIFO index calculation steps for companies using these submethods are as follows:

1) **Calculate Category Inflation Indexes for categories not requiring BLS weighting** (i.e., most-detailed categories that exceed 10% of the pool total, or less-detailed categories where the 10% threshold is met and all of the

more-detailed categories included in the less-detailed category are present in inventory). In this example the current-year cost dollars assigned to 026101, 026103, 02610105, & 02610431 each exceed 10% of the pool total. The Category Inflation Indexes for these categories (column L) are calculated by dividing the current-year PPI (column F) by the previous-year PPI (column G).

2) **Calculate Category Inflation Indexes for categories requiring BLS weighting** (i.e., less-detailed categories where the 10% threshold is met but not all of the more-detailed categories encompassed by the less-detailed category are included in the computation). In this example the current-year cost inventory dollars for 02610107, 02610215, 02610434, 02610435, 02610438, & 02610439 are each less than 10% of the pool total. The sub-steps for completing category inflation indexes for categories requiring BLS weighting are:
   A. **Calculate Current-Year Inflation Indexes** (column H) by dividing current-year PPI (column F) by previous-year PPI (column G).
   B. **Calculate BLS Weighted Extensions** (column J) by multiplying BLS Weights (column I) times Current-Year Inflation Indexes (column H).
   C. **Calculate Category Inflation Indexes** (column K) by dividing the sum of the BLS Weighted Extensions (cell J26 for 0261, cell J30 for 026104) by the sum of the BLS Weights (cell I26 for 0261, cell I30 for 026104). This is referred to by the IRS as "arithmetic mean math" which the Regs. specify should be used for this step rather than the harmonic mean math used for the pool index calculation.
3) **Calculate Harmonic Dollars Weighted Extensions** (column L) by dividing category current-year cost dollars (column D) by Category Inflation Indexes (column K).
4) **Calculate the pool's index** (cell L36) by dividing the sum of the pool's current-year cost dollars (cell D23) by the sum of the pool's Harmonic Dollars Weighted Extensions (cell L35).

IPIC 10% Percent Method Pool Index Calculation Example
LIFO-PRO Software IPIC LIFO Index Calculation Report 23

BLS Category Number	Category Description	Current Year Cost Balance	Category % to Pool Total	Dec03 CY PPI	Dec02 PY PPI	Current Year Inflation Index	2002 BLS Weight	BLS Weighted Extension	Category Inflation Index	Harmonic Dollars Weighted Extension	Index Category BLS Number
02	PROCESSED FOODS AND FEEDS										
026	Beverages and beverage materials										
0261	Alcoholic beverages										
026101	Malt beverages										
02610101	Bottled beer	25,000	21.6%	132.2	131.9				1.002274	24,943	<-02610101
02610103	Canned beer	20,000	17.2%	*147.7*	*145.5*				1.015120	19,702	<-02610103
02610105	Barrels and kegs	32,000	27.6%	172.8	166.5				1.037838	30,833	<-02610105
02610107	Other malt beverages	8,000	6.9%								0261
026102	Distilled spirits exc brandy (bulk & bottles)										
02610215	Bottled liquor, except brandy	5,000	4.3%								0261
026104	Wines, brandy and brandy spirits										
02610431	Grape table wines	12,000	10.3%	138.1	142.0				0.972535	12,339	<-02610431
02610434	Dessert wines	3,000	2.6%								026104
02610435	Sparkling wines	2,000	1.7%								026104
02610438	Non-grape, fortified, & specialty wine or coolers	8,000	6.9%								026104
02610439	Beverage brandy and neutral fruit/brandy spirits	1,000	0.9%								026104
	Pool Total FIFO $s =	116,000									
Calculations for Categories Requiring BLS Weighting & 10% Roll-ups:											
0261	Alcoholic beverages	13,000	11.2%	∑ BLS Wts. & Wtd. Extns.=			0.077	0.077181	1.002356	12,969	
02610107	Other malt beverages	8,000	6.9%	175.0	163.1	1.072961	0.013	0.013948			
02610215	Bottled liquor, except brandy	5,000	4.3%	173.1	175.2	0.988014	0.064	0.063233			
026104	Wines, brandy and brandy spirits	14,000	12.1%	∑ BLS Wts. & Wtd. Extns.=			0.039	0.037289	0.956119	14,643	
02610434	Dessert wines	3,000	2.6%	133.9	133.6	1.002246	0.009	0.009020			
02610435	Sparkling wines	2,000	1.7%	132.5	157.0	0.843949	0.013	0.010971			
02610438	Non-grape, fortified, & specialty wine or coolers	8,000	6.9%	117.5	111.7	1.052	0.010	0.010519			
02610439	Beverage brandy and neutral fruit/brandy spirits	1,000	0.9%	*143.4*	*148.1*	0.968265	0.007	0.006778			
						Sum of Harmonic Dollars Weighted Extensions =				115,430	
	Pool Index = Pool total current-year cost $s / Sum of Harmonic Dollars Weighted Extentions = 116,000 / 115,430 =									1.004942	

In practice, a company using the 10 Percent method would assign inventory dollars only to those categories that 1) were not likely to exceed 10% of the pool total, and 2) were not likely to include any more-detailed categories that themselves exceeded 10% of the pool total.

There were missing indexes for two most-detailed categories. Reg. § 1.472-8(e)(3)(iii)(D)(2) specify that the indexes for the next less-detailed category should be used when the most-detailed category indexes are not published for a given month. A December 2003 PPI is not available for 02610103 because no indexes were published by the BLS for this category for 2003, so the current-year and previous-year indexes for 026101 are used (cells F12 & G12). The index were first published for 02610439 in September 2003 (this is a new category added by the BLS) so no December 2002 PPI is available for this category and the current-year and previous-year indexes for 026104 are used (cells F34 & G34) for this calculation. The Regs. permit the use of a reasonable method when BLS categories are added or discontinued & this is a reasonable method. No 2002 BLS Weight is available for 02610439 so the 2003 BLS Weight for that category is used (cell I34).

There are changes made every six months in the PPI codes published by the BLS. Some of the PPI codes shown in this example have been discontinued since this example was first written but the use of these codes is still valid to illustrate the index calculation steps.

The IRS rules for the 10% method steps are contained in Reg. § 1.472-8(e)(3)(iii)(C)(2).

Back-end LIFO Calculation Steps Examples

Calculation Steps

The steps below utilize the following LIFO-PRO software reports to illustrate the back end LIFO calculation mechanics:

- **Report 18a – LIFO Reserve Calculation Report:** Balances shown include inventory current year cost (FIFO or average cost), current and cumulative indexes, LIFO inventory, reserve and expense and Sec. 263A (UNICAP) costs (if applicable). This report shows all the steps necessary to calculate a given year's LIFO reserve, and shows the details of decrement calculations where applicable. This report shows these calculations for all pools and in total for a given year. The bottom section of this report (except where retail LIFO is used) shows the breakdown of the LIFO expense or income components between the inflation index effect and the layer erosion effect which is also a proof of the accuracy of the current year LIFO reserve balance. The layer erosion effect (a.k.a. LIFO layer liquidation) is the pre-tax amount that is required by GAAP to be disclosed in the notes to the financial statements (if material) for financial reporting purposes.
- **Report 17 – LIFO Inventory History Detail Report:** This is a one page per pool LIFO history for all years which includes all data contained in Report 16 but also shows the remaining balance of all layers for all years.
- **Report 16a – LIFO Layer History Report:** The top rows of Report 18a show the steps required to calculate the LIFO reserve for a given year and the bottom rows show the proof of the accuracy of the change in the LIFO reserve. Report 17 is a carryforward format LIFO layer history schedule showing the layers at base and at LIFO cost for all years of the LIFO election. Report 16a is a proof of the decrement calculations. Report 16a it shows the prior years' layers to which each decrement is allocated using the LIFO principle and shows the math of the decrement calculations. All three reports are required for comprehensive documentation of the LIFO calculations. The Report 17 shows all values for all years but does not show the math of a decrement calculation for decrements for which multiple prior years' layers are eroded. The Report 18a describes the math steps of the LIFO reserve calculation for a year including row number references but reference must be made to Reports 17 and 16a for an accounting of the LIFO layers and decrements.

Example 1- LIFO calculation with a 2001 base year & LIFO increment

The first example of a LIFO inventory calculation shows data for a company's first year using the LIFO method. Current-year cost inventory increased from 10 million dollars at the 2000 base year end to 12 million dollars for the 2001 year end and there was 5% inflation that resulted in an increment (i.e. layer was created).

SAMPLE COMPANY 2001 YEAR END LIFO RESERVE CALCULATION REPORT 18a			
Pool number			**1**
Pool name	**Row**	**Formula/Source**	**All goods**
Current-year cost	7	Inventory total	12,000,000
Current year deflator index	8	Pool index calculated	1.050000
Prior year cumulative deflator index	9	Layer history Report 16	1.000000
Current year cumulative deflator index	10	Row 8 times Row 9	1.050000
Current year inventory at base	11	Row 7 divided by Row 10	11,428,571
Prior year inventory at base	12	Layer history Report 16	10,000,000
Increase (decrease) at base	13	Row 11 minus Row 12	1,428,571
Current year cumulative inflator index	14	Same as Row 10 for increment	1.050000
Increase (decrease) in LIFO cost	15	Row 13 x Row 14	1,500,000
Prior year LIFO inventory	16	Layer history Report 16	10,000,000
Current year LIFO inventory	17	Row 15 plus Row 16	11,500,000
Current year LIFO reserve	18	Row 7 minus Row 17	500,000
Prior year LIFO reserve	19	Layer history Report 16	0
Current year LIFO expense (income)	20	Row 18 minus Row 19	500,000
Proof of current year LIFO expense (income):			
Current year inflation (deflation)	22	Row 8 minus one as a percentage	5.00%
Prior year current-year cost	23	Layer history Report 16	10,000,000
C/Y expense (income) due to inflation	24	Row 22 times Row 23	500,000
C/Y cum. def. index minus avg. index of layers eroded	25	n/a-no decrement was created	n/a
Expense (income) due to layer erosions	26	n/a-no decrement was created	n/a
Total current year LIFO expense (income)	27	Row 24 plus Row 26 (ties to Row 20)	500,000

Rows 7-20 of the above report show all the steps necessary to calculate the LIFO reserve for this year. Rows 22-27 show the proof to verify the accuracy of the Row 14 balance. The 2001 Increase at LIFO cost (LIFO increment) is calculated as follows: **2001 Increase at Base x 2001 Inflator Index = 1,428,571 x 1.050 = 1,500,000.**

Shown below is the LIFO-PRO software Report 17 that is a LIFO layer history schedule which includes all data fields involved in the LIFO calculation. This carryforward report format shows the amount of all years' layers that existed for all years including the leftmost column base year (year end prior to LIFO election).

Sample Company

LIFO Inventory History Schedule Report 17

Pool: 1 All goods

	2000	2001
Current-year cost	10,000,000	12,000,000
Current yr. index	1.000000	1.050000
Cumulative index	1.000000	1.050000
Inventory at base	10,000,000	11,428,571
Change at base	10,000,000	1,428,571
Cum. inflator index	1.000000	1.050000
Change at LIFO cost	10,000,000	1,500,000
LAYERS AT BASE:		
2000	10,000,000	10,000,000
2001		1,428,571
Totals	10,000,000	11,428,571
LIFO LAYERS AT COST:		
2000	10,000,000	10,000,000
2001		1,500,000
Totals	10,000,000	11,500,000
LIFO RESERVE	0	500,000
LIFO EXPENSE	0	500,000

Example 2 - LIFO calculation with a 2001 base year & LIFO decrement (liquidation)

The second example of a LIFO inventory calculation shows data for a company's first year using the LIFO method. Current-year cost inventory decreased from 10 million dollars at the 2000 base year end to 8 million dollars for the 2001 year end and there was 5% inflation in 2001 resulting in a decrement.

SAMPLE COMPANY 2001 YEAR END LIFO RESERVE CALCULATION REPORT 18a			
Pool number			**1**
Pool name	**Row**	**Formula/Source**	**All goods**
Current-year cost	7	Inventory total	12,000,000
Current year deflator index	8	Pool index calculated	1.050000
Prior year cumulative deflator index	9	Layer history Report 16	1.000000
Current year cumulative deflator index	10	Row 8 times Row 9	1.050000
Current year inventory at base	11	Row 7 divided by Row 10	11,428,571
Prior year inventory at base	12	Layer history Report 16	10,000,000
Increase (decrease) at base	13	Row 11 minus Row 12	1,428,571
Current year cumulative inflator index	14	Same as Row 10 for increment	1.050000
Increase (decrease) in LIFO cost	15	Row 13 x Row 14	1,500,000
Prior year LIFO inventory	16	Layer history Report 16	10,000,000
Current year LIFO inventory	17	Row 15 plus Row 16	11,500,000
Current year LIFO reserve	18	Row 7 minus Row 17	500,000
Prior year LIFO reserve	19	Layer history Report 16	0
Current year LIFO expense (income)	20	Row 18 minus Row 19	500,000
Detail of decrements calculation:			
Decrease at base by year:	23		
	24	Report 16a	-2,380,952 00
Cumulative inflator indexes for decrements:	25		
	26	Report 16a	1.000000 00
Decrease at LIFO cost by year:	27		
	28	Report 16a	-2,380,952 00
Proof of current year LIFO expense (income):			
Current year inflation (deflation)	30	Row 8 minus one as a percentage	5.00%
Prior year current-year cost	31	Layer history Report 16	10,000,000
C/Y expense (income) due to inflation	32	Row 30 times Row 31	500,000
C/Y cum. def. index minus avg. index of layers eroded	33	Row 10 - Row 26	.050000
Expense (income) due to layer erosions	34	Row 13 * Row 33	-119,048
Total current year LIFO expense (income)	35	Row 32 plus Row 34 (ties to Row 20)	380,952

Rows 24-28 show a proof of the 2001 LIFO expense amount. The row 24 layer erosions effect amount is required by GAAP to be disclosed in the notes to the financial statements (if material). The 2001 Decrease at LIFO cost (LIFO decrement) is calculated as follows: **2002 Decrease at Base x 2001 Inflator Index = -2,380,952 x 1.000 = -2,380,952.**

Sample Company LIFO Inventory History Schedule Report 17 Pool: 1 All goods		
	2000	2001
Current-year cost	10,000,000	8,000,000
Current yr. index	1.000000	1.050000
Cumulative index	1.000000	1.050000
Inventory at base	10,000,000	7,619,048
Change at base	10,000,000	-2,380,952
Cum. inflator index	1.000000	1.050000
Change at LIFO cost	10,000,000	-2,380,952
LAYERS AT BASE:		
2000	10,000,000	7,619,048
2001		0
Totals	10,000,000	7,619,048
LIFO LAYERS AT COST:		
2000	10,000,000	7,619,048
2001		0
Totals	10,000,000	7,619,048
LIFO RESERVE	0	380,952
LIFO EXPENSE	0	380,952

Example 3 - LIFO calculation with a 2000 base year, LIFO increment & multiple LIFO decrements

The third example of a LIFO inventory calculation shows data for a company that has been on LIFO for three years beginning in 2001. Current-year cost increased from 10 million to 12 million dollars during the first year and there was 5% inflation (which would have been calculated on another schedule) resulting in an increment. Current-year cost decreased from 12 million to 11 million dollars during the second year and there was 1% deflation resulting in a decrement which partially eroded the first year's layer. Current-year cost decreased from 11 million to 10 million dollars during the third year and there was 2% deflation resulting in a decrement that completely eroded the first year's layer and partially eroded the base layer. Five reports are shown for this example; one Report 18a for each year, one Report 16a for all years & one Report 17 for all years.

SAMPLE COMPANY 2001 YEAR END LIFO RESERVE CALCULATION REPORT 18a			
Pool number			**1**
Pool name	**Row**	**Formula/Source**	**All goods**
Current-year cost	7	Inventory total	12,000,000
Current year deflator index	8	Pool index calculated	1.050000
Prior year cumulative deflator index	9	Layer history Report 16	1.000000
Current year cumulative deflator index	10	Row 8 times Row 9	1.050000
Current year inventory at base	11	Row 7 divided by Row 10	11,428,571
Prior year inventory at base	12	Layer history Report 16	10,000,000
Increase (decrease) at base	13	Row 11 minus Row 12	1,428,571
Current year cumulative inflator index	14	Same as Row 10 for increment	1.050000
Increase (decrease) in LIFO cost	15	Row 13 x Row 14	1,500,000
Prior year LIFO inventory	16	Layer history Report 16	10,000,000
Current year LIFO inventory	17	Row 15 plus Row 16	11,500,000
Current year LIFO reserve	18	Row 7 minus Row 17	500,000
Prior year LIFO reserve	19	Layer history Report 16	0
Current year LIFO expense (income)	20	Row 18 minus Row 19	500,000
Proof of current year LIFO expense (income):			
Current year inflation (deflation)	22	Row 8 minus one as a percentage	5.00%
Prior year current-year cost	23	Layer history Report 16	10,000,000
C/Y expense (income) due to inflation	24	Row 22 times Row 23	500,000
C/Y cum. def. index minus avg. index of layers eroded	25	n/a-no decrement was created	n/a
Expense (income) due to layer erosions	26	n/a-no decrement was created	n/a
Total current year LIFO expense (income)	27	Row 24 plus Row 26(ties to Row 20)	500,000

SAMPLE COMPANY 2002 YEAR END LIFO RESERVE CALCULATION REPORT 18a			
Pool number			**1**
Pool name	**Row**	**Formula/Source**	**All goods**
Current-year cost	7	Inventory total	11,000,000
Current year deflator index	8	Pool index calculated	.990000
Prior year cumulative deflator index	9	Layer history Report 16	1.050000
Current year cumulative deflator index	10	Row 8 times Row 9	1.039500
Current year inventory at base	11	Row 7 divided by Row 10	10,582,011
Prior year inventory at base	12	Layer history Report 16	11,428,571
Increase (decrease) at base	13	Row 11 minus Row 12	-846,560
Current year cumulative inflator index	14	Same as Row 10 for increment	n/a
Increase (decrease) in LIFO cost	15	Row 13 x Row 14	-888,888
Prior year LIFO inventory	16	Layer history Report 16	11,500,000
Current year LIFO inventory	17	Row 15 plus Row 16	10,611,112
Current year LIFO reserve	18	Row 7 minus Row 17	388,888
Prior year LIFO reserve	19	Layer history Report 16	500,000
Current year LIFO expense (income)	20	Row 18 minus Row 19	-111,112
Detail of decrements calculation:			
Decrease at base by year:	23		
	24	Report 16a	-846,560 01
Cumulative inflator indexes for decrements:	25		
	26	Report 16a	1.050000 01
Decrease at LIFO cost by year:	27		
	28	Report 16a	-888,888 01
Proof of current year LIFO expense (income):			
Current year inflation (deflation)	30	Row 8 minus one as a percentage	-1.00%
Prior year current-year cost	31	Layer history Report 16	12,000,000
C/Y expense (income) due to inflation	32	Row 30 times Row 31	-120,001
C/Y cum. def. index minus avg. index of layers eroded	33	Row 10 - Row 26	-.010500
Expense (income) due to layer erosions	34	Row 13 * Row 33	8,889
Total current year LIFO expense (income)	35	Row 32 plus Row 34 (ties to Row 20)	-111,112

In the example above, the 2002 decrease at base erodes only the 2001 layer. The 2002 decrease at LIFO cost is calculated by multiplying the 2002 decrease at base times the inflator index used to create the 2001 layer & is as follows: **2002 Decrease at Base x 2001 Inflator Index = 2002 Decrease at LIFO Cost -846,560 x 1.050 = -888,888**

SAMPLE COMPANY 2003 YEAR END LIFO RESERVE CALCULATION REPORT 18a			
Pool number			**1**
Pool name	**Row**	**Formula/Source**	**All goods**
Current-year cost	7	Inventory total	10,000,000
Current year deflator index	8	Pool index calculated	.980000
Prior year cumulative deflator index	9	Layer history Report 16	1.039500
Current year cumulative deflator index	10	Row 8 times Row 9	1.018710
Current year inventory at base	11	Row 7 divided by Row 10	9,816,336
Prior year inventory at base	12	Layer history Report 16	10,582,011
Increase (decrease) at base	13	Row 11 minus Row 12	-765,675
Current year cumulative inflator index	14	Same as Row 10 for increment	n/a
Increase (decrease) in LIFO cost	15	Row 13 x Row 14	-794,775
Prior year LIFO inventory	16	Layer history Report 16	10,611,112
Current year LIFO inventory	17	Row 15 plus Row 16	9,816,336
Current year LIFO reserve	18	Row 7 minus Row 17	183,664
Prior year LIFO reserve	19	Layer history Report 16	388,888
Current year LIFO expense (income)	20	Row 18 minus Row 19	-205,225
Detail of decrements calculation:			
Decrease at base by year:	23		
	24	Report 16a	-582,011 01
	25	Report 16a	-183,664 00
	26	Sum of rows 24 to 25	-765,675
Cumulative inflator indexes for decrements:	27		
	28	Report 16a	1.050000 01
	29	Report 16a	1.000000 00
Average index for decrement	30	Weighted avg. index of rows 28 & 29	1.038006
Decrease at LIFO cost by year:	31		
	32	Report 16a	-611,112 01
	33	Report 16a	-183,664 00
	34	Sum of rows 32 to 33	-794,775
Proof of current year LIFO expense (income):			
Current year inflation (deflation)	36	Row 8 minus one as a percentage	-2.00%
Prior year current-year cost	37	Layer history Report 16	11,000,000
C/Y expense (income) due to inflation	38	Row 36 times Row 37	-220,000
C/Y cum. def. index minus avg. index of layers eroded	39	Row 10 - Row 30	-.019296
Expense (income) due to layer erosions	40	Row 13 * Row 39	14,775
Total current year LIFO expense (income)	41	Row 38 plus Row 40 (ties to Row 20)	-205,225

In the example above, the 2003 decrease at base eliminates the portion of the 2001 layer remaining after the 2002 decrement and partially erodes the 2000 (base-year) layer. The 2003 decrease at LIFO cost is calculated by 1) multiplying a negative amount equal to the 2001 layer at base remaining after the 2002 decrement times the 2001

inflator index, and 2) multiplying the additional 2003 decrease at base times the 2000 inflator index, and 3) adding the products of Steps 1 & 2.

2003 Decrease at LIFO Cost Formula = (-2001 layer at base remaining after 2002 decrement x 2001 inflator index) + ((2003 decrease at base - 2001 layer at base remaining after 2002 decrement) x 2000 inflator index)

2003 Decrease at LIFO Cost Calculation = (-582,011 x 1.050) + ((-765,675 – 582,011) x 1.000) = -611,112 + (-183,664 x 1.000) = -611,112 - 183,664 = -794,775

Sample Company
LIFO LAYER HISTORY PROOF REPORT 16a
Pool: 1 All goods

LAYERS AT BASE:	2000	2001	Increase (Decrease) At Base
2000	10,000,000		10,000,000
2001		1,428,571	1,428,571
2002		-846,560	-846,560
2003	-183,664	-582,011	-765,675
Layer remaining	9,816,336	0	9,816,336
			Inc (Dec)
Cum. inflator index	1.000000	1.050000	in LIFO
LIFO LAYERS AT COST:			Inventory
2000	10,000,000		10,000,000
2001		1,500,000	1,500,000
2002		-888,888	-888,888
2003	-183,664	-611,112	-794,775
Layer remaining	9,816,336	0	9,816,336

This report shows the detail by layer of all decrements & the detail by layer of all layers remaining after 2003.

Sample Company

LIFO Inventory History Schedule Report 17

Pool: 1 All goods

	2000	2001	2002	2003
Current-year cost	10,000,000	12,000,000	11,000,000	10,000,000
Current yr. index	1.000000	1.050000	.990000	.980000
Cumulative index	1.000000	1.050000	1.039500	1.018710
Inventory at base	10,000,000	11,428,571	10,582,011	9,816,336
Change at base	10,000,000	1,428,571	-846,560	-765,675
Cum. inflator index	1.000000	1.050000	1.039500	1.018710
Change at LIFO cost	10,000,000	1,500,000	-888,888	-794,775
LAYERS AT BASE:				
2000	10,000,000	10,000,000	10,000,000	9,816,336
2001		1,428,571	582,011	0
2002			0	0
2003				0
Totals	10,000,000	11,428,571	10,582,011	9,816,336
LIFO LAYERS AT COST:				
2000	10,000,000	10,000,000	10,000,000	9,816,336
2001		1,500,000	611,112	0
2002			0	0
2003				0
Totals	10,000,000	11,500,000	10,611,112	9,816,336
LIFO RESERVE	0	500,000	388,888	183,664
LIFO EXPENSE	0	500,000	-111,112	-205,225

Calculating Sec. 263A Costs for LIFO Taxpayers

LIFO taxpayers using a simplified Sec. 263A (a.k.a. UNICAP) method can apply their Section 263A costs by multiplying the appropriate UNICAP rate times the layer at tax LIFO cost. The following example of a LIFO inventory calculation including UNICAP costs uses the same data as Example 3 above, but applies the following UNICAP rates by year:
2000 – 5.0%
2001 – 5.25%
2002 – 4.8%
2003 – 4.9%

Decrements of UNICAP layers are calculated similarly to decrements of layers at LIFO cost—the same UNICAP rates used when layers are created are used in reverse chronological order to calculate decreases in UNICAP costs.

SAMPLE COMPANY 2003 YEAR END LIFO RESERVE CALCULATION REPORT 18a
BEFORE & INCLUDING UNICAP COSTS

Pool number			1
Pool name	**Row**	**Formula/Source**	**All goods**
Current-year cost	7	Inventory total	10,000,000
Current year deflator index	8	Pool index calculated	.980000
Prior year cumulative deflator index	9	Layer history Report 16	1.039500
Current year cumulative deflator index	10	Row 8 times Row 9	1.018710
Current year inventory at base	11	Row 7 divided by Row 10	9,816,336
Prior year inventory at base	12	Layer history Report 16	10,582,011
Increase (decrease) at base	13	Row 11 minus Row 12	-765,675
Current year cumulative inflator index	14	Same as Row 10 for increment	n/a
Increase (decrease) in LIFO cost	15	Row 13 x Row 14	-794,775
Prior year LIFO inventory	16	Layer history Report 16	10,611,112
Current year LIFO inventory	17	Row 15 plus Row 16	9,816,336
Current year LIFO reserve	18	Row 7 minus Row 17	183,664
Prior year LIFO reserve	19	Layer history Report 16	388,888
Current year LIFO expense (income)	20	Row 18 minus Row 19	-205,225
Current year UNICAP ratio	22	Client prepared schedule	.490000
Current year UNICAP layer(decrement)	23	Row 48	-41,267
Prior year UNICAP costs capitalized	24	Report 16 with UNICAP costs	532,083
Current year UNICAP costs capitalized	25	Row 23 plus Row 24	490,817
Current year LIFO inventory plus UNICAP	26	Row 17 plus Row 25	10,307,153
Detail of decrements calculation:			
Decrease at base by year:	29		
	30	Report 16a	-582,011 01
	31	Report 16a	-183,664 00
	32	Sum of rows 30 to 31	-765,675
Cumulative inflator indexes for decrements:	33		
	34	Report 16a	1.050000 01
	35	Report 16a	1.000000 00
Average index for decrement	36	Weighted avg. index of rows 34 - 35	1.038006
Decrease at LIFO cost by year:	37		
	38	Report 16a	-611,112 01
	39	Report 16a	-183,664 00
	40	Sum of rows 38 to 39	-794,775
UNICAP rates for decrements:	41		
	42	Report 16a	.052500 01
	43	Report 16a	.050000 00
Decrease in UNICAP costs:	45		
	46	Report 16a	-32,083 01
	47	Report 16a	-9,183 00
	48	Sum of rows 46 to 47	-41,267
Proof of current year LIFO expense (income):			
Current year inflation (deflation)	50	Row 8 minus one as a percentage	-2.00%
Prior year current-year cost	51	Layer history Report 16	11,000,000
C/Y expense (income) due to inflation	52	Row 50 times Row 51	-220,000
C/Y cum. def. index minus avg. index of layers eroded	53	Row 10 - Row 36	-.019296
Expense (income) due to layer erosions	54	Row 13 * Row 53	14,775
Total current year LIFO expense (income)	55	Row 52 plus Row 54 (ties to Row 20)	-205,225

Sample Company
LIFO LAYER HISTORY PROOF REPORT 16a
BEFORE & INCLUDING UNICAP COSTS
Pool: 1 All goods

LAYERS AT BASE:	2000	2001	Increase (Decrease) At Base
2000	10,000,000		10,000,000
2001		1,428,571	1,428,571
2002		-846,560	-846,560
2003	-183,664	-582,011	-765,675
Layer remaining	9,816,336	0	9,816,336
			Inc (Dec)
Cum. inflator index	1.000000	1.050000	**in LIFO**
LIFO LAYERS AT COST BEFORE UNICAP COSTS:			**Inventory**
2000	10,000,000		10,000,000
2001		1,500,000	1,500,000
2002		-888,888	-888,888
2003	-183,664	-611,112	-794,775
Layer remaining	9,816,336	0	9,816,336
			Inc (Dec)
UNICAP ratio	.050000	.052500	**in UNICAP**
UNICAP COST LAYERS:			**Costs**
2000	500,000		500,000
2001		78,750	78,750
2002		-46,667	-46,667
2003	-9,183	-32,083	-41,267
Layer remaining	490,817	0	490,817
			Inc (Dec)
			in LIFO w/
LIFO LAYERS INCLUDING UNICAP COSTS:			**UCC Costs**
2000	10,500,000		10,500,000
2001		1,578,750	1,578,750
2002		-935,555	-935,555
2003	-192,847	-643,195	-836,042
Layer remaining	10,307,153	0	10,307,153

Sample Company

LIFO Inventory History Schedule Report 17

Pool: 1 All goods

	2000	2001	2002	2003
Current-year cost	10,000,000	12,000,000	11,000,000	10,000,000
Current yr. index	1.000000	1.050000	.990000	.980000
Cumulative index	1.000000	1.050000	1.039500	1.018710
Inventory at base	10,000,000	11,428,571	10,582,011	9,816,336
Change at base	10,000,000	1,428,571	-846,560	-765,675
Cum. inflator index	1.000000	1.050000	1.039500	1.018710
Change at LIFO cost	10,000,000	1,500,000	-888,888	-794,775
LAYERS AT BASE:				
2000	10,000,000	10,000,000	10,000,000	9,816,336
2001		1,428,571	582,011	0
2002			0	0
2003				0
Totals	10,000,000	11,428,571	10,582,011	9,816,336
LIFO LAYERS AT COST BEFORE UNICAP COSTS:				
2000	10,000,000	10,000,000	10,000,000	9,816,336
2001		1,500,000	611,112	0
2002			0	0
2003				0
Totals	10,000,000	11,500,000	10,611,112	9,816,336
UNICAP COST LAYERS:				
2000	500,000	500,000	500,000	490,817
2001		78,750	32,083	0
2002			0	0
2003				0
Totals	500,000	578,750	532,083	490,817
LIFO LAYERS INCLUDING UNICAP COSTS:				
2000	10,500,000	10,500,000	10,500,000	10,307,153
2001		1,578,750	643,195	0
2002			0	0
2003				0
Totals	10,500,000	12,078,750	11,143,195	10,307,153
LIFO RESERVE BEFORE UNICAP	0	500,000	388,888	183,664
LIFO EXPENSE	0	500,000	-111,112	-205,225

Chapter 5: Common LIFO Misconceptions

LIFO benefits will be minimal for companies with fast inventory turnover – Inventory turnover rate is irrelevant; only the amount of FIFO inventory value and inflation impact the amount of LIFO expense.

Low inflation rates will not produce significant LIFO benefits – Consistent positive inflation can produce sizable LIFO benefits for companies with significant inventories. Sizable LIFO benefits are also possible for companies with small inventories that consistently have high inflation.

Book and tax LIFO methods & submethods need to be consistent – This was true until 1981 but the IRS Regs. LIFO "conformity rule" was changed at that time to require only the conformity of the LIFO election scope (goods on LIFO). The Regs. specifically permit different book and tax LIFO methods. See §1 Chapter 6: Use of Different LIFO Methods for Financial Reporting v. Tax Purposes for additional information.

Valuation (lower-of-cost-or-market) reserves provide as much or more benefit than LIFO – If this seems to be true for a company, the reserving method would not likely pass muster with the IRS. Even if a LCM reserve may exceed the first-year LIFO reserve, the LIFO reserve will grow with continued inflation regardless of current-year cost increases and this is not true of LCM reserves. LCM reserves must be taken into income when LIFO is adopted as a Section 481(a) adjustment but this is spread over 3 years.

LIFO reserve increases require increasing current-year cost (CYC) inventory balances – Unless current-year cost (average cost or FIFO) decreases significantly, the amount of inflation is a far more important determinant of LIFO expense than CYC. Significant LIFO reserve increases are possible even with sizable reductions of CYC. The following page shows examples to illustrate this principal. These examples show the following:

Example 1:
Assumption: Current-year cost increases at the same rate as inflation starting at $1,000,000 in the base year.
Results: LIFO reserve will increase slightly more each year from $20,000 in 2002 to $21,224 in 2005.

Example 2:
Assumption: 2005 & 2004 CYC are equal.
Result: 2005 LIFO reserve increases by just under $20K

Example 3:
Assumption: CYC is the same for all years.
Result: 2002 - 2005 LIFO reserve increases by $18K - $20K per year ($76K total).

Example 4:
Assumption: 2004 & 2005 CYC are $50 & $100K less than Example 1.
Results: 2004 & 2005 LIFO reserve increases by $18K & $16K.

Example 5:
Assumption: CYC decreases by $50K/year ($200K total).
Results: 2002 - 2005 LIFO reserve increases by $12K - $19K per year ($61K total)

Examples Showing That the LIFO Reserve Can Increase as the Current-Year Cost Decreases

Example 1 - Assumption: Current-year cost (CYC) increases by 2% per year. **Result:** 2002 - 2005 LIFO reserve increases by $20K - $21K/year ($82K total).

Period	Current Year Cost	Current Year Inflation Index	Cumltv. Deflator Index	Inventory At Base Prices	Increase (Dec) At Base Prices	Cumltv. Inflator Index	Priced Increase (Dec)	LIFO Inventory	LIFO Reserve	LIFO Expense	Layer At Base	Layer At Cost
12/31/2001	1,000,000	1.000000	1.000000	1,000,000	1,000,000	1.000000	1,000,000	1,000,000	0	0	1,000,000	1,000,000
12/31/2002	1,020,000	1.020000	1.020000	1,000,000	0	1.020000	0	1,000,000	20,000	20,000	0	0
12/31/2003	1,040,400	1.020000	1.040400	1,000,000	0	1.040400	0	1,000,000	40,400	20,400	0	0
12/31/2004	1,061,208	1.020000	1.061208	1,000,000	0	1.061208	0	1,000,000	61,208	20,808	0	0
12/31/2005	1,082,432	1.020000	1.082432	1,000,000	0	1.082432	0	1,000,000	82,432	21,224	0	0

Example 2 - Assumption: 2005 & 2004 CYC are equal (2005 CYC = $20K less than Example 1). **Result:** 2005 LIFO reserve increases by just under $20K.

Period	Current Year Cost	Current Year Inflation Index	Cumltv. Deflator Index	Inventory At Base Prices	Increase (Dec) At Base Prices	Cumltv. Inflator Index	Priced Increase (Dec)	LIFO Inventory	LIFO Reserve	LIFO Expense	Layer At Base	Layer At Cost
12/31/2001	1,000,000	1.000000	1.000000	1,000,000	1,000,000	1.000000	1,000,000	1,000,000	0	0	980,392	980,392
12/31/2002	1,020,000	1.020000	1.020000	1,000,000	0	1.020000	0	1,000,000	20,000	20,000	0	0
12/31/2003	1,040,400	1.020000	1.040400	1,000,000	0	1.040400	0	1,000,000	40,400	20,400	0	0
12/31/2004	1,061,208	1.020000	1.061208	1,000,000	0	1.061208	0	1,000,000	61,208	20,808	0	0
12/31/2005	1,061,208	1.020000	1.082432	980,392	-19,608	1.000000	-19,608	980,392	80,816	19,608	0	0

Example 3 - Assumption: CYC is the same for all years. **Result:** 2002 - 2005 LIFO reserve increases by $18K - $20K per year ($76K total).

Period	Current Year Cost	Current Year Inflation Index	Cumltv. Deflator Index	Inventory At Base Prices	Increase (Dec) At Base Prices	Cumltv. Inflator Index	Priced Increase (Dec)	LIFO Inventory	LIFO Reserve	LIFO Expense	Layer At Base	Layer At Cost
12/31/2001	1,000,000	1.000000	1.000000	1,000,000	1,000,000	1.000000	1,000,000	1,000,000	0	0	923,845	923,845
12/31/2002	1,000,000	1.020000	1.020000	980,392	-19,608	1.000000	-19,608	980,392	19,608	19,608	0	0
12/31/2003	1,000,000	1.020000	1.040400	961,169	-19,223	1.000000	-19,223	961,169	38,831	19,223	0	0
12/31/2004	1,000,000	1.020000	1.061208	942,322	-18,846	1.000000	-18,846	942,322	57,678	18,846	0	0
12/31/2005	1,000,000	1.020000	1.082432	923,845	-18,477	1.000000	-18,477	923,845	76,155	18,477	0	0

Example 4 - Assumption: 2004 & 2005 CYC are $50 & $100K less than Example 1. **Result:** 2004 **&** 2005 LIFO reserve increases by $18K & $16K.

Period	Current Year Cost	Current Year Inflation Index	Cumltv. Deflator Index	Inventory At Base Prices	Increase (Dec) At Base Prices	Cumltv. Inflator Index	Priced Increase (Dec)	LIFO Inventory	LIFO Reserve	LIFO Expense	Layer At Base	Layer At Cost
12/31/2001	1,000,000	1.000000	1.000000	1,000,000	1,000,000	1.000000	1,000,000	1,000,000	0	0	692,884	692,884
12/31/2002	1,020,000	1.020000	1.020000	1,000,000	0	1.020000	0	1,000,000	20,000	20,000	0	0
12/31/2003	1,040,400	1.020000	1.040400	1,000,000	0	1.040400	0	1,000,000	40,400	20,400	0	0
12/31/2004	1,011,208	1.020000	1.061208	952,884	-47,116	1.000000	-47,116	952,884	58,324	17,924	0	0
12/31/2005	982,432	1.020000	1.082432	907,615	-45,269	1.000000	-45,269	907,615	74,817	16,493	0	0

Example 5 - Assumption: CYC decreases by $50K/year ($200K total). **Result:** 2002 - 2005 LIFO reserve increases by $12K - $19K per year ($61K total).

Period	Current Year Cost	Current Year Inflation Index	Cumltv. Deflator Index	Inventory At Base Prices	Increase (Dec) At Base Prices	Cumltv. Inflator Index	Priced Increase (Dec)	LIFO Inventory	LIFO Reserve	LIFO Expense	Layer At Base	Layer At Cost
12/31/2001	1,000,000	1.000000	1.000000	1,000,000	1,000,000	1.000000	1,000,000	1,000,000	0	0	739,076	739,076
12/31/2002	950,000	1.020000	1.020000	931,373	-68,627	1.000000	-68,627	931,373	18,627	18,627	0	0
12/31/2003	900,000	1.020000	1.040400	865,052	-66,321	1.000000	-66,321	865,052	34,948	16,321	0	0
12/31/2004	850,000	1.020000	1.061208	800,974	-64,078	1.000000	-64,078	800,974	49,026	14,078	0	0
12/31/2005	800,000	1.020000	1.082432	739,076	-61,898	1.000000	-61,898	739,076	60,924	11,898	0	0

Chapter 6: Use of Different LIFO Methods for Financial Reporting v. Tax Purposes

It is permissible to use financial reporting LIFO (referred to as book LIFO) methods that differ from those used for preparation of the annual tax return (referred to as tax LIFO). Most large companies use different book and tax methods while most of the smaller companies use the same methods for book and tax LIFO. This guide can be used to audit both book and tax LIFO calculations because steps are included that are applicable to both book and tax LIFO methods.

The convoluted nature of LIFO has caused accounting professionals to believe that companies must use uniform Book (Financial Reporting) & Tax LIFO methods. That misconception is incorrect. Both IRS Regs. & GAAP allow for companies to have differing Book & Tax LIFO methods. Aside from International Financial Reporting Standards (IFRS), the only true Book & Tax LIFO conformity requirements are as follows:

1) LIFO must be used for both Book & Tax reporting purposes
2) The scope of LIFO inventories reported for Book purposes must be greater than or equal to the scope of Tax LIFO inventories

The 1981 LIFO Conformity Requirement published within IRS Reg. §1.472-2(e)8 of Treasury Decision #7756 is the authoritative literature reference regarding the acceptability of differing Book and Tax LIFO methods; the IRS' list of acceptable Book & Tax LIFO method differences read as follows:

> *The following are examples of costing methods and accounting methods that are neither inconsistent with the inventory method referred to in §1.472-1 nor at variance with the requirement of §1.472-2(c) and which, under paragraph (e)(1)(vi) of this section, may be used to ascertain income, profit, or loss for credit purposes or for purposes of financial reports regardless of whether such method is also used by the taxpayer for Federal income tax purposes:*
>
> > *(i) Any method relating to the determination of which costs are includible in the computation of the cost of inventory under the full absorption inventory method.*
> > *(ii) Any method of establishing pools for inventory under the dollar-value LIFO inventory method.*
> > *(iii) Any method of determining the LIFO value of a dollar-value inventory pool, such as the double-extension method, the index method, and the link chain method.*
> > *(iv) Any method of determining or selecting a price index to be used with the index or link chain method of valuing inventory pools under the dollar-value LIFO inventory method.*
> > *(v) Any method permitted under §1.472-8 for determining the current-year cost of closing inventory for purposes of using the dollar-value LIFO inventory method.*
> > *(vi) Any method permitted under §1.472-2(d) for determining the cost of goods in excess of goods on hand at the beginning of the year for purposes of using a LIFO method other than the dollar-value LIFO method.*
> > *(vii) Any method relating to the classification of an item as inventory or a capital asset.*
> > *(viii) The use of an accounting period other than the period used for Federal income tax purposes.*
> > *(ix) The use of cost estimates.*
> > *(x) The use of actual cost of cut timber or the cost determined under section 631(a).*
> > *(xi) The use of inventory costs unreduced by any adjustment required by the application of section 108 and section 1017, relating to discharge of indebtedness.*
> > *(xii) The determination of the time when sales or purchases are accrued.*
> > *(xiii) The use of a method to allocate basis in the case of a business combination other than the method used for Federal income tax purposes.*
> > *(xiv) The treatment of transfers of inventory between affiliated corporations in a manner different from that required by §1.1502-13.*

Shown below is a simplified listing of acceptable Book-Tax LIFO method differences:

- LIFO index computation method: dollar value vs. specific goods
- LIFO election scope: LIFO inventories reported for book purposes must be greater than or equal to the LIFO inventories reported for tax purposes
- Item definition method: Individual items, fungible commodities, etc.
- Inflation comparison period: Link-chain vs. Double-extension
- Current-year cost & layer valuation method: Latest acquisitions/FIFO, earliest acquisitions, moving average or any other method that clear reflects income
- LIFO pooling method: Line/type/class of goods, Natural business units, raw materials contents, IPIC pooling method
- Inflation measurement source: Internally calculated index vs. IPIC – CPI/PPI
- IPIC Submethods-
    - Index timeframe selection: Final vs. Preliminary indexes
    - Discontinued categories treatment: Compound inflation vs. substitute index methods
    - Pool index calculation method: 10% method vs. most-detailed category method
    - Appropriate month selection: Annual selection vs. Representative appropriate month

Chapter 7: Additional LIFO Resources

IPIC LIFO Guide - The advantages and disadvantages of this method are discussed. The cryptic IRS IPIC method regulations including those for the 10% method are explained with examples of calculations. This guide describes ways in which companies have dealt with the challenges of sorting inventory balances by the required PPI or CPI category breakdowns and other planning ideas that we have seen in practice over the years. In addition to a generic guide, we also have written guides specifically for these retailers which address the unique challenges companies in these industries face with the IPIC method:

- Supermarket chains
- Department and discount store chains
- Convenience store chains

CPA Firm LIFO Opportunities & Training Guide - This was written for CPAs in public accounting to describe ways they can help their clients best address their LIFO needs including whether their clients would benefit from a different LIFO method and whether they have clients not using LIFO that could reduce their taxes by adopting LIFO.

Other LIFO Resources

LIFO Inventory: Tax and Accounting Issues is a good general LIFO training guide authored by a practicing CPA named John Purtill. The coverage of the IPIC method is brief but it covers non-IPIC LIFO issues in greater detail. Information on this booklet is available at www.purtill.com. This publication is used for an 8 hour CPA CPE course.

Federal Income Taxation of Inventories is a 3 volume, loose leaf treatise published by LexisNexis and authored by Leslie Schneider, a partner in the Ivins, Phillips & Barker law firm. This definitive work analyzes every aspect of inventory taxation, including valuation of goods, UNICAP rules and LIFO inventories. This is a valuable tax inventory accounting reference resource that can be found in the tax libraries of most companies with significant inventories.

Inventory Tax Accounting and Uniform Capitalization is part of the Tax Practice Series published by Thomson Reuters and authored by W. Eugene Seago who is an accounting professor at Virginia Tech University. It provides analysis of various aspects of tax accounting related to inventories.

LIFO for Retailers, a Business, Financial and Tax Guide authored by Ernst & Whinney partners Paul W. Wilson and Kenneth E. Christensen and published by John Wiley & Sons, Inc. The last edition of this book was published in 1985.

Section 2: The LIFO Audit Guide

Chapter 1: LIFO Errors Defined

What are LIFO Errors?

The likelihood of making errors in spreadsheet-assisted manual LIFO calculations is substantial and it is usually just a matter of time before errors are made. The reason for this is that there are numerous potential errors that can be made and since the calculations are not made on a monthly basis, it is more difficult for persons with LIFO calculation responsibilities to develop expertise. The best way to prevent manual LIFO calculation errors is for the LIFO calculation schedules to be designed and created by a person with substantial LIFO methods and calculation experience. There are very few CPAs who spend more than a few hours of time each year updating their LIFO training or making LIFO calculations and even if a company or the company's CPA employs a person with substantial LIFO experience, that person will not always be employed by the company.

LIFO errors include:

1. The use of impermissible LIFO methods
2. Improper application of a LIFO method including LIFO math errors
3. Not using LIFO methods elected

What are listed as errors above may be considered by the IRS to be impermissible LIFO methods instead of errors. It is evident from historical IRS guidance that the IRS considers the application of a method of tax accounting to be a method of accounting. For example, while it is apparent that current-year cost multiplied times (rather than divided by) the cumulative deflator index to calculate the inventory at base balance is an error, the IRS would likely consider this to be an impermissible LIFO method.

It is common for companies to gain false assurance and be of the opinion that their company uses permissible LIFO methods and that their LIFO calculations are accurate when:

1. No LIFO method compliance or LIFO calculation accuracy problems are found by the auditors of their financial statements or tax preparers for a number of years or
2. No LIFO related IRS audit adjustments are made as a result of IRS audit examinations for a number of years

There are people at the Big 4 CPA firms that have substantial LIFO methods and calculation experience but this experience is concentrated among a relatively small number of people and offices. If the design of the LIFO calculation process is made by these firms' LIFO experts as well as annual review by these experts, the likelihood of errors is much less.

Because LIFO expertise is in short supply within companies, CPA firms and the IRS, it is very common for impermissible book or tax LIFO methods and application of the methods to be used for many years without detection. For tax purposes, the fact that there were no prior years' LIFO related IRS audit adjustments proposed by an examining agent does not mean the LIFO methods that are used are permissible and are immune to subsequent years' adjustment. IRS Reg. § 1.472-3(d) clearly states that the IRS retains ongoing authority to approve a taxpayer's LIFO methods. This allows the IRS to propose adjustments in cases when the impermissible method has been used for many years.

Chapter 2: The Sources of LIFO Rules

The IRS Reg. § 1.472 and various IRS Revenue Procedures (Rev. Proc.), letter rulings and other guidance provide the rules to be used for tax LIFO calculations. A separate comprehensive source of rules addressing book LIFO methods does not exist. The primary book LIFO rules guidance comes in the form of two different AICPA Accounting Standards Division Issues Papers. The first of these is entitled *The Acceptability of Simplified LIFO for Financial Reporting Purposes* and is dated October 14, 1982. The second of these is entitled *Identification and Discussion of Certain Financial Accounting and Reporting Issues Concerning LIFO Inventories* and is dated November 30, 1984.

The 1982 Issue Paper is limited in scope addressing only whether the IPIC method (referred to also as the "simplified LIFO" method) can be used for book LIFO. The conclusion was that the IPIC method can be used for book LIFO unless the IPIC method LIFO inflation does "not reflect a company's experience" as long as 100% of the CPI or PPI inflation was used rather than the 80% limitation the IRS Regs. prescribed until the 2002 revision.

The IRS Regs. addressing LIFO have evolved over the years. The LIFO Regs. permitted only the specific goods LIFO method until 1947 when the dollar-value method that is almost universally used now was first permitted. The IRS Regs. for the IPIC LIFO method were written in 1982 and significant changes were made in 2002 to the IPIC LIFO Regs.

There was no need for book LIFO rules different from the IRS Regs. LIFO rules until 1981 when the IRS LIFO conformity rules contained in Reg. § 1.472–2(e) were amended to specifically permit the use of book LIFO methods that are different from IRS Regs. methods. Before this time, only the tax LIFO methods permitted by the IRS Regs. could be used for book LIFO. This is why the two AICPA LIFO Issues Papers were not written until after 1981.

While there is book LIFO guidance contained in the two AICPA Issues Papers, these are not a comprehensive set of book LIFO method rules which means that the IRS Regs. are considered to be also the book LIFO rules for issues not addressed in the two AICPA LIFO Issues Papers. For example, there are no book LIFO rules for the IPIC method in the AICPA Issues Papers other than the 1982 Issues Paper specifying that the IPIC method could be used for book LIFO and because of this, the IRS Regs. rules for tax LIFO are also considered to be the IPIC method book LIFO rules.

Chapter 3: Rules Requiring "Audit" of LIFO Methods & LIFO Calculations

Book LIFO methods and internal controls for the annual book LIFO calculations must be evaluated annually to ensure the accurate calculation of the book LIFO reserve that is disclosed in the financial statements. Tax LIFO methods and internal controls for the annual tax LIFO calculations must be evaluated annually to ensure compliance with ASC 740-10. (formerly FIN 48). ASC 740-10 requires annual evaluation of tax positions taken to determine whether income tax deferrals can be recognized in the financial statements and whether disclosure of tax positions taken require financial statement disclosure. Tax positions taken include use of tax LIFO methods and application of methods that are not permissible by the IRS.

For tax purposes, corrections of errors entail either filing amended tax returns or filing a Form 3115, *Application for Change in Accounting Method* and could possibly require a § 481(a) adjustment (cumulative effect of correction of the error is made). For financial reporting, material errors may require a retrospective accounting adjustment. The scope of this guide does not include discussion of steps required to properly account for corrections of LIFO errors that are required. A LIFO-PRO team member or LIFO inventory accounting expert should be consulted to properly account for correction of LIFO errors.

Chapter 4: LIFO Audit Guide

Purpose of the LIFO Audit Guide

The purpose of the LIFO Audit Guide section of this publication is to describe:

1) The types of errors that can occur in the calculation of the LIFO reserve
2) How to detect and prevent these errors. The reasons such a guide is necessary are:
    a. LIFO errors are very common because few companies or CPAs have sufficient LIFO experience to ensure accurate calculations every year for many years
    b. Most companies make LIFO calculations manually using spreadsheets and any time a spreadsheet is used to calculate a reserve that has a substantial impact on financial statements and the tax return, audit steps are required to ensure calculation accuracy
    c. No comprehensive guide for this purpose presently exists

Steps Required to Avoid LIFO Errors

LIFO calculation errors are much less likely to occur when a company's LIFO calculation process includes the elements described below:

1. LIFO knowledge
2. Redundancy in calculations
3. Carryforward format schedules
4. Comprehensive documentation
5. Avoid use of an error prone calculation process

LIFO Knowledge

By far, the best way to prevent and detect LIFO calculation errors is to have persons within or outside the company with substantial LIFO experience design the steps for the calculations and perform or review the calculations. If a company has sufficient in-house LIFO experience, it is necessary also for the existence of a plan for LIFO training to ensure sufficient LIFO experience when and if others with LIFO experience move to other positions or leave the company. LIFO knowledge is more difficult to develop than other areas of accounting because LIFO calculations are usually not made monthly and this slows the pace of LIFO on-the-job-training. If a company using LIFO does not have substantial LIFO experience in-house, they should rely on their CPA firm to reduce the likelihood of LIFO calculation errors. If their CPA firm does not have substantial LIFO experience, they should rely on outside LIFO calculation experts.

Redundancy in Calculations

There are various steps to take to prove the accuracy of the calculation of the LIFO reserve and properly designed LIFO calculation reports will include redundant calculations which prove the accuracy of values calculated in other reports. The standard reports generated by the LIFO-PRO software include redundant calculations. These are the redundancies included in the following LIFO-PRO reports:

- **LIFO Inventory History Summary Report (LIFO-PRO Report 16) –** The rightmost two columns of this report labeled Layer at Base and Layer at (LIFO) Cost are the layers that remain after the most recent year end for which the schedule is prepared. The redundancy built into Report 16 is the fact that the balance in the LIFO Inventory column for the most recent year end will tie to the balance in rightmost Layer at Cost column for that year. There is also redundancy between this report and Report 17 since both are carryforward format LIFO layer history schedules. The fields in this report are described in greater detail in the example reports section of the Appendix.
- **LIFO Reserve Calculation Report (LIFO-PRO Report 18a)** – The top 20 or so rows of this report show the step-by-step calculation of the current year LIFO reserve using the known values of the current-year cost and current year index and several values from the LIFO layer history schedule. The change in the LIFO reserve for the year (also known as LIFO expense or income) is shown on row 20. The bottom six rows of this report show the proof of the row 20 LIFO reserve change and the math used for this proof is shows on these rows. There is also redundancy between this report and Reports 16 and 17 for the calculation of the LIFO reserve balance. The fields in this report are described in greater detail in the example reports section of the Appendix.
- **LIFO Layer History Report (LIFO-PRO Report 16a)** – This schedule shows the details of all decrement calculations for all years for a given pool (separate pages for each pool) regardless of the number of prior year layers eroded for a decrement. This decrement at LIFO cost is a proof of the decrement at LIFO cost shown on the other LIFO-PRO reports. The fields in this report are described in greater detail in the example reports section of the Appendix.
- **LIFO Inventory History Detail Report (LIFO-PRO Report 17)** – This report is a proof of the accuracy of the calculations shown on Reports 16 and 18a. This report shows all values shown on Report 16 but also shows the amounts of the layers at base and LIFO cost for all years. The fields in this report are described in greater detail in the sample reports section of the Appendix.

Carryforward Schedule Format

Properly designed schedules documenting LIFO calculations will include a LIFO layer history schedule in a carryforward format which shows current-year cost, indexes, inventory at base, change at base and LIFO cost, LIFO inventory and LIFO reserve balances for all years that LIFO has been used. Showing these values for all years makes it much less time consuming to perform recalculations or analytical review. A carryforward schedule format like this precludes the need and wasted time required to keep an archive of other schedules showing these fields for all preceding years. For example, if the LIFO layer history schedule used does not show the LIFO reserve balance history by year, a separate schedule must be prepared to view these balances. The LIFO-PRO Reports 16, 17 and 16a are all carryforward format LIFO schedules. The first two are LIFO layer history schedules and Report 16a shows the details of all years' decrement calculations. Report 17 shows the LIFO layers that remain as of all years which the Report 16 shows the layers that remain as of the most recent year end. More data is included in Report 17 but printing this report become difficult for companies on LIFO for many years since both columns and rows are added for each year and only rows are added each year for Report 16.

Comprehensive Documentation

Not only should the steps used for pool index calculations, the calculation of the LIFO reserve and updating of the LIFO layer histories be documented, the current-year cost and pool index calculation data sources should be documented. This document should be a carryforward, permanent file document which includes a description of the methods used for all years that LIFO has been used for both book and tax. A record of all IRS Form 970, *Application to Use LIFO Inventory Method* and Form 3115, *Application for Change in Accounting Method* that have been filed should be documented (with copies of these forms) as well as documentation of the results of any IRS audits for which LIFO was reviewed. This document should include a history of the LIFO election scope used for all years. Chapter 4 of this guide shows suggested content of this document. Appendix 3 of this Guide entitled "Sample LIFO Methods and Procedures Policy History Carryforward Document" includes an example of this type of comprehensive document.

Avoid Error-Prone Calculation Procedures

Spreadsheet assisted manual calculations are prone to error and should be avoided if possible. If manual calculations are made, far greater efforts are required to make sure the proper controls are in place to prevent and detect LIFO errors.

Chapter 5: LIFO Policies & Procedures Template

Every company should maintain a permanent file document that addresses all aspects of the LIFO election and methods and steps used. This document should include each of these separate sections addressing each of these topics:

1. **LIFO methods & submethods –** All LIFO methods and submethods for both book and tax should be addressed. These aspects of the LIFO method alternatives should all be addressed:
    a. LIFO election scope
    b. LIFO item definition method
    c. Inflation comparison period (link-chain or double-extension)
    d. Current-year cost and layer valuation method
    e. LIFO pooling method
    f. Inflation measurement source (internal or external indexes)

    A more-detailed version of this outline can be found within the LIFO Methods & Submethods chapter located in Section 1 of this guide. The LIFO methods for companies with multiple entities whom require separate LIFO calculations & also have differing LIFO methods should also be addressed. The LIFO methods used and the description of the changes in methods should be described for all years (in the same carryforward document) that LIFO has been used. The details of the changes in methods (IRS guidance permitting the change, the type of change, whether adjustments were required) should be included.

2. **Company events –** Description of events that have an effect on book or tax LIFO calculations and what LIFO effect these events have. Company events include: change in year end, company purchases, mergers and conversion to S corporation.
3. **List of LIFO & inventory related method changes –** The details of these changes should be listed here if they are not included in the LIFO methods section. Form 970s are required to for each separate entity (unless they are disregarded entities) but a single Form 3115 can be filed for any of the multiple companies in a consolidated group within the same Form 3115. Changes listed should also include §471 non-LIFO inventory changes as some of these changes require a §481a adjustment related to the LIFO reserve or may affect subsequent LIFO calculation policies & procedures.
4. **IRS examination & IRS controversy results –** A description of the years in which LIFO has been examined by the IRS and the results of the exam. Reference should be made to IDR requests and RAR documentation. A summary of any IRS controversy issues and results should be made for all years the LIFO method has been used.
5. **LIFO financial statement disclosure –** All changes in the wording of the LIFO-related disclosures in the financial statements and notes should be described along with the changes in facts and methods requiring the change. If disclosure wording changes are made that do not relate to changes in facts or methods, the rationale for the changes should be described.
6. **LIFO calculation & review procedures –** A description of the steps used annually (or quarterly) to make both the book & tax LIFO calculations. The information should include: location of data sources, the names of the personnel performing the various steps and who reviews the steps (include review by persons outside the company and to what extent outside LIFO expertise is used), the timing of the step and the location of the files documenting the steps.

The description of the LIFO calculation steps should describe the different processes for the different departments, divisions and companies and for stores as well as warehouses. The steps required for the calculation of the LIFO current-year cost adjustments for vendor monies (cash, trade & other discounts and allowances) and shrink accrual should be included. For manufacturing companies, the steps applicable to for all different stages of production (raw materials, WIP and finished goods) and all components of cost (material, labor and overhead) should be documented.

Sample LIFO Policies & Procedures Template

ABC Company LIFO Policies & Procedures

LIFO Methods

LIFO Election Scope

- ABC Company elected the LIFO inventory method in 1974. This was the first time the LIFO method was used by the company. The LIFO methods elected at this time were used also for financial reporting.
- The 1974 initial election scope was all inventories except produce. A Form 970, *Application to use LIFO Inventory Method* was filed in 2006 to expand the LIFO election to include produce so that all inventories except gasoline are now on LIFO.
- When pharmacies were first added as a department in 1995, a Form 970 was filed to add all pharmacy inventories to the LIFO election scope.
- Gasoline has never been part of the LIFO election scope and when gasoline was first added as a department in 2013, no Form 970 was filed to expand the LIFO election scope for gasoline. All gas station inventories except gasoline (food & beverage, HBA, etc.) are included in the LIFO election scope.
- For the 2006 LIFO calculations, the LIFO layer history for the pool containing produce was adjusted to add the produce inventory balances to the prior year end layer history.
- In-transit inventories are included in the current-year cost used for LIFO. Pallets and supplies inventories are excluded from the LIFO current-year cost because these are included with other assets in the balance sheet accounts.

Item Definition Method
Items have always been defined for LIFO purposes as each inventory SKU.

Inflation Comparison Period
The link-chain method was elected in 1974 with the initial LIFO election and has been used continuously since then.

Current-Year Cost and Layer Valuation Method
The current-year cost method used at the 1974 LIFO election was the FIFO cost method for perishable inventories and the retail inventory method (RIM) for non-perishable inventories. A change was made in 2003 to the item cost method for all inventories using the FIFO cost flow assumption. A Form 3115 was filed for this change for tax purposes. A dual index method has never been used for either book or tax LIFO.

LIFO Pooling Method
- The LIFO pools used for both book and tax when LIFO was elected in 1974 was a method permitted by Reg. § 1.472–8(c)(1) for retailers for which separate pools are established by line, type or class of goods. Separate pools were established for each of these merchandise departments: Grocery, Tobacco, Hardware, Health & beauty, Housewares, Alcoholic beverages & Meat. A pharmacy pool was added for both book and tax LIFO in 1995 when the LIFO election scope was expanded to include this department.
- When the change to use the IPIC method was made in 1996, the IPIC pooling method permitted by Reg. § 1.472–8(c)(2) was elected for tax and the base-year was updated to 1995 as required for this change. A repooling was made to split the old pools into the portions applicable to each new pool and these were then combined into these new PPI pools: 1) Processed foods (02), 2) Chemical products (06), 3) Paper products (09), 4) Miscellaneous products (15) and 5) All other (<5%). A Form 3115 was filed with the 1996 tax return for this change. No change in the book LIFO pooling method in 1996.

Inflation Measure Source
- Internal indexes were used for both book and tax LIFO when LIFO was elected in 1974. All items in all warehouses are double-extended (this term is used in the generic sense; the link-chain method has always been used). The store internal indexes are double-extended on using a representative sample of stores and store inventory items.
- A change to the IPIC method was made in 1996 for tax LIFO only. The BLS table used is the commodities Table 9 (Table 6 until 2014 when the BLS renumbered the tables) from the PPI Detailed Report. The preliminary PPI indexes are used. A representative appropriate month of November was selected. The 10% method was used (the use of the 10% method was mandatory in the old, pre-2002 IPIC Regs.). No change in book LIFO methods was made when the tax LIFO method changed in 1996. A Form 3115 was filed with the 1996 tax return for this change.
- The IRS published new IPIC LIFO Regs. in 2002 requiring several mandatory changes in the math of the tax LIFO pool index calculations. The changes required were: 1) use 100% rather than 80% of PPI inflation, 2) use harmonic mean math rather than arithmetic mean math and 3) change the denominator for the 10% method from the current-year cost of all inventories to that for each pool. With this change, the use of the 10% method is no longer mandatory but we continue to use this method. A Form 3115 was filed with the 2002 tax return for this change.

Company Events
- **Change in year end –** The month of the year end changed in 1998 from November to December. This change resulted in short year (month ended December) short book and tax LIFO calculations. The representative appropriate month used for tax LIFO remained unchanged from November.
- **Conversion to Subchapter S Corp –** This change was made after the 2001 year end. This change required the recapture of the tax LIFO reserve that existed at the 2001 year end over a four year period starting in 2001. No tax LIFO methods were changed and tax LIFO calculations were made as if LIFO were elected for

tax in 2001 with a 2000 base year with a zero tax LIFO reserve. This change was a non-event for book LIFO with no change in the book LIFO reserve.

- **Purchased company with LIFO inventories –** The XYZ Company was purchased during 2011 in a stock purchase and the company was then merged into ABC Company. The LIFO layer histories as of the 2010 year end for both companies were combined with the LIFO methods of ABC Company being used going forward.
- **Purchased company with LIFO inventories –** The DEF Company was purchased during 2012 in a stock purchase. DEF Company remained a separate corporation in 2012 and the company was then merged into ABC Company in 2013. The DEF Company tax LIFO methods were used for the 2012 tax return. The book LIFO layer histories of the two companies were combined as of the 2011 year end with the ABC Companies book LIFO methods being used in 2012. The DEF Company was merged with ABC Company in 2013, so the tax LIFO layer histories as of the 2012 year end for both companies were combined with the LIFO methods of ABC Company being used going forward.

LIFO & Inventory Related Method Changes & Form Filings

Method Changes

1) **Change in 2003 from retail inventory method (RIM) to the item cost method -** using the FIFO cost flow assumption for non-perishable inventories resulting in this method being used for all inventories now. This was an advance approval method change. A Form 3115 was filed for this change. This is not a cut-off method change, so a § 481(a) adjustment was calculated with the adjustment being spread over the four years beginning in 2003. The § 481(a) adjustment was determined by calculating a post-restatement tax LIFO layer history and comparing the 2002 post-restatement (new method) LIFO inventory balance to the pre-restatement (old method) LIFO inventory balance and the difference between the two balances as of the 2002 year end was the § 481(a) adjustment.
2) **Change in 2006 in the method of accounting for "qualifying volume-related trade discount" to the method permitted by Reg. § 1.471-3(b)** - these discounts are now recognized as a reduction in the cost of merchandise purchased. This is automatic approval change #53. A Form 3115 was filed with the 2006 Form 1120. This is not a cut-off method change, so a § 481(a) adjustment was calculated with the adjustment (calculated in similar fashion as that for the 2003 change from the RIM method) being spread over the four years beginning in 2006.
3) **Change in 2010 to the "retail safe harbor method" of inventory shrink accrual method permitted by § 4 of Rev. Proc. 98-29 to the safe harbor method -** This is automatic approval change #49. A Form 3115 was filed with the 2003 Form 1120. This is not a cut-off method change, so a § 481(a) adjustment was calculated with the adjustment (calculated in similar fashion as that for the 2003 change from the RIM method) being spread over the four years beginning in 2010.

IRS Form Filing History

Form 970s:
1974 – For initial LIFO election.
1995 – To expand the LIFO election scope to include the pharmacy department inventories.
1996 – For the change to the IPIC method as required by the Form 3115 filed for this change.
2002 – For the change to the new IPIC method Regs. as required by the Form 3115 filed for this change.
2006 – To expand the LIFO election scope to include produce.

Form 3115s:
1996 – For the change to the IPIC method & to the IPIC pooling method.
2002 - For the change to the new IPIC method Regs.
2003 – For the change from the RIM to the item cost method.
2006 – For the change in accounting method for volume-related trade discounts.
2010 – For the change to the retail safe harbor inventory shrink accrual method.

IRS Audits

There was an IRS examination in 1978 for which there was an adjustment agreed to that was related to LIFO inventories that resulted in the LIFO reserve being decreased by $1,321,930. The adjustment was in the method used to calculate RIM method cost complements. The adjustment was spread over 4 years starting in 1978 in the form of a § 481(a) adjustment.

Financial Statement Disclosure Format & Changes

Current Format

- **Part 1, Item 1: Business – Operating Groups**
  - **Net sales & operating income (loss) by operating group:**
    - **Footnote 1:** "Corporate and Other is a reconciling category for reporting purposes and includes our corporate offices, substantially all financing activities, LIFO inventory accounting adjustments and other costs that are not allocated to our operating groups."
    - **Footnote 2:** Include LIFO layer liquidations causing material gains (if applicable)
  - **Assets**
    - **Disclosure: "**Total assets for Corporate and Other include a LIFO reserve of $XX and $XX as of Current & Prior period end dates, respectively"
  - **Operating Group Overview**
    - **Corporate & Other:** "Corporate and Other is a reconciling category for reporting purposes and includes our corporate offices, substantially all financing activities, LIFO inventory accounting adjustments and other costs that are not allocated to our operating groups."
- **Part 2, Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations**
  - **Operating Group Results**
    - **Disclosure 1:** Include LIFO layer liquidations causing material gains (if applicable)
    - **Disclosure 2:** Include LIFO-related losses or gains impacting Corporate and Other Group
    - **Disclosure 3:** "LIFO inventory calculations are made on a legal entity basis which does not correspond to our operating group definitions, as portions of Lanier Clothes and Oxford Apparel are on the LIFO basis of accounting. Therefore, LIFO inventory accounting adjustments are not allocated to operating groups."
  - **Critical Accounting Policies**
    - **Disclosure 1: "**For consolidated financial reporting, approximately $XX of our inventories are valued at the lower of LIFO cost or market after deducting the $XX LIFO reserve as of Current period end date. Approximately $XX of our inventories are valued at the lower of FIFO cost or market as of Period end date. LIFO inventory calculations are made on a legal entity basis which does not correspond to our operating group definitions, and therefore are reported within the Corporate & Other operating group.
    - **Disclosure 2: "**A change in the markdowns of our inventory valued at the lower of LIFO cost or market method would not be expected to have a material impact on our consolidated financial statements due to the existence of our LIFO reserve of $XX as of Current period end date. A change in inventory levels at the end of future fiscal years compared to inventory balances as of Current period end date could result in a material impact on our consolidated financial statements as such a change may erode portions of our earliest base year layer for purposes of making our annual LIFO computation."
- **Part 2, Item 8. Financial Statements and Supplementary Data**
  - **Inventories, net: "**For consolidated financial reporting, as of Current & Prior period end dates, approximately $XX and $XX of our inventories are valued at the lower of LIFO cost or market after deducting our LIFO reserve. Approximately $XX and $XX million of our inventories are valued at the lower of FIFO cost or market as of Current & Prior period end dates. As of Current & Prior period end dates, approximately XX% & XX% of our inventories are accounted for using the LIFO method
  - **Note 2. Inventories**

- **Inventory balance components table:** current & prior period LIFO reserve balances
- **Disclosure:** Include LIFO layer liquidations causing material gains (if applicable)

Past Changes

Net sales & revenue was reported net of LIFO by operating group through 2009, but starting in Q1 of 2010, it is now reported for in the Corporate & Other operating group.

LIFO Calculation & Review Procedures

Current-year cost calculation process

1) Person A prepares a schedule showing the y/e g/l balances for the various subaccounts included in the LIFO election scope. In-transit inventories are included in the current-year cost used for LIFO and pallets and supplies inventories are excluded because pallets & supplies are not classified as inventories on the balance sheet.
2) Person A prepares a schedule adjusting the g/l balances for both the shrink accrual and vendor monies (cash, trade & other discounts and allowances).

Book LIFO Calculation Procedures Overview

Front-end (LIFO index)

1) The store sampling plan from the prior year is review six months before year end. The plan is updated to take into different circumstances & changes in inventory accounting systems including new companies, new stores and new warehouses. A preliminary selection of sample stores is chosen. This and the updated sampling plan are provided to the outside consulting company for review. Once the sampling plan has been approved, a timetable is prepared describing the steps required to gather the necessary price comparison data. Once the sample data has been collected, the year end item cost per item for c/y v. p/y is compared for the items chosen in the sample. This is done by preparing a double-extension schedule for which the y/e quantity on hand is multiplied by both the c/y and p/y item cost. Price change outliers are defined as >30% annual item inflation or deflation. All outliers > $1,000 are reviewed to determine whether there is an error in the data or whether a per each cost is compared to a per case cost. Store new item treatment is p/y cost = the item cost for the first purchase (during the year) cost.
2) For warehouse inventories, double-extension calculations are made for all warehouses and all items. The same review scope for outliers is used for warehouses as is used for store samples. Warehouse new item treatment is p/y cost = c/y cost.
3) Person A calculates the book LIFO weighted average pool indexes for each LIFO pool using the double-extension schedule indexes weighted by the appropriate inventory balance weighting factors.

Back-end (LIFO inventory)

1) Person B uses the p/y Excel schedules as the template for the schedules to be prepared for this year end. The pool index and current-year cost values calculated in those LIFO calculation steps are the input values used for these calculations.
2) The LIFO layer erosion effect LIFO income or expense is calculated because the company aggregate of the layer erosion effect is required footnote disclosure. The average inflation indexes, LIFO income or expense, layer erosion effect & inflation effect (total LIFO expense or income less layer erosion effect) is reviewed and compared to prior year end and quarterly amounts and to tax LIFO results for reasonableness.

Tax LIFO Calculation Procedures Overview

Front-end (LIFO index)

1) Make assignment of Bureau of Labor Statistics (BLS) Producer Price Indexes (PPI) categories to all items on LIFO. Update the complete list of PPI Table 9 codes for new codes, recoded codes and discontinued codes. For the discontinued codes, determine the proper replacement codes for each discontinued code which may be applicable to the company's inventory. The changes in PPI codes are described in the tables

at the back of the PPI Detailed Report in the December and June reports. Contact the BLS if necessary to answer questions about what inventory items are applicable to PPI codes. Make assignment of valid PPI codes to all inventory items or inventory classes.

2) For all PPI codes that are assigned in the PPI code assignment process, look up the November preliminary indexes and enter these in an Excel schedule listing all PPI codes. Look up the prior year end BLS weights for the same items in the table that contains these weights.
3) Using the prior year end pool index calculation Excel schedule as a model, update the schedule with the current-year cost balances and the current year indexes and BLS weights. Move the c/y index values from the prior year end schedule to the p/y column in the current year schedule. Review the 10% method rollups to determine whether the 10% groups should be changed. Make the 10% group category index calculations using the appropriate code's BLS weights using arithmetic mean math. Make the pool index calculations using the various category indexes calculated weighted with the current-year cost balances using harmonic mean math. Divide the sum of the current-year cost balances by the sum of the harmonic mean extensions.

Back-end (LIFO inventory)

1) Person E uses the p/y Excel schedules as the template for the schedules to be prepared for this year end. The pool index and current-year cost values calculated in those LIFO calculation steps are the input values used for these calculations. For each pool, multiply the current year index times the prior year cumulative index to calculate the current year cumulative index. Divide the current-year cost by the current year cumulative index to calculate the current year inventory at base. Subtract the prior year inventory at base balance from the current year inventory at base to calculate the current year increment or decrement. If there is an increment for the current year, multiply the current year cumulative index times the increment at base to calculate the increment or layer at LIFO cost. If there is a decrement at base, calculate the LIFO value of the decrement by reference to the prior year end LIFO layer history schedule. The current year increment or decrement at LIFO value added to the prior year end LIFO value is the current year end LIFO value. The current-year cost balance minus the current year end LIFO balance equals the current year LIFO reserve. The current year minus the prior year LIFO reserve is the current year LIFO expense or income.
2) The LIFO layer erosion effect LIFO income or expense is calculated because the company aggregate of the layer erosion effect is required footnote disclosure. The average inflation indexes, LIFO income or expense, layer erosion effect & inflation effect (total LIFO expense or income less layer erosion effect) is reviewed and compared to prior year end and quarterly amounts and to tax LIFO results for reasonableness.
3) Using the § 263A ratio calculated for the current year and the ratios for the prior years, multiply these ratios times the LIFO layers at cost remaining at the current year end and sum these extensions to calculate the total § 263A costs for each pool.
4) Prepare a schedule showing the LIFO inventory, LIFO reserve and other balances for each pool to calculate the total LIFO reserve for each company.
5) Prepare a schedule supporting the tax return Schedule M-1 showing including the inventory related book v. tax differences. The difference in the current year end book LIFO expense or income v. tax LIFO expense or income will be the LIFO book v. tax difference. The change in the year end § 263A costs total as compared to the prior year end balance is the § 263A book v. tax difference.

Chapter 6: Potential LIFO Errors & Preventative Controls

Error Type	Error Description	Error Example	Audit/Error Detection Step	Preventative Control	LP Rpt. Ref.	IRS GAAP Ref.	Comments
Current-Year Cost (CYC) & LIFO Election Scope	CYC improperly includes (is net of) valuation reserves	CYC is net of reserve for obsolescence but should not be or item cost recorded is estimated market value rather than cost	Agree LIFO calc. schedule CYC to sum of inv. g/l balances that are gross of valuation reserves	Review step	n/a	§ 1.472–2(b)	
Current-Year Cost (CYC) & LIFO Election Scope	CYC dollars not consistent with LIFO election scope	All inventories are on LIFO per Form 970 election & financial statement disclosure but in-transit inventories are excluded	Review Form 970 LIFO election scope & agree CYC to sum of inv. g/l balances that are supposed to be on LIFO. Compare election scope to financial statements note for book LIFO.	Review step	n/a	§ 1.472–2(a)	
Current-Year Cost (CYC) & LIFO Election Scope	CYC method not consistent with LIFO method elected	FIFO is the CYC method shown on the Form 970 & or the financial statement notes but the specific identification cost method is used	Review Form 970 for tax & financial statements note for book	Review step	n/a	§ 1.472–8(e)(2)(ii)	
LIFO Reserve or LIFO Layer History Schedule Calculations	Link-chain C/Y cum. index <> P/Y cum. index x C/Y inflation index	C/Y inflation index is multiplied times cum. Index from 2 years ago	Recalculate C/Y cum. index	Prepare & review schedule using LIFO-PRO Rpt 18a format	18a row 10	§ 1.472–8(a)	
LIFO Reserve or LIFO Layer History Schedule Calculations	C/Y inventory at base <> CYC/cumulative Index	Inventory at base = CYC divided by C/Y index	Recalculate C/Y inventory at base	Prepare & review schedule using LIFO-PRO Rpt 18a format	18a row 11	§ 1.472–8(a)	
LIFO Reserve or LIFO Layer History Schedule Calculations	C/Y increment or decrement at base <> C/Y inv. at base minus P/Y inv. at base		Recalculate C/Y increment or decrement	Prepare & review schedule using LIFO-PRO Rpt 18a format	18a row 13	§ 1.472–8(a)	
LIFO Reserve or LIFO Layer History Schedule Calculations	C/Y increment calculation error; increment at LIFO cost <> increment at base x C/Y cum. Index		Recalculate C/Y increment calculation error	Prepare & review schedule using LIFO-PRO Rpt 18a format	18a row 15	§ 1.472–8(a)	
LIFO Reserve or LIFO Layer History Schedule Calculations	Layer history balances do not tie to reserve calculation schedule	P/Y inv. at base does not tie to that balance per layer history	Compare the balances between the 2 schedules	Prepare & review schedule using LIFO-PRO Rpt 18a format	18a	§ 1.472–8(a)	

Error Type	Error Description	Error Example	Audit/Error Detection Step	Preventative Control	LP Rpt. Ref.	IRS GAAP Ref.	Comments
Decrement Calculation	Decrement incorrectly priced using the current year cumulative index	Decrements must be priced using the indexes used to price the layers in the year the layers were created	Recalculate decrement	Prepare & review schedule that is in the format of LIFO-PRO Report 16a	16a & 18a	§ 1.472–8(a)	
Decrement Calculation	Incorrect multiple layer decrement calculation	Multiple layer decrements should be calculated using Report 16a steps	Recalculate decrement	Prepare & review schedule that is in the format of LIFO-PRO Report 16a	16a & 18a	§ 1.472–8(a)	
Decrement Calculation	Use of different index precision for decrements than was used for increments	Unlimited precision is used for an increment but four decimal places are used to price the decrement	Recalculate decrement	Prepare & review schedule that is in the format of LIFO-PRO Report 16a	16a & 18a	§ 1.472–8(a)	The dollar amount of this type of error will not be large but it will cause an imbalance between the LIFO inventory balance and the sum of the extended LIFO layers
Internal Index Calculation	Improper sampling method used	Sample of items chosen is not a representative sample	Review by person with substantial LIFO experience	Sampling plan designed and updated by person with substantial LIFO experience	n/a	IRS LIFO Training Guide	
Internal Index Calculation	Improper exclusion of new items	Wholesaler carries wine for the first time but this & other new items (none present in P/Y inventory) are excluded from the internal index calculation	Review by person with substantial LIFO experience	Design of internal index calculation steps made by someone with substantial LIFO experience	n/a	§ 1.472–8(e)(2)(iii) & 1984 AICPA LIFO Issues Paper paragraph 4-27	Both GAAP & IRS Regs. require that new items be priced at p/y or base year cost or at reconstructed p/y (link-chain) or base year cost (double-extension)
Internal Index Calculation	Error in setting P/Y cost = C/Y cost for new item	C/Y item cost for a different item is used as P/Y item cost	Review to determine that P/Y costs are priced properly as per policy	Review by person with substantial LIFO experience	n/a	§ 1.472–8(e)(2)(iii)	
Internal Index Calculation	Improper item definition	Comparison of avg. cost/lb. from P/Y to C/Y is used for all steel nails instead of comparison at SKU level	Review by person with substantial LIFO experience	Design of internal index calculation steps made by someone with substantial LIFO experience	n/a	IRS Ltr. Rul. 9632001 & several other related rulings	

Error Type	Error Description	Error Example	Audit/Error Detection Step	Preventative Control	LP Rpt. Ref.	IRS GAAP Ref.	Comments
Internal Index Calculation	Vendor price list used to measure LIFO inflation	Equipment manufacturer price list used to calculate LIFO inflation	Review by person with substantial LIFO experience	Design of internal index calculation steps made by someone with substantial LIFO experience	n/a	§ 1.472–8(e)(1)	IRS Regs. require that internal indexes measure taxpayer's actual inventory cost & not external price indexes.
Internal Index Calculation	Improper math used to calculate internal index	Sum of C/Y extensions divided by sum of P/Y extensions which is the opposite of the correct math	Recalculate internal index	Review by person with substantial LIFO experience	n/a	§ 1.472–8(e)(1)	
IPIC Method C/Y Index Calculation	PPI index per pool index calculation schedule does not tie to PPI detailed report	Index used was for the 02890175 code but it should have been the 02890174 code	Tie P/Y & C/Y indexes used to PPI Detailed Reports at http://www.bls.gov/ppi/ppi_dr.htm	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24	§ 1.472–8(e)(3)(iii)(D)(2))	
IPIC Method C/Y Index Calculation	Wrong month index used	The representative appropriate month that should be used every year is December but November is used instead	Determine the proper month to use by reference to P/Y calculation, Form 970 or LIFO policy document & tie index to PPI Detailed Report	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24	§ 1.472–8(e)(3)(iii)(B)(3)	
IPIC Method C/Y Index Calculation	Improper appropriate month used	The annually selected appropriate month (not a representative appropriate month) selected is not allowable per reference to IRS Regs.	Determine the range of possible appropriate months from schedule of purchases & based on CYC method & ascertain whether the month selected is consistent with annual selection method	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24	§ 1.472–8(e)(3)(iii)(B)(3)	
IPIC Method C/Y Index Calculation	Index calculation P/Y numerator is not the C/Y denominator	May 2014 is the numerator for the June 2014 y/e calculation, so it should be the denominator for the June 2015 y/e calculation but is not	Tie P/Y denominator used in C/Y pool index calculation schedule to numerator used in P/Y index calculation schedule	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24 c/y & p/y	§ 1.472–8(e)(3)(iii)(E)(2)	
IPIC Method C/Y Index Calculation	Final index used but preliminary should be used (method chosen) or vice versa	Final indexes are elected on the Form 970 or by prior years usage but preliminary indexes are used	Determine whether final or preliminary index method was chosen & tie to the appropriate PPI detailed report	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24	§ 1.472–8(e)(3)(iii)(D)(2))	
IPIC Method C/Y Index Calculation	Inconsistent use of preliminary v. final indexes	Final indexes were used for the P/Y but preliminary indexes are used for the C/Y	Determine whether final or preliminary index method was chosen & tie to the appropriate PPI detailed report	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24	§ 1.472–8(e)(3)(iii)(D)(2))	

Error Type	Error Description	Error Example	Audit/Error Detection Step	Preventative Control	LP Rpt. Ref.	IRS GAAP Ref.	Comments
IPIC Method C/Y Index Calculation	Index not published & improper substitute index used	Nov. index used because the Dec. index normally used was unpublished when IRS Regs. require that the C/Y and P/Y indexes of the next less detailed code be used	Tie P/Y & C/Y indexes used to PPI Detailed Reports at http://www.bls.gov/ppi/ppi_dr.htm	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24	§ 1.472–8(e)(3)(iii)(D)(4)(i)	
IPIC Method C/Y Index Calculation	Commodity code publishing is discontinued by BLS & appropriate replacement code is not used	02840101 Canned baby foods used but this code was discontinued after 6/2008. 028401 Specialty canning has been used since then but 02840105 Canned baby foods & other canned specialties… first published 11/2007 s/b used	Review pool index calculation documentation to determine that appropriate PPI codes are being used	Review by person with substantial IPIC LIFO experience	n/a	§ 1.472–8(e)(3)(iii)(D)(4)(i)	
IPIC Method C/Y Index Calculation	Don't mix final & preliminary indexes	Preliminary indexes used for C/Y but final indexes used for P/Y	Determine whether final or preliminary index method was chosen & tie to the appropriate PPI detailed report	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24	§ 1.472–8(e)(3)(iii)(D)(2))	
IPIC Method C/Y Index Calculation	Must use PPI Detailed Report indexes published in 2 separate reports (C/Y & P/Y), not annual % change	For a March appropriate month, the percentage change from the P/Y March index to the C/Y March index in the PPI Detailed Report (2nd column from the right) is used as the C/Y LIFO inflation	Tie P/Y & C/Y indexes used to PPI Detailed Reports at http://www.bls.gov/ppi/ppi_dr.htm	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24	§ 1.472–8(e)(3)(iii)(D)(2))	The percentage change from the P/Y same month shown in the PPI Detailed Report is the current year preliminary index divided by the prior year final index, so this % change cannot be used
IPIC Method C/Y Index Calculation	Incorrect index calculation math	Category indexes calculated by dividing P/Y indexes by C/Y indexes	Recalculate using proper steps from IRS Regs. or LIFO-PRO Training Basics Guide	Prepare & review schedule that is in the format of LIFO-PRO Reports 23 & 24	23 & 24	§ 1.472–8(e)(3)(iii)(E)(2)	
IPIC Method C/Y Index Calculation	Incorrect index category weighted harmonic mean calculation math	Arithmetic mean math is used rather than Harmonic mean	Recalculate pool index using Regs. steps	Prepare & review schedule that is in the format of LIFO-PRO Report 23	23	§ 1.472–8(e)(3)(iii)(D)(2))	
IPIC Method C/Y Index Calculation	PPI Table 11 code is used when a Table 9 code should have been	Table 11 325412-1111 Cancer therapy products indexes are used instead of 06380105 Cancer therapy products Table 9 code	Review PPI Detailed Reports to ascertain that the Table 11 code is more appropriate for the inventory item	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24	§ 1.472–8(e)(3)(iii)(B)(2))	The IRS Regs. require that PPI Table 9 indexes be used unless a more appropriate code is found in another PPI table

Error Type	Error Description	Error Example	Audit/Error Detection Step	Preventative Control	LP Rpt. Ref.	IRS GAAP Ref.	Comments
IPIC Method C/Y Index Calculation	Use of dual index method	The cumulative inflator index used to price an increment is different than the cumulative deflator index		Review by person with substantial LIFO experience	n/a	§ 1.472–8(e)(3)(i)	There is no GAAP prohibition for using a dual index method & some companies use a dual index for an internal index book LIFO method. We have yet to see a company use a dual index for book LIFO when the IPIC method is used.
IPIC Method C/Y Index Calculation	Old IPIC LIFO Regs. (before 2002) methods used	80% rather than 100% of PPI inflation is used	Recalculate pool index calculation	Prepare & review schedule that is in the format of LIFO-PRO Report 24	24	1982 AICPA LIFO Issues Paper for book LIFO & § 1.472–8(e)(3) for tax LIFO	GAAP does not address old v. new Regs. methods which may imply that using old IPIC Regs. okay for book but not for tax except that 80% limitation has never been permissible under GAAP
IPIC 10% Method Index Calculation	Improper BLS Weight used or double counted in 10% category index calculation	Inventory balances are assigned to both the 10170602 & 101706 codes, so the weight of 10170602 is used twice. The 101706 weight cannot be used unless all 8 digit codes it subsumes are present in inventory.	Recalculate using proper steps from IRS Regs. or LIFO-PRO Training Basics Guide	Review by person with substantial IPIC LIFO experience	23	§ 1.472–8(e)(3)(iii)(D)(5)	
IPIC 10% Method Index Calculation	Arithmetic mean math not used for calculation of a 10% category index	Harmonic mean math was used for the 10% category index calculation but arithmetic mean math should have been used	Recalculate using proper steps from IRS Regs. or LIFO-PRO Training Basics Guide	Review by person with substantial IPIC LIFO experience	23	§ 1.472–8(e)(3)(iii)(D)(5)(2)	Harmonic mean math is used to calculate the pool indexes but arithmetic mean math should be used to calculate 10% category indexes
IPIC 10% Method Index Calculation	Incorrect 10% category determination	024 Processed fruits & vegetables was a 10% index category last year but is not this year however it was treated as a 10% category this year	Recalculate using proper steps from IRS Regs. or LIFO-PRO Training Basics Guide	Review by person with substantial IPIC LIFO experience	23	§ 1.472–8(e)(3)(iii)(D)(5)	
IPIC 10% Method Index Calculation	Wrong year's BLS Weight used	2014 BLS weights were used for a 3/31/2015 y/e calculation but the 2013 weights should have been used	Review to determine that the proper year weight is used	Review by person with substantial IPIC LIFO experience	23	§ 1.472–8(e)(3)(iii)(D)(5)(2)	The Regs. specify that the most recent year BLS weights are used only for July through December appropriate months
Bureau of Labor Statistics (BLS) Producer Price Index (PPI) or Consumer Price Index (CPI) Category Assignment (IPIC method only)	Inappropriate PPI commodity code selected	The 02440102 Canned vegetable PPI code was used for tomato paste but 02440127 Canned catsup and other tomato based sauces should have been used	Review pool index calculation documentation to determine that appropriate PPI codes are being used	Review by person with substantial IPIC LIFO experience	n/a	§ 1.472–8(e)(3)(iii)(C)(1)	

Error Type	Error Description	Error Example	Audit/Error Detection Step	Preventative Control	LP Rpt. Ref.	IRS GAAP Ref.	Comments
Bureau of Labor Statistics (BLS) Producer Price Index (PPI) or Consumer Price Index (CPI) Category Assignment (IPIC method only)	PPI or CPI services code used rather than PPI or CPI commodity code	33110101 Sale of textbooks used instead of 094401141 Textbook printing & binding	Review pool index calculation documentation to determine that appropriate PPI codes are being used	Review by person with substantial IPIC LIFO experience	n/a	§ 1.472–8(e)(3)(iii)(C)(1)	This is not specifically addressed in the Regs. because the publishing of the PPI services codes (those with a 2-digit Table 9 code > 15)
Bureau of Labor Statistics (BLS) Producer Price Index (PPI) or Consumer Price Index (CPI) Category Assignment (IPIC method only)	CPI substratum code used rather than CPI commodity code	SS06011 Fresh whole chicken CPI Table 3 substratum code used instead of SEFF01 Chicken	Review pool index calculation documentation to determine that appropriate CPI codes are being used	Review by person with substantial IPIC LIFO experience	n/a	§ 1.472–8(e)(3)(iii)(C)(1)	This is not addressed in the Regs. but substratum CPI codes are not part of the normal CPI sampling, are assigned no BLS weights & should not be used for LIFO calculations
Bureau of Labor Statistics (BLS) Producer Price Index (PPI) or Consumer Price Index (CPI) Category Assignment (IPIC method only)	Less detailed PPI codes assigned than permitted by the Regs. rules	024401 Canned vegetables and juices PPI code was used for tomato paste but 02440127 Canned catsup and other tomato based sauces should have been used	Review pool index calculation documentation to determine that appropriate PPI codes are being used	Review by person with substantial IPIC LIFO experience	n/a	§ 1.472–8(e)(3)(iii)(C)(1)	
Bureau of Labor Statistics (BLS) Producer Price Index (PPI) or Consumer Price Index (CPI) Category Assignment (IPIC method only)	Improper replacement PPI code assigned for discontinued code	02890153 Miscellaneous flavoring powders & tablets was discontinued after 12/2000 & 028901 Other misc. processed foods used as replacement instead of replacement code	Review pool index calculation documentation to determine that appropriate PPI codes are being used	Review by person with substantial IPIC LIFO experience	n/a	§ 1.472–8(e)(3)(iii)(C)(1)	
Bureau of Labor Statistics (BLS) Producer Price Index (PPI) or Consumer Price Index (CPI) Category Assignment (IPIC method only)	Finished goods PPI code not used for WIP inventory	Raw material PPI code used for material value of WIP instead of the finished good PPI code as per the Regs. rules	Review pool index calculation documentation to determine that appropriate PPI codes are being used	Review by person with substantial IPIC LIFO experience	n/a	§ 1.472–8(e)(3)(iii)(C)(1)	
Improper Financial Statement LIFO Disclosure	Footnote omits fact that not all inventories are valued using LIFO		Review notes to financial statements	Review by person with substantial LIFO experience	n/a	1984 AICPA LIFO Issues Paper §3-16	
Improper Financial Statement LIFO Disclosure	Layer erosion effect not disclosed (if material) in financial statement notes		Review notes to financial statements	Review by person with substantial LIFO experience	n/a	1984 AICPA LIFO Issues Paper paragraph 5-28	

Error Type	Error Description	Error Example	Audit/Error Detection Step	Preventative Control	LP Rpt. Ref.	IRS GAAP Ref.	Comments
Improper Financial Statement LIFO Disclosure	LIFO reserve balance is not disclosed		Review financial statements & notes	Review by person with substantial LIFO experience	n/a	1984 AICPA LIFO Issues Paper paragraph 2-24	
LIFO Conformity Rule Violations	More inventories are on LIFO for tax than for book	All inventories except produce is on LIFO for tax but both produce & meat is excluded from the LIFO election scope for book	Review reconciliation of book to tax LIFO current-year cost	Reconcile LIFO CYC used for book v. that used for tax	n/a	§ 1.472–2(e)(2)(iii)	
LIFO Conformity Rule Violations	Financial statement presented to the bank are FIFO basis for a LIFO taxpayer		Review financial statements & notes	Review by person with substantial LIFO experience	n/a	§ 1.472–2(e)(2)(iii)	
LIFO Conformity Rule Violations	The FIFO basis pre-tax income is shown on the Income Statement		Review financial statements & notes	Review by person with substantial LIFO experience	n/a	§ 1.472–2(e)(2)(iii)	The LIFO reserve may be shown on the balance sheet and/or notes but the FIFO basis income cannot be shown on the Income Statement
Other LIFO Calculation Errors	Improper population of pool number field	Some inventory balances are allocated to the wrong pool	Compare CYC balances C/Y to P/Y and investigate large differences. Compare C/Y to P/Y CYC balances for each PPI code.		n/a		Understatement of the C/YC for a pool can cause "artificial layer erosion" & income & this error is not self-correcting if the C/YC is allocated properly in the subsequent year
Other LIFO Calculation Errors	Improper LIFO pool combination	Post-combination inventory at base balances equal sum of pre-combination inventory at base balances for the y/e prior to the combination	Make a comparison to determine that the post-combination inventory at base balances are equal to the cumulative sum of the layers at base for each pre-combination year	Make this comparison after the pool combination has been made. Someone with substantial LIFO pool combination experience should review this.	16		The error rate for pool combinations is very high if made by someone lacking substantial LIFO pool combination experience. The examples provided in the Regs. is very simplistic. This type of error will cause an imbalance in LIFO-PRO Report 16 between the LIFO inventory field and the sum of the layers at cost remaining in the rightmost column. If the manual layer history spreadsheet calculation does not include both the year to year LIFO calculation steps and the remaining layers section proof, this error may not be detected.

Error Type	Error Description	Error Example	Audit/Error Detection Step	Preventative Control	LP Rpt. Ref.	IRS GAAP Ref.	Comments
Other LIFO Calculation Errors	Improper LIFO pooling method used	A single pool is used by a multi-line retailer or wholesaler	Review internal documentation justifying the pooling method used	Review by person with substantial LIFO experience	n/a	§ 1.472–8(b) & 1.472–8(c) & 1984 AICPA LIFO Issues Paper section 4	Refer to the LIFO Training Basics Guide pooling method section
Other LIFO Calculation Errors	Improper adjustment of LIFO layer history when the LIFO election scope is changed	The y/e before expansion of scope inventory balances must be added to the CYC, inventory at base and LIFO inventory balance fields for the layer history used for the first y/e following the scope expansion. The LIFO expense for the first post-scope expansion year will be understated (if there is inflation) if the layer history is not adjusted for the scope expansion.	Review layer history schedule for year following LIFO election scope expansion	Review by someone with substantial LIFO experience	n/a		No AICPA or IRS guidance is provided on this subject, so it is important that the LIFO calculation for the period in which the LIFO election scope is expanded be prepared or reviewed by someone with substantial LIFO experience
Other LIFO Calculation Errors	The raw materials LIFO index is used for labor & overhead dollars for a manufacturer not using a standard cost system	No separate LIFO index is calculated for the labor & overhead dollars	Review pool index calculation documentation	Review	n/a	§ 1.472	The difficulty of calculating LIFO indexes for manufacturing labor & overhead is the reason that some companies use a raw material & raw material content of WIP and finished goods LIFO election scope so that L and OH costs are not on LIFO. The IRS has long maintained a position that the use of the components-of-cost method whereby separate LIFO pools are established for L & OH is not authorized in the Regs.
Other LIFO Calculation Errors	Improper extension & summing of § 263A ratios times the LIFO layers that remain as of the current y/e	The sum of the § 263A ratio times the remaining LIFO layers' extensions does not tie to the § 263A cost balance on Sched. M-1 of tax return	Recalculate § 263A cost calculation once the C/Y § 263A absorption ratio has been calculated	Review by person with substantial LIFO experience	Report 16 version including § 263A costs	§ 1.263A	Generally only applicable for tax LIFO. Not applicable if burden rate method or other non-simplified method used.

Appendix: Sample LIFO-PRO Reports

Table of Contents

Standard Reports (for all LIFO methods)

Current & Prior Period (separate sheet included for each period if saved as Excel file):

Actual Year End LIFO Summary Report (Report 18) - Shows summary information for each pool and in total for the current and previous year ends (separate reports for each of these years). This report shows the balances necessary to make the LIFO accounting entries. Balances shown include the inventory current year cost (FIFO or average cost), current and cumulative indexes, LIFO inventory, reserve and expense and Sec. 263A costs (if applicable) for each pool.

LIFO Reserve Calculation Report (Report 18a) - This is a more detailed version of Report 18 that shows all the steps necessary to calculate all years' LIFO reserves and shows the details of decrement calculations where applicable. This report shows these calculations for all pools and in total for a given year. The bottom section of this report (except where retail LIFO is used) shows the breakdown of the LIFO expense or income components between the inflation index effect and the layer erosion effect. The latter is the pre-tax amount that is required by GAAP to be disclosed in the notes to the financial statements (if material) for financial reporting purposes.

LIFO Expense Components Report (Report 19) - This report shows the breakdown of the LIFO expense or income components between the inflation index effect and the layer erosion effect. The latter is the pre-tax amount that is required by GAAP to be disclosed in the notes to the financial statements (if material) for financial reporting purposes. Available in current-period only or all periods format.

All Periods (one page/sheet per pool including combined totals when printed or saved):

LIFO Inventory History Summary Report (Report 16) - This is a one page per pool LIFO history carryforward schedule for all years, which includes all data fields involved in the calculation of LIFO balances once the current year index and current year cost (FIFO or average cost) total by pool has been determined. This format shows the amount of the original increment or decrement and the amount of all layers remaining as of the latest year closed. The cumulative inflator indexes for years in which there are decrements is the weighted average index of the layers eroded and is equal to the Priced Increase (Decrease) or decrease in LIFO cost divided by the decrease at base prices. The detail of which years' layers are eroded for decrements is shown in Reports 16a and 18a.

LIFO Layer History Proof Report (Report 16a) - This is a one page per pool schedule showing the detail by layer of all decrements and the detail by layer of all layers remaining. This report is a proof of the Report 16 decrement calculations.

LIFO Inventory History Detail Report (Report 17) - This is a one page per pool LIFO history for all years which includes all data contained in Report 16 & also shows the remaining balance of all layers for all years.

LIFO Reserve by Layer Report (Report 15) - This report shows which years' layers the most recent year end LIFO reserve is attributable to and in what amounts along with the FIFO balance required to erode each layer. The FIFO balance shown for each year is the balance at which that layer begins to be eroded; that layer will be completely eroded (and the LIFO reserve associated with it will be removed) when the next year (following the most recently closed year end) FIFO balance is reduced to the next earliest layer remaining FIFO balance shown in the rightmost column.

Internal Index Reports

Internal Index Data Input Report (Report 3) – This report is primarily used for companies using internal indexes as it serves as the data input screen (Screen 3) for entering the front-end software input values required to complete the LIFO calculation. The blue-shaded fields are the front-end input values are entered by software users and serves as a source document for the variables used to complete the back-end of the LIFO calculation. This report automatically updates the LIFO expense, reserve, inventory & expense/income component fields shown to the right of the current period index columns after the blue-shaded input value fields have been entered. This report & screen is also used for external index users wishing to perform interim estimates using current period inventory balances, a user-defined BLS index period range & the product mix used for the last period closed (prior period).

External Index Reports (IPIC LIFO CPI/PPI)

IPIC LIFO Calculation Summary Report (Report 23S) - This is a summary report by pool and in total showing the IPIC method pool indexes for the current year as well as the prior and current year cumulative indexes, FIFO and LIFO inventory balances, LIFO reserve, and LIFO expense.

IPIC LIFO Index Calculation Report (Report 23) - This shows the details of the pool index calculations using Harmonic Mean Weighting specified in the IRS Regulations.

IPIC LIFO Index by PPI Code Report (Report 24) - This report shows the current and prior year inflation indexes and calculation of current year inflation index for all PPI categories.

Replaced & Discontinued PPI Codes Report (Report 25) - This report shows the PPI categories assigned to inventory balances on the Excel input schedule which have been discontinued or recoded. Separate sections are printed for: 1) Categories that replacements were automatically made by the LIFO-PRO software 2) Categories that replacements will be made for future periods based on when the categories were discontinued.

IPIC 5% Method Proof Report (Report 26) - Shows which of the 8 CPI or 15 PPI BLS Major Category or Commodity Groups are to be LIFO pools based on inclusion of 5% or more of total inventory per IRS Reg. Sec. 1.472-8(c)(2) for establishing pools.

Other Reports

Consolidated Reports for Multiple/Separate Entities, Locations or for Differing Book & Tax LIFO Methods – Used for the following:

- Companies needing to combine the results of separate LIFO calculations made for multiple entities or locations for financial statement or tax purposes
- Companies needing to combine the results of separate financial reporting (book) & tax LIFO calculations in order to compute deferred tax asset/liability balances and/or schedule M items

LIFO Projections Report (Report 1) - This shows the **next year** LIFO expense (income) amounts that would result from the range of year end inventory current year cost (FIFO or average cost) balances shown in the leftmost column and the range of inflation indexes shown on the sixth row.

IPIC Data Input Sheet – This report is the source document for external index calculations as it shows the Excel file imported into the software containing BLS categories & inventory balances.

UNICAP Reports – Shows balances before & including §263A UNICAP costs with user-inputted absorption ratios. UNICAP costs are included in Reports 16, 16a, 17, 18 & 18a.

Current Year End LIFO Calculation Summary Report (Report 18)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:21:55 PM**
ACTUAL YEAR-END LIFO SUMMARY EXCLUDING UNICAP COSTS REPORT 18
12/31/2018

POOL NO.	POOL NAME	CURRENT YEAR COST	12/31/2018 DEFLATOR INDEX	CUMLTV DEFLATOR INDEX	CUMLTV INFLATOR INDEX	LIFO INVENTORY	12/31/2018 LIFO RESERVE	12/31/2017 LIFO RESERVE	12/31/2018 LIFO EXPENSE
1	Chemicals and allied products(06)	1,158,892	1.012672	1.616186	E 1.616186	805,670	353,222	338,720	14,502
2	Metal and metal products(10)	29,359,510	1.046404	1.654731	E 1.654731	19,701,784	9,657,726	8,355,744	1,301,983
3	Machinery and equipment(11)	33,531,598	1.049501	1.663731	E 1.663731	22,338,036	11,193,561	9,612,004	1,581,558
	Totals	64,050,000	1.047391			42,845,491	21,204,509	18,306,467	2,898,042

This report shows summary information for each pool and in total for the current and previous year ends (separate reports for each of these years). This report shows the balances necessary to make the LIFO accounting entries. Balances shown include the inventory current year cost (FIFO or average cost), current and cumulative indexes, LIFO inventory, reserve and expense and Sec. 263A costs (if applicable) for each pool.

Prior Year End LIFO Calculation Summary Report (Report 18)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:21:55 PM**
ACTUAL YEAR-END LIFO SUMMARY EXCLUDING UNICAP COSTS REPORT 18
12/31/2017

POOL NO.	POOL NAME	CURRENT YEAR COST	12/31/2017 DEFLATOR INDEX	CUMLTV DEFLATOR INDEX	CUMLTV INFLATOR INDEX	LIFO INVENTORY	12/31/2017 LIFO RESERVE	12/31/2016 LIFO RESERVE	12/31/2017 LIFO EXPENSE
1	Chemicals and allied products(06)	1,158,892	1.029652	1.595962	1.595962	820,172	338,720	310,731	27,989
2	Metal and metal products(10)	29,359,510	1.020225	1.581350	1.581350	21,003,767	8,355,744	7,872,092	483,651
3	Machinery and equipment(11)	33,531,598	1.022747	1.585259	1.585259	23,919,594	9,612,004	8,990,744	621,260
	Totals	64,050,000	1.021713			45,743,533	18,306,467	17,173,567	1,132,901

LIFO Reserve Calculation Report (Report 18a)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:22:04 PM**
CALCULATION OF LIFO RESERVE REPORT 18a
12/31/2018

Pool number			**1**	**2**	**3**	
Pool name	**Row**	**Formula/Source**	**Chemicals and allied products(06)**	**Metal and metal products(10)**	**Machinery and equipment(11)**	**TOTALS/AVG.**
Current-year cost	7	Inventory total	1,158,892	29,359,510	33,531,598	64,050,000
Current year deflator index	8	Pool index calculated	1.012672	1.046404	1.049501	1.047391
Prior year cumulative deflator index	9	Layer history Report 16	1.595962	1.581350	1.585259	
Current year cumulative deflator inde	10	Row 8 times Row 9	1.616186	1.654731	1.663731	
Current year inventory at base	11	Row 7 divided by Row 10	717,054	17,742,771	20,154,462	38,614,287
Prior year inventory at base	12	Layer history Report 16	726,140	18,566,107	21,152,127	40,444,375
Increase(decrease) at base	13	Row 11 minus Row 12	-9,087	-823,336	-997,665	-1,830,088
Current year cumulative inflator inde	14	Same as Row 10 for increment	n/a	n/a	n/a	
Increase(decrease) in LIFO cost	15	Row 28	-14,502	-1,301,983	-1,581,558	-2,898,042
Prior year LIFO inventory	16	Layer history Report 16	820,172	21,003,767	23,919,594	45,743,533
Current year LIFO inventory	17	Row 15 plus Row 16	805,670	19,701,784	22,338,036	42,845,491
Current year LIFO reserve	18	Row 7 minus Row 17	353,222	9,657,726	11,193,561	21,204,509
Prior year LIFO reserve	19	Layer history Report 16	338,720	8,355,744	9,612,004	18,306,467
Current year LIFO expense(income)	20	Row 18 minus Row 19	14,502	1,301,983	1,581,558	2,898,042
Detail of decrements calculation:						
Decrease at base by year:	23					
	24	Report 16a	-9,087 17	-823,336 17	-997,665 17	
Cumulative inflator indexes for decre	25					
	26	Report 16a	1.595962 17	1.581350 17	1.585259 17	
Decrease at LIFO cost by year:	27					
	28	Report 16a	-14,502 17	-1,301,983 17	-1,581,558 17	
Proof of current year LIFO expense(income):						
Current year inflation(deflation)	30	Row 8 minus one as a percentage	1.27%	4.64%	4.95%	4.74%
Prior year current-year cost	31	Layer history Report 16	1,158,892	29,359,510	33,531,598	64,050,000
C/Y expense(income) due to inflation	32	Row 30 times Row 31	14,686	1,362,400	1,659,846	3,036,932
C/Y cum. def. index minus avg. index of layers eroded	33	Row 10 - Row 26 (pools w/decr only)	.020224	.073381	.078472	
Expense(income) due to layer erosions	34	Row 13 * Row 33 (pools w/decr only)	-184	-60,417	-78,289	-138,890
Total current year LIFO expense(income)	35	Row 32 plus Row 34(ties to Row 20)	14,502	1,301,983	1,581,558	2,898,042

This is a more detailed version of Report 18 that shows all the steps necessary to calculate all years' LIFO reserves and shows the details of decrement calculations where applicable. This report shows these calculations for all pools and in total for a given year. The bottom section of this report (except where retail LIFO is used) shows the breakdown of the LIFO expense or income components between the inflation index effect and the layer erosion effect. The latter is the pre-tax amount that is required by GAAP to be disclosed in the notes to the financial statements (if material) for financial reporting purposes.

LIFO Expense Components Report (Report 19)

HVAC Equip & Supplies Wholesaler 8/18/2019 2:37:40 PM
BREAKDOWN OF LIFO EXPENSE COMPONENTS REPORT 19
ALL POOLS

Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files

YEAR	INFLATION EFFECT	LAYER EROSION EFFECT	TOTAL LIFO EXPENSE
12/31/1999	0	0	0
12/31/2000	12,182,495	-2,093,446	10,089,049
12/31/2001	2,017,925	-869,681	1,148,244
12/31/2002	2,497,252	-1,082,904	1,414,348
12/31/2003	1,725,222	-1,013,225	711,997
12/31/2004	3,741,832	-1,678,458	2,063,373
12/31/2005	19	-734,625	-734,606
12/31/2006	0	-699,638	-699,638
12/31/2007	0	-365,001	-365,001
12/31/2008	9,161,861	-3,014,675	6,147,187
12/31/2009	-746,232	-666,093	-1,412,325
12/31/2010	1,080,177	-1,286,575	-206,398
12/31/2011	-1,344,903	-373,586	-1,718,489
12/31/2012	-657,492	-548,354	-1,205,846
12/31/2013	47	0	47
12/31/2014	1,002,032	-331,875	670,157
12/31/2015	623,610	0	623,610
12/31/2016	647,858	0	647,858
12/31/2017	1,132,901	0	1,132,901
12/31/2018	3,036,932	-138,890	2,898,042
TOTAL	36,101,535	-14,897,026	21,204,509

This report shows the breakdown of the LIFO expense or income components between the inflation index effect and the layer erosion effect. The latter is the pre-tax amount that is required by GAAP to be disclosed in the notes to the financial statements (if material) for financial reporting purposes. Available in current-period only or all periods format.

LIFO Expense Components Report (Report 19)

HVAC Equip & Supplies Wholesaler 8/18/2019 2:38:09 PM
BREAKDOWN OF LIFO EXPENSE COMPONENTS REPORT 19
LIFO SUMMARY FOR 12/31/2018

Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files

----------POOL----------		INFLATION	LAYER EROSION	TOTAL LIFO	
NO.	NAME	EFFECT	EFFECT	EXPENSE	
1	Chemicals and allied products(06)	14,686	-184	14,502	E
2	Metal and metal products(10)	1,362,400	-60,417	1,301,983	E
3	Machinery and equipment(11)	1,659,846	-78,289	1,581,558	E
	TOTAL	3,036,932	-138,890	2,898,042	

E-Layer erosion.

LIFO Inventory History Summary Report (Report 16)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:05 PM**

LIFO INVENTORY HISTORY SCHEDULE REPORT 16

Pool: 1 Chemicals and allied products(06) Data path:Y:\LIFOPRO1\Sample_HVAC_Wholesaler\LPSW_Data_Files

PERIOD	CURRENT YEAR COST	CUR. YR. DEFLATOR INDEX	CUMLTV. DEFLATOR INDEX	INVENTORY AT BASE PRICES	INC(DEC) AT BASE PRICES	CUMLTV. INFLATOR INDEX	PRICED INC(DEC)	LIFO INVENTORY	LIFO RESERVE	LIFO EXPENSE	LAYER AT BASE	LAYER AT COST
12/31/1999	1,602,354	1.000000	1.000000	1,602,354	1,602,354	1.000000	1,602,354	1,602,354	0	0	564,167	564,167
12/31/2000	1,526,051	1.149997	1.149997	1,327,004	-275,349	1.000000	-275,349	1,327,004	199,047	199,047	0	0
12/31/2001	1,453,382	1.026088	1.179998	1,231,682	-95,323	1.000000	-95,323	1,231,682	221,700	22,654	0	0
12/31/2002	1,384,173	1.033899	1.219999	1,134,569	-97,112	1.000000	-97,112	1,134,569	249,604	27,904	0	0
12/31/2003	1,318,260	1.024590	1.249999	1,054,609	-79,960	1.000000	-79,960	1,054,609	263,651	14,047	0	0
12/31/2004	1,255,486	1.056000	1.319999	951,127	-103,483	1.000000	-103,483	951,127	304,359	40,708	0	0
12/31/2005	1,195,701	1.000000	1.319999	905,835	-45,292	1.000000	-45,292	905,835	289,866	-14,493	0	0
12/31/2006	1,138,763	1.000000	1.319999	862,700	-43,135	1.000000	-43,135	862,700	276,063	-13,803	0	0
12/31/2007	1,084,536	1.000000	1.319999	821,619	-41,081	1.000000	-41,081	821,619	262,917	-13,146	0	0
12/31/2008	1,032,891	1.159092	1.530000	675,092	-146,526	1.000000	-146,526	675,092	357,799	94,882	0	0
12/31/2009	983,706	.986928	1.510000	651,461	-23,631	1.000000	-23,631	651,461	332,245	-25,554	0	0
12/31/2010	936,863	1.019868	1.540001	608,352	-43,109	1.000000	-43,109	608,352	328,511	-3,734	0	0
12/31/2011	892,251	.974026	1.500001	594,833	-13,519	1.000000	-13,519	594,833	297,417	-31,094	0	0
12/31/2012	849,762	.986667	1.480001	574,163	-20,670	1.000000	-20,670	574,163	275,599	-21,818	0	0
12/31/2013	894,487	1.000001	1.480003	604,382	30,219	1.480003	44,723	618,887	275,600	1	0	0
12/31/2014	851,892	1.020269	1.510001	564,167	-40,215	1.360684	-54,720	564,167	287,725	12,126	0	0
12/31/2015	896,729	1.013245	1.530001	586,097	21,930	1.530001	33,553	597,720	299,009	11,283	21,930	33,553
12/31/2016	943,925	1.013072	1.550001	608,983	22,887	1.550001	35,474	633,194	310,731	11,722	22,887	35,474
12/31/2017	1,158,892	1.029652	1.595962	726,140	117,157	1.595962	186,978	820,172	338,720	27,989	108,070	172,476
12/31/2018	1,158,892	1.012672	1.616186	717,054	-9,087	1.595962	-14,502	805,670	353,222	14,502	0	0
					717,054	1.123584	805,670			353,222	717,054	805,670

This is a one page per pool LIFO history carryforward schedule for all years, which includes all data fields involved in the calculation of LIFO balances once the current year index and current year cost (FIFO or average cost) total by pool has been determined. This format shows the amount of the original increment or decrement and the amount of all layers remaining as of the latest year closed. The cumulative inflator indexes for years in which there are decrements is the weighted average index of the layers eroded and is equal to the Priced Increase (Decrease) or decrease in LIFO cost divided by the decrease at base prices. The detail of which years' layers are eroded for decrements is shown in Reports 16a and 18a.

LIFO Inventory History Summary Report (Report 16)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:05 PM**

LIFO INVENTORY HISTORY SCHEDULE REPORT 16

Pool: 2 Metal and metal products(10) Data path:Y:\LIFOPRO1\Sample_HVAC_Wholesaler\LPSW_Data_Files

PERIOD	CURRENT YEAR COST	CUR. YR. DEFLATOR INDEX	CUMLTV. DEFLATOR INDEX	INVENTORY AT BASE PRICES	INC(DEC) AT BASE PRICES	CUMLTV. INFLATOR INDEX	PRICED INC(DEC)	LIFO INVENTORY	LIFO RESERVE	LIFO EXPENSE	LAYER AT BASE	LAYER AT COST
12/31/1999	36,728,106	1.000000	1.000000	36,728,106	36,728,106	1.000000	36,728,106	36,728,106	0	0	14,292,666	14,292,666
12/31/2000	34,979,149	1.149997	1.149997	30,416,730	-6,311,376	1.000000	-6,311,376	30,416,730	4,562,418	4,562,418	0	0
12/31/2001	33,313,475	1.026088	1.179998	28,231,803	-2,184,927	1.000000	-2,184,927	28,231,803	5,081,671	519,253	0	0
12/31/2002	31,727,119	1.033899	1.219999	26,005,858	-2,225,945	1.000000	-2,225,945	26,005,858	5,721,261	639,589	0	0
12/31/2003	30,216,304	1.024590	1.249999	24,173,068	-1,832,791	1.000000	-1,832,791	24,173,068	6,043,236	321,976	0	0
12/31/2004	28,777,432	1.056000	1.319999	21,801,108	-2,371,960	1.000000	-2,371,960	21,801,108	6,976,324	933,088	0	0
12/31/2005	27,407,078	1.000000	1.319999	20,762,954	-1,038,154	1.000000	-1,038,154	20,762,954	6,644,124	-332,200	0	0
12/31/2006	26,101,979	1.000000	1.319999	19,774,242	-988,712	1.000000	-988,712	19,774,242	6,327,738	-316,387	0	0
12/31/2007	27,475,768	1.000000	1.319999	20,814,991	1,040,750	1.319999	1,373,788	21,148,030	6,327,738	0	0	0
12/31/2008	26,167,398	1.159092	1.530000	17,102,871	-3,712,120	1.089717	-4,045,159	17,102,871	9,064,526	2,736,789	0	0
12/31/2009	24,921,331	.986928	1.510000	16,504,192	-598,679	1.000000	-598,679	16,504,192	8,417,139	-647,387	0	0
12/31/2010	23,734,601	1.019868	1.540001	15,412,072	-1,092,120	1.000000	-1,092,120	15,412,072	8,322,529	-94,610	0	0
12/31/2011	22,604,382	.974026	1.500001	15,069,581	-342,491	1.000000	-342,491	15,069,581	7,534,801	-787,728	0	0
12/31/2012	21,527,983	.986667	1.480001	14,545,923	-523,658	1.000000	-523,658	14,545,923	6,982,060	-552,741	0	0
12/31/2013	22,661,035	1.000001	1.480003	15,311,482	765,560	1.480003	1,133,030	15,678,953	6,982,082	22	0	0
12/31/2014	21,581,938	1.020269	1.510001	14,292,666	-1,018,816	1.360684	-1,386,286	14,292,666	7,289,271	307,189	0	0
12/31/2015	22,717,829	1.013245	1.530001	14,848,247	555,580	1.530001	850,039	15,142,705	7,575,124	285,853	555,580	850,039
12/31/2016	23,913,504	1.013072	1.550001	15,428,058	579,811	1.550001	898,707	16,041,412	7,872,092	296,968	579,811	898,707
12/31/2017	29,359,510	1.020225	1.581350	18,566,107	3,138,050	1.581350	4,962,354	21,003,767	8,355,744	483,651	2,314,714	3,660,372
12/31/2018	29,359,510	1.046404	1.654731	17,742,771	-823,336	1.581350	-1,301,983	19,701,784	9,657,726	1,301,983	0	0
					17,742,771	1.110412	19,701,784			9,657,726	17,742,771	19,701,784

LIFO Inventory History Summary Report (Report 16)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:05 PM**

LIFO INVENTORY HISTORY SCHEDULE REPORT 16

Pool: 3 Machinery and equipment(11) Data path:Y:\LIFOPRO1\Sample_HVAC_Wholesaler\LPSW_Data_Files

PERIOD	CURRENT YEAR COST	CUR. YR. DEFLATOR INDEX	CUMLTV. DEFLATOR INDEX	INVENTORY AT BASE PRICES	INC(DEC) AT BASE PRICES	CUMLTV. INFLATOR INDEX	PRICED INC(DEC)	LIFO INVENTORY	LIFO RESERVE	LIFO EXPENSE	LAYER AT BASE	LAYER AT COST
12/31/1999	42,887,800	1.000000	1.000000	42,887,800	42,887,800	1.000000	42,887,800	42,887,800	0	0	16,323,704	16,323,704
12/31/2000	40,845,523	1.149997	1.149997	35,517,939	-7,369,860	1.000000	-7,369,860	35,517,939	5,327,584	5,327,584	0	0
12/31/2001	38,900,498	1.026088	1.179998	32,966,577	-2,551,362	1.000000	-2,551,362	32,966,577	5,933,922	606,337	0	0
12/31/2002	37,048,094	1.033899	1.219999	30,367,317	-2,599,260	1.000000	-2,599,260	30,367,317	6,680,777	746,855	0	0
12/31/2003	35,283,899	1.024590	1.249999	28,227,148	-2,140,169	1.000000	-2,140,169	28,227,148	7,056,751	375,974	0	0
12/31/2004	33,603,713	1.056000	1.319999	25,457,385	-2,769,763	1.000000	-2,769,763	25,457,385	8,146,328	1,089,577	0	0
12/31/2005	32,003,536	1.000000	1.319999	24,245,122	-1,212,264	1.000000	-1,212,264	24,245,122	7,758,415	-387,913	0	0
12/31/2006	30,479,558	1.000000	1.319999	23,090,592	-1,154,530	1.000000	-1,154,530	23,090,592	7,388,966	-369,448	0	0
12/31/2007	29,028,151	1.000000	1.319999	21,991,040	-1,099,552	1.000000	-1,099,552	21,991,040	7,037,111	-351,856	0	0
12/31/2008	29,885,876	1.159092	1.530000	19,533,249	-2,457,791	1.000000	-2,457,791	19,533,249	10,352,627	3,315,516	0	0
12/31/2009	28,462,739	.986928	1.510000	18,849,495	-683,754	1.000000	-683,754	18,849,495	9,613,243	-739,383	0	0
12/31/2010	27,107,370	1.019868	1.540001	17,602,181	-1,247,314	1.000000	-1,247,314	17,602,181	9,505,189	-108,054	0	0
12/31/2011	25,816,543	.974026	1.500001	17,211,021	-391,160	1.000000	-391,160	17,211,021	8,605,522	-899,667	0	0
12/31/2012	24,587,184	.986667	1.480001	16,612,948	-598,072	1.000000	-598,072	16,612,948	7,974,235	-631,287	0	0
12/31/2013	25,881,246	1.000001	1.480003	17,487,297	874,348	1.480003	1,294,038	17,906,986	7,974,260	25	0	0
12/31/2014	24,648,806	1.020269	1.510001	16,323,704	-1,163,593	1.360684	-1,583,282	16,323,704	8,325,102	350,842	0	0
12/31/2015	25,946,111	1.013245	1.530001	16,958,234	634,530	1.530001	970,832	17,294,536	8,651,576	326,474	634,530	970,832
12/31/2016	27,311,696	1.013072	1.550001	17,620,438	662,204	1.550001	1,026,417	18,320,952	8,990,744	339,168	662,204	1,026,417
12/31/2017	33,531,598	1.022747	1.585259	21,152,127	3,531,689	1.585259	5,598,642	23,919,594	9,612,004	621,260	2,534,024	4,017,084
12/31/2018	33,531,598	1.049501	1.663731	20,154,462	-997,665	1.585259	-1,581,558	22,338,036	11,193,561	1,581,558	0	0
					20,154,462	1.108342	22,338,036			11,193,561	20,154,462	22,338,036

LIFO Inventory History Summary Report (Report 16)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:05 PM**

LIFO INVENTORY HISTORY SCHEDULE REPORT 16

All Pools Combined **Data path:Y:\LIFOPRO1\Sample_HVAC_Wholesaler\LPSW_Data_Files**

PERIOD	CURRENT YEAR COST	CUR. YR. DEFLATOR INDEX	CUMLTV. DEFLATOR INDEX	INVENTORY AT BASE PRICES	INC(DEC) AT BASE PRICES	CUMLTV. INFLATOR INDEX	PRICED INC(DEC)	LIFO INVENTORY	LIFO RESERVE	LIFO EXPENSE	LAYER AT BASE	LAYER AT COST
12/31/1999	81,218,259		1.000000	81,218,259	81,218,259	1.000000	81,218,259	81,218,259	0	0	31,180,537	31,180,537
12/31/2000	77,350,723	1.149997		67,261,674	-13,956,585	1.000000	-13,956,585	67,261,674	10,089,049	10,089,049	0	0
12/31/2001	73,667,355	1.026088		62,430,062	-4,831,612	1.000000	-4,831,612	62,430,062	11,237,294	1,148,244	0	0
12/31/2002	70,159,386	1.033899		57,507,745	-4,922,317	1.000000	-4,922,317	57,507,745	12,651,642	1,414,348	0	0
12/31/2003	66,818,463	1.024590		53,454,825	-4,052,920	1.000000	-4,052,920	53,454,825	13,363,638	711,997	0	0
12/31/2004	63,636,631	1.056000		48,209,620	-5,245,205	1.000000	-5,245,205	48,209,620	15,427,012	2,063,373	0	0
12/31/2005	60,606,316	1.000000		45,913,910	-2,295,710	1.000000	-2,295,710	45,913,910	14,692,405	-734,606	0	0
12/31/2006	57,720,301	1.000000		43,727,534	-2,186,377	1.000000	-2,186,377	43,727,534	13,992,767	-699,638	0	0
12/31/2007	57,588,455	1.000000		43,627,650	-99,883	-2.334276	233,155	43,960,689	13,627,766	-365,001	0	0
12/31/2008	57,086,165	1.159092		37,311,213	-6,316,438	1.052726	-6,649,476	37,311,213	19,774,952	6,147,187	0	0
12/31/2009	54,367,776	.986928		36,005,149	-1,306,064	1.000000	-1,306,064	36,005,149	18,362,627	-1,412,325	0	0
12/31/2010	51,778,834	1.019868		33,622,605	-2,382,544	1.000000	-2,382,544	33,622,605	18,156,229	-206,398	0	0
12/31/2011	49,313,175	.974026		32,875,435	-747,170	1.000000	-747,170	32,875,435	16,437,740	-1,718,489	0	0
12/31/2012	46,964,929	.986667		31,733,034	-1,142,401	1.000000	-1,142,401	31,733,034	15,231,895	-1,205,846	0	0
12/31/2013	49,436,767	1.000001		33,403,160	1,670,126	1.480003	2,471,791	34,204,826	15,231,942	47	0	0
12/31/2014	47,082,636	1.020269		31,180,537	-2,222,624	1.360684	-3,024,289	31,180,537	15,902,099	670,157	0	0
12/31/2015	49,560,669	1.013245		32,392,578	1,212,041	1.530001	1,854,424	33,034,960	16,525,709	623,610	1,212,041	1,854,424
12/31/2016	52,169,125	1.013072		33,657,479	1,264,901	1.550001	1,960,599	34,995,559	17,173,567	647,858	1,264,901	1,960,599
12/31/2017	64,050,000	1.021713		40,444,375	6,786,896	1.583636	10,747,974	45,743,533	18,306,467	1,132,901	4,956,808	7,849,932
12/31/2018	64,050,000	1.047391		38,614,287	-1,830,088	1.583553	-2,898,042	42,845,491	21,204,509	2,898,042	0	0
					38,614,287	1.109576	42,845,491			21,204,509	38,614,287	42,845,491

LIFO Layer History Proof Report (Report 16a)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:27 PM**
LIFO LAYER HISTORY PROOF REPORT 16a
DECREMENT & LAYERS REMAINING AS OF 12/31/2018 CALCULATION DETAIL
Pool: 1 Chemicals and allied products(06)

LAYERS AT BASE:	12/31/1999	12/31/2013	12/31/2015	12/31/2016	12/31/2017	Increase (Decrease) At Base
12/31/1999	1,602,354					1,602,354
12/31/2000	-275,349					-275,349
12/31/2001	-95,323					-95,323
12/31/2002	-97,112					-97,112
12/31/2003	-79,960					-79,960
12/31/2004	-103,483					-103,483
12/31/2005	-45,292					-45,292
12/31/2006	-43,135					-43,135
12/31/2007	-41,081					-41,081
12/31/2008	-146,526					-146,526
12/31/2009	-23,631					-23,631
12/31/2010	-43,109					-43,109
12/31/2011	-13,519					-13,519
12/31/2012	-20,670					-20,670
12/31/2013		30,219				30,219
12/31/2014	-9,997	-30,219				-40,215
12/31/2015			21,930			21,930
12/31/2016				22,887		22,887
12/31/2017					117,157	117,157
12/31/2018					-9,087	-9,087
Layer remaining	564,167	0	21,930	22,887	108,070	717,054
						Inc(Dec)
Cum. inflator index	1.000000	1.480003	1.530001	1.550001	1.595962	in LIFO
LIFO LAYERS AT COST:						Inventory
12/31/1999	1,602,354					1,602,354
12/31/2000	-275,349					-275,349
12/31/2001	-95,323					-95,323
12/31/2002	-97,112					-97,112
12/31/2003	-79,960					-79,960
12/31/2004	-103,483					-103,483
12/31/2005	-45,292					-45,292
12/31/2006	-43,135					-43,135
12/31/2007	-41,081					-41,081
12/31/2008	-146,526					-146,526
12/31/2009	-23,631					-23,631
12/31/2010	-43,109					-43,109
12/31/2011	-13,519					-13,519
12/31/2012	-20,670					-20,670
12/31/2013		44,723				44,723
12/31/2014	-9,997	-44,723				-54,720
12/31/2015			33,553			33,553
12/31/2016				35,474		35,474
12/31/2017					186,978	186,978
12/31/2018					-14,502	-14,502
Layer remaining	564,167	0	33,553	35,474	172,476	805,670

This is a one page per pool schedule showing the detail by layer of all decrements and the detail by layer of all layers remaining. This report is a proof of the Report 16 decrement calculations.

LIFO Layer History Proof Report (Report 16a)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:27 PM**

LIFO LAYER HISTORY PROOF REPORT 16a

DECREMENT & LAYERS REMAINING AS OF 12/31/2018 CALCULATION DETAIL

Pool: 2 Metal and metal products(10)

LAYERS AT BASE:	12/31/1999	12/31/2007	12/31/2013	12/31/2015	12/31/2016	12/31/2017	Increase (Decrease) At Base
12/31/1999	36,728,106						36,728,106
12/31/2000	-6,311,376						-6,311,376
12/31/2001	-2,184,927						-2,184,927
12/31/2002	-2,225,945						-2,225,945
12/31/2003	-1,832,791						-1,832,791
12/31/2004	-2,371,960						-2,371,960
12/31/2005	-1,038,154						-1,038,154
12/31/2006	-988,712						-988,712
12/31/2007		1,040,750					1,040,750
12/31/2008	-2,671,370	-1,040,750					-3,712,120
12/31/2009	-598,679						-598,679
12/31/2010	-1,092,120						-1,092,120
12/31/2011	-342,491						-342,491
12/31/2012	-523,658						-523,658
12/31/2013			765,560				765,560
12/31/2014	-253,256		-765,560				-1,018,816
12/31/2015				555,580			555,580
12/31/2016					579,811		579,811
12/31/2017						3,138,050	3,138,050
12/31/2018						-823,336	-823,336
Layer remaining	14,292,666	0	0	555,580	579,811	2,314,714	17,742,771
							Inc(Dec)
Cum. inflator index	1.000000	1.319999	1.480003	1.530001	1.550001	1.581350	in LIFO
LIFO LAYERS AT COST:							Inventory
12/31/1999	36,728,106						36,728,106
12/31/2000	-6,311,376						-6,311,376
12/31/2001	-2,184,927						-2,184,927
12/31/2002	-2,225,945						-2,225,945
12/31/2003	-1,832,791						-1,832,791
12/31/2004	-2,371,960						-2,371,960
12/31/2005	-1,038,154						-1,038,154
12/31/2006	-988,712						-988,712
12/31/2007		1,373,788					1,373,788
12/31/2008	-2,671,370	-1,373,788					-4,045,159
12/31/2009	-598,679						-598,679
12/31/2010	-1,092,120						-1,092,120
12/31/2011	-342,491						-342,491
12/31/2012	-523,658						-523,658
12/31/2013			1,133,030				1,133,030
12/31/2014	-253,256		-1,133,030				-1,386,286
12/31/2015				850,039			850,039
12/31/2016					898,707		898,707
12/31/2017						4,962,354	4,962,354
12/31/2018						-1,301,983	-1,301,983
Layer remaining	14,292,666	0	0	850,039	898,707	3,660,372	19,701,784

LIFO Layer History Proof Report (Report 16a)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:27 PM**

LIFO LAYER HISTORY PROOF REPORT 16a

DECREMENT & LAYERS REMAINING AS OF 12/31/2018 CALCULATION DETAIL

Pool: 3 Machinery and equipment(11)

LAYERS AT BASE:	12/31/1999	12/31/2013	12/31/2015	12/31/2016	12/31/2017	Increase (Decrease) At Base
12/31/1999	42,887,800					42,887,800
12/31/2000	-7,369,860					-7,369,860
12/31/2001	-2,551,362					-2,551,362
12/31/2002	-2,599,260					-2,599,260
12/31/2003	-2,140,169					-2,140,169
12/31/2004	-2,769,763					-2,769,763
12/31/2005	-1,212,264					-1,212,264
12/31/2006	-1,154,530					-1,154,530
12/31/2007	-1,099,552					-1,099,552
12/31/2008	-2,457,791					-2,457,791
12/31/2009	-683,754					-683,754
12/31/2010	-1,247,314					-1,247,314
12/31/2011	-391,160					-391,160
12/31/2012	-598,072					-598,072
12/31/2013		874,348				874,348
12/31/2014	-289,245	-874,348				-1,163,593
12/31/2015			634,530			634,530
12/31/2016				662,204		662,204
12/31/2017					3,531,689	3,531,689
12/31/2018					-997,665	-997,665
Layer remaining	16,323,704	0	634,530	662,204	2,534,024	20,154,462
						Inc(Dec)
Cum. inflator index	1.000000	1.480003	1.530001	1.550001	1.585259	in LIFO
LIFO LAYERS AT COST:						Inventory
12/31/1999	42,887,800					42,887,800
12/31/2000	-7,369,860					-7,369,860
12/31/2001	-2,551,362					-2,551,362
12/31/2002	-2,599,260					-2,599,260
12/31/2003	-2,140,169					-2,140,169
12/31/2004	-2,769,763					-2,769,763
12/31/2005	-1,212,264					-1,212,264
12/31/2006	-1,154,530					-1,154,530
12/31/2007	-1,099,552					-1,099,552
12/31/2008	-2,457,791					-2,457,791
12/31/2009	-683,754					-683,754
12/31/2010	-1,247,314					-1,247,314
12/31/2011	-391,160					-391,160
12/31/2012	-598,072					-598,072
12/31/2013		1,294,038				1,294,038
12/31/2014	-289,245	-1,294,038				-1,583,282
12/31/2015			970,832			970,832
12/31/2016				1,026,417		1,026,417
12/31/2017					5,598,642	5,598,642
12/31/2018					-1,581,558	-1,581,558
Layer remaining	16,323,704	0	970,832	1,026,417	4,017,084	22,338,036

LIFO Inventory History Detail Report (Report 17)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:39 PM**

LIFO INVENTORY HISTORY SCHEDULE REPORT 17

Pool: 1 Chemicals and allied products(06)

	12/31/1999	12/31/2000	12/31/2001	12/31/2002	12/31/2003	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018
Current-year cost	1,602,354	1,526,051	1,453,382	1,384,173	1,318,260	1,255,486	1,195,701	1,138,763	1,084,536	1,032,891	983,706	936,863	892,251	849,762	894,487	851,892	896,729	943,925	1,158,892	1,158,892
Current yr. index	1.000000	1.149997	1.026088	1.033899	1.024590	1.056000	1.000000	1.000000	1.000000	1.159092	.986928	1.019868	.974026	.986667	1.000001	1.020269	1.013245	1.013072	1.029652	1.012672
Cumulative index	1.000000	1.149997	1.179998	1.219999	1.249999	1.319999	1.319999	1.319999	1.319999	1.530000	1.510000	1.540001	1.500001	1.480001	1.480003	1.510001	1.530001	1.550001	1.595962	1.616186
Inventory at base	1,602,354	1,327,004	1,231,682	1,134,569	1,054,609	951,127	905,835	862,700	821,619	675,092	651,461	608,352	594,833	574,163	604,382	564,167	586,097	608,983	726,140	717,054
Change at base	1,602,354	-275,349	-95,323	-97,112	-79,960	-103,483	-45,292	-43,135	-41,081	-146,526	-23,631	-43,109	-13,519	-20,670	30,219	-40,215	21,930	22,887	117,157	-9,087
Cum. inflator index	1.000000	1.149997	1.179998	1.219999	1.249999	1.319999	1.319999	1.319999	1.319999	1.530000	1.510000	1.540001	1.500001	1.480001	1.480003	1.510001	1.530001	1.550001	1.595962	1.616186
Change at LIFO cost	1,602,354	-275,349	-95,323	-97,112	-79,960	-103,483	-45,292	-43,135	-41,081	-146,526	-23,631	-43,109	-13,519	-20,670	44,723	-54,720	33,553	35,474	186,978	-14,502
LAYERS AT BASE:																				
12/31/1999	1,602,354	1,327,004	1,231,682	1,134,569	1,054,609	951,127	905,835	862,700	821,619	675,092	651,461	608,352	594,833	574,163	574,163	564,167	564,167	564,167	564,167	564,167
12/31/2000		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2001			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2002				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2003					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2004						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2005							0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2006								0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2007									0	0	0	0	0	0	0	0	0	0	0	0
12/31/2008										0	0	0	0	0	0	0	0	0	0	0
12/31/2009											0	0	0	0	0	0	0	0	0	0
12/31/2010												0	0	0	0	0	0	0	0	0
12/31/2011													0	0	0	0	0	0	0	0
12/31/2012														0	0	0	0	0	0	0
12/31/2013															30,219	0	0	0	0	0
12/31/2014																0	0	0	0	0
12/31/2015																	21,930	21,930	21,930	21,930
12/31/2016																		22,887	22,887	22,887
12/31/2017																			117,157	108,070
12/31/2018																				0
Totals	1,602,354	1,327,004	1,231,682	1,134,569	1,054,609	951,127	905,835	862,700	821,619	675,092	651,461	608,352	594,833	574,163	604,382	564,167	586,097	608,983	726,140	717,054
LIFO LAYERS AT COST:																				
12/31/1999	1,602,354	1,327,004	1,231,682	1,134,569	1,054,609	951,127	905,835	862,700	821,619	675,092	651,461	608,352	594,833	574,163	574,163	564,167	564,167	564,167	564,167	564,167
12/31/2000		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2001			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2002				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2003					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2004						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2005							0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2006								0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2007									0	0	0	0	0	0	0	0	0	0	0	0
12/31/2008										0	0	0	0	0	0	0	0	0	0	0
12/31/2009											0	0	0	0	0	0	0	0	0	0
12/31/2010												0	0	0	0	0	0	0	0	0
12/31/2011													0	0	0	0	0	0	0	0
12/31/2012														0	0	0	0	0	0	0
12/31/2013															44,723	0	0	0	0	0
12/31/2014																0	0	0	0	0
12/31/2015																	33,553	33,553	33,553	33,553
12/31/2016																		35,474	35,474	35,474
12/31/2017																			186,978	172,476
12/31/2018																				0
Totals	1,602,354	1,327,004	1,231,682	1,134,569	1,054,609	951,127	905,835	862,700	821,619	675,092	651,461	608,352	594,833	574,163	618,887	564,167	597,720	633,194	820,172	805,670
LIFO RESERVE	0	199,047	221,700	249,604	263,651	304,359	289,866	276,063	262,917	357,799	332,245	328,511	297,417	275,599	275,600	287,725	299,009	310,731	338,720	353,222
LIFO EXPENSE	0	199,047	22,654	27,904	14,047	40,708	-14,493	-13,803	-13,146	94,882	-25,554	-3,734	-31,094	-21,818	1	12,126	11,283	11,722	27,989	14,502

This is a one page per pool LIFO history for all years which includes all data contained in Report 16 & also shows the remaining balance of all layers for all years.

LIFO Inventory History Detail Report (Report 17)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:39 PM**

LIFO INVENTORY HISTORY SCHEDULE REPORT 17

Pool: 2 Metal and metal products(10)

	12/31/1999	12/31/2000	12/31/2001	12/31/2002	12/31/2003	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018
Current-year cost	36,728,106	34,979,149	33,313,475	31,727,119	30,216,304	28,777,432	27,407,078	26,101,979	27,475,768	26,167,398	24,921,331	23,734,601	22,604,382	21,527,983	22,661,035	21,581,938	22,717,829	23,913,504	29,359,510	29,359,510
Current yr. index	1.000000	1.149997	1.026088	1.033899	1.024590	1.056000	1.000000	1.000000	1.000000	1.159092	.986928	1.019868	.974026	.986667	1.000001	1.020269	1.013245	1.013072	1.020225	1.046404
Cumulative index	1.000000	1.149997	1.179998	1.219999	1.249999	1.319999	1.319999	1.319999	1.319999	1.530000	1.510000	1.540001	1.500001	1.480001	1.480003	1.510001	1.530001	1.550001	1.581350	1.654731
Inventory at base	36,728,106	30,416,730	28,231,803	26,005,858	24,173,068	21,801,108	20,762,954	19,774,242	20,814,991	17,102,871	16,504,192	15,412,072	15,069,581	14,545,923	15,311,482	14,292,666	14,848,247	15,428,058	18,566,107	17,742,771
Change at base	36,728,106	-6,311,376	-2,184,927	-2,225,945	-1,832,791	-2,371,960	-1,038,154	-988,712	1,040,750	-3,712,120	-598,679	-1,092,120	-342,491	-523,658	765,560	-1,018,816	555,580	579,811	3,138,050	-823,336
Cum. inflator index	1.000000	1.149997	1.179998	1.219999	1.249999	1.319999	1.319999	1.319999	1.319999	1.530000	1.510000	1.540001	1.500001	1.480001	1.480003	1.510001	1.530001	1.550001	1.581350	1.654731
Change at LIFO cost	36,728,106	-6,311,376	-2,184,927	-2,225,945	-1,832,791	-2,371,960	-1,038,154	-988,712	1,373,788	-4,045,159	-598,679	-1,092,120	-342,491	-523,658	1,133,030	-1,386,286	850,039	898,707	4,962,354	-1,301,983
LAYERS AT BASE:																				
12/31/1999	36,728,106	30,416,730	28,231,803	26,005,858	24,173,068	21,801,108	20,762,954	19,774,242	19,774,242	17,102,871	16,504,192	15,412,072	15,069,581	14,545,923	14,545,923	14,292,666	14,292,666	14,292,666	14,292,666	14,292,666
12/31/2000		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2001			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2002				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2003					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2004						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2005							0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2006								0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2007									1,040,750	0	0	0	0	0	0	0	0	0	0	0
12/31/2008										0	0	0	0	0	0	0	0	0	0	0
12/31/2009											0	0	0	0	0	0	0	0	0	0
12/31/2010												0	0	0	0	0	0	0	0	0
12/31/2011													0	0	0	0	0	0	0	0
12/31/2012														0	0	0	0	0	0	0
12/31/2013															765,560	0	0	0	0	0
12/31/2014																0	0	0	0	0
12/31/2015																	555,580	555,580	555,580	555,580
12/31/2016																		579,811	579,811	579,811
12/31/2017																			3,138,050	2,314,714
12/31/2018																				0
Totals	36,728,106	30,416,730	28,231,803	26,005,858	24,173,068	21,801,108	20,762,954	19,774,242	20,814,991	17,102,871	16,504,192	15,412,072	15,069,581	14,545,923	15,311,482	14,292,666	14,848,247	15,428,058	18,566,107	17,742,771
LIFO LAYERS AT COST:																				
12/31/1999	36,728,106	30,416,730	28,231,803	26,005,858	24,173,068	21,801,108	20,762,954	19,774,242	19,774,242	17,102,871	16,504,192	15,412,072	15,069,581	14,545,923	14,545,923	14,292,666	14,292,666	14,292,666	14,292,666	14,292,666
12/31/2000		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2001			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2002				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2003					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2004						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2005							0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2006								0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2007									1,373,788	0	0	0	0	0	0	0	0	0	0	0
12/31/2008										0	0	0	0	0	0	0	0	0	0	0
12/31/2009											0	0	0	0	0	0	0	0	0	0
12/31/2010												0	0	0	0	0	0	0	0	0
12/31/2011													0	0	0	0	0	0	0	0
12/31/2012														0	0	0	0	0	0	0
12/31/2013															1,133,030	0	0	0	0	0
12/31/2014																0	0	0	0	0
12/31/2015																	850,039	850,039	850,039	850,039
12/31/2016																		898,707	898,707	898,707
12/31/2017																			4,962,354	3,660,372
12/31/2018																				0
Totals	36,728,106	30,416,730	28,231,803	26,005,858	24,173,068	21,801,108	20,762,954	19,774,242	21,148,030	17,102,871	16,504,192	15,412,072	15,069,581	14,545,923	15,678,953	14,292,666	15,142,705	16,041,412	21,003,767	19,701,784
LIFO RESERVE	0	4,562,418	5,081,671	5,721,261	6,043,236	6,976,324	6,644,124	6,327,738	6,327,738	9,064,526	8,417,139	8,322,529	7,534,801	6,982,060	6,982,082	7,289,271	7,575,124	7,872,092	8,355,744	9,657,726
LIFO EXPENSE	0	4,562,418	519,253	639,589	321,976	933,088	-332,200	-316,387	0	2,736,789	-647,387	-94,610	-787,728	-552,741	22	307,189	285,853	296,968	483,651	1,301,983

LIFO Inventory History Detail Report (Report 17)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:39 PM**

LIFO INVENTORY HISTORY SCHEDULE REPORT 17

Pool: 3 Machinery and equipment(11)

	12/31/1999	12/31/2000	12/31/2001	12/31/2002	12/31/2003	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018
Current-year cost	42,887,800	40,845,523	38,900,498	37,048,094	35,283,899	33,603,713	32,003,536	30,479,558	29,028,151	29,885,876	28,462,739	27,107,370	25,816,543	24,587,184	25,881,246	24,648,806	25,946,111	27,311,696	33,531,598	33,531,598
Current yr. index	1.000000	1.149997	1.026088	1.033899	1.024590	1.056000	1.000000	1.000000	1.000000	1.159092	.986928	1.019868	.974026	.986667	1.000001	1.020269	1.013245	1.013072	1.022747	1.049501
Cumulative index	1.000000	1.149997	1.179998	1.219999	1.249999	1.319999	1.319999	1.319999	1.319999	1.530000	1.510000	1.540001	1.500001	1.480001	1.480003	1.510001	1.530001	1.550001	1.585259	1.663731
Inventory at base	42,887,800	35,517,939	32,966,577	30,367,317	28,227,148	25,457,385	24,245,122	23,090,592	21,991,040	19,533,249	18,849,495	17,602,181	17,211,021	16,612,948	17,487,297	16,323,704	16,958,234	17,620,438	21,152,127	20,154,462
Change at base	42,887,800	-7,369,860	-2,551,362	-2,599,260	-2,140,169	-2,769,763	-1,212,264	-1,154,530	-1,099,552	-2,457,791	-683,754	-1,247,314	-391,160	-598,072	874,348	-1,163,593	634,530	662,204	3,531,689	-997,665
Cum. inflator index	1.000000	1.149997	1.179998	1.219999	1.249999	1.319999	1.319999	1.319999	1.319999	1.530000	1.510000	1.540001	1.500001	1.480001	1.480003	1.510001	1.530001	1.550001	1.585259	1.663731
Change at LIFO cost	42,887,800	-7,369,860	-2,551,362	-2,599,260	-2,140,169	-2,769,763	-1,212,264	-1,154,530	-1,099,552	-2,457,791	-683,754	-1,247,314	-391,160	-598,072	1,294,038	-1,583,282	970,832	1,026,417	5,598,642	-1,581,558
LAYERS AT BASE:																				
12/31/1999	42,887,800	35,517,939	32,966,577	30,367,317	28,227,148	25,457,385	24,245,122	23,090,592	21,991,040	19,533,249	18,849,495	17,602,181	17,211,021	16,612,948	16,612,948	16,323,704	16,323,704	16,323,704	16,323,704	16,323,704
12/31/2000		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2001			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2002				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2003					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2004						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2005							0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2006								0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2007									0	0	0	0	0	0	0	0	0	0	0	0
12/31/2008										0	0	0	0	0	0	0	0	0	0	0
12/31/2009											0	0	0	0	0	0	0	0	0	0
12/31/2010												0	0	0	0	0	0	0	0	0
12/31/2011													0	0	0	0	0	0	0	0
12/31/2012														0	0	0	0	0	0	0
12/31/2013															874,348	0	0	0	0	0
12/31/2014																0	0	0	0	0
12/31/2015																	634,530	634,530	634,530	634,530
12/31/2016																		662,204	662,204	662,204
12/31/2017																			3,531,689	2,534,024
12/31/2018																				0
Totals	42,887,800	35,517,939	32,966,577	30,367,317	28,227,148	25,457,385	24,245,122	23,090,592	21,991,040	19,533,249	18,849,495	17,602,181	17,211,021	16,612,948	17,487,297	16,323,704	16,958,234	17,620,438	21,152,127	20,154,462
LIFO LAYERS AT COST:																				
12/31/1999	42,887,800	35,517,939	32,966,577	30,367,317	28,227,148	25,457,385	24,245,122	23,090,592	21,991,040	19,533,249	18,849,495	17,602,181	17,211,021	16,612,948	16,612,948	16,323,704	16,323,704	16,323,704	16,323,704	16,323,704
12/31/2000		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2001			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2002				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2003					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2004						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2005							0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2006								0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2007									0	0	0	0	0	0	0	0	0	0	0	0
12/31/2008										0	0	0	0	0	0	0	0	0	0	0
12/31/2009											0	0	0	0	0	0	0	0	0	0
12/31/2010												0	0	0	0	0	0	0	0	0
12/31/2011													0	0	0	0	0	0	0	0
12/31/2012														0	0	0	0	0	0	0
12/31/2013															1,294,038	0	0	0	0	0
12/31/2014																0	0	0	0	0
12/31/2015																	970,832	970,832	970,832	970,832
12/31/2016																		1,026,417	1,026,417	1,026,417
12/31/2017																			5,598,642	4,017,084
12/31/2018																				0
Totals	42,887,800	35,517,939	32,966,577	30,367,317	28,227,148	25,457,385	24,245,122	23,090,592	21,991,040	19,533,249	18,849,495	17,602,181	17,211,021	16,612,948	17,906,986	16,323,704	17,294,536	18,320,952	23,919,594	22,338,036
LIFO RESERVE	0	5,327,584	5,933,922	6,680,777	7,056,751	8,146,328	7,758,415	7,388,966	7,037,111	10,352,627	9,613,243	9,505,189	8,605,522	7,974,235	7,974,260	8,325,102	8,651,576	8,990,744	9,612,004	11,193,561
LIFO EXPENSE	0	5,327,584	606,337	746,855	375,974	1,089,577	-387,913	-369,448	-351,856	3,315,516	-739,383	-108,054	-899,667	-631,287	25	350,842	326,474	339,168	621,260	1,581,558

LIFO Inventory History Detail Report (Report 17)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:20:39 PM**

LIFO INVENTORY HISTORY SCHEDULE REPORT 17

All Pools Combined

	12/31/1999	12/31/2000	12/31/2001	12/31/2002	12/31/2003	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018
Current-year cost	81,218,259	77,350,723	73,667,355	70,159,386	66,818,463	63,636,631	60,606,316	57,720,301	57,588,455	57,086,165	54,367,776	51,778,834	49,313,175	46,964,929	49,436,767	47,082,636	49,560,669	52,169,125	64,050,000	64,050,000
Current yr. index		1.149997	1.026088	1.033899	1.024590	1.056000	1.000000	1.000000	1.000000	1.159092	.986928	1.019868	.974026	.986667	1.000001	1.020269	1.013245	1.013072	1.021713	1.047391
Cumulative index																				
Inventory at base	81,218,259	67,261,674	62,430,062	57,507,745	53,454,825	48,209,620	45,913,910	43,727,534	43,627,650	37,311,213	36,005,149	33,622,605	32,875,435	31,733,034	33,403,160	31,180,537	32,392,578	33,657,479	40,444,375	38,614,287
Change at base	81,218,259	-13,956,585	-4,831,612	-4,922,317	-4,052,920	-5,245,205	-2,295,710	-2,186,377	-99,883	-6,316,438	-1,306,064	-2,382,544	-747,170	-1,142,401	1,670,126	-2,222,624	1,212,041	1,264,901	6,786,896	-1,830,088
Cum. inflator index																				
Change at LIFO cost	81,218,259	-13,956,585	-4,831,612	-4,922,317	-4,052,920	-5,245,205	-2,295,710	-2,186,377	233,155	-6,649,476	-1,306,064	-2,382,544	-747,170	-1,142,401	2,471,791	-3,024,289	1,854,424	1,960,599	10,747,974	-2,898,042
LAYERS AT BASE:																				
12/31/1999	81,218,259	67,261,674	62,430,062	57,507,745	53,454,825	48,209,620	45,913,910	43,727,534	42,586,901	37,311,213	36,005,149	33,622,605	32,875,435	31,733,034	31,733,034	31,180,537	31,180,537	31,180,537	31,180,537	31,180,537
12/31/2000		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2001			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2002				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2003					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2004						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2005							0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2006								0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2007									1,040,750	0	0	0	0	0	0	0	0	0	0	0
12/31/2008										0	0	0	0	0	0	0	0	0	0	0
12/31/2009											0	0	0	0	0	0	0	0	0	0
12/31/2010												0	0	0	0	0	0	0	0	0
12/31/2011													0	0	0	0	0	0	0	0
12/31/2012														0	0	0	0	0	0	0
12/31/2013															1,670,126	0	0	0	0	0
12/31/2014																0	0	0	0	0
12/31/2015																	1,212,041	1,212,041	1,212,041	1,212,041
12/31/2016																		1,264,901	1,264,901	1,264,901
12/31/2017																			6,786,896	4,956,808
12/31/2018																				0
Totals	81,218,259	67,261,674	62,430,062	57,507,745	53,454,825	48,209,620	45,913,910	43,727,534	43,627,650	37,311,213	36,005,149	33,622,605	32,875,435	31,733,034	33,403,160	31,180,537	32,392,578	33,657,479	40,444,375	38,614,287
LIFO LAYERS AT COST:																				
12/31/1999	81,218,259	67,261,674	62,430,062	57,507,745	53,454,825	48,209,620	45,913,910	43,727,534	42,586,901	37,311,213	36,005,149	33,622,605	32,875,435	31,733,034	31,733,034	31,180,537	31,180,537	31,180,537	31,180,537	31,180,537
12/31/2000		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2001			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2002				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2003					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2004						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2005							0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2006								0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2007									1,373,788	0	0	0	0	0	0	0	0	0	0	0
12/31/2008										0	0	0	0	0	0	0	0	0	0	0
12/31/2009											0	0	0	0	0	0	0	0	0	0
12/31/2010												0	0	0	0	0	0	0	0	0
12/31/2011													0	0	0	0	0	0	0	0
12/31/2012														0	0	0	0	0	0	0
12/31/2013															2,471,791	0	0	0	0	0
12/31/2014																0	0	0	0	0
12/31/2015																	1,854,424	1,854,424	1,854,424	1,854,424
12/31/2016																		1,960,599	1,960,599	1,960,599
12/31/2017																			10,747,974	7,849,932
12/31/2018																				0
Totals	81,218,259	67,261,674	62,430,062	57,507,745	53,454,825	48,209,620	45,913,910	43,727,534	43,960,689	37,311,213	36,005,149	33,622,605	32,875,435	31,733,034	34,204,826	31,180,537	33,034,960	34,995,559	45,743,533	42,845,491
LIFO RESERVE	0	10,089,049	11,237,294	12,651,642	13,363,638	15,427,012	14,692,405	13,992,767	13,627,766	19,774,952	18,362,627	18,156,229	16,437,740	15,231,895	15,231,942	15,902,099	16,525,709	17,173,567	18,306,467	21,204,509
LIFO EXPENSE	0	10,089,049	1,148,244	1,414,348	711,997	2,063,373	-734,606	-699,638	-365,001	6,147,187	-1,412,325	-206,398	-1,718,489	-1,205,846	47	670,157	623,610	647,858	1,132,901	2,898,042

LIFO Reserve by Layer Report (Report 15)

HVAC Equip & Supplies Wholesaler **8/18/2019 2:44:38 PM**

LIFO Reserve by Layer Schedule REPORT 15

Pool: 1 Chemicals and allied products(06) Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files

PERIOD	FIFO INVENTORY	CUR. YR. DEFLATOR INDEX	CUMLTV. DEFLATOR INDEX	INVENTORY AT BASE PRICES	INC(DEC) AT BASE PRICES	CUMLTV. INFLATOR INDEX	PRICED INC(DEC)	LIFO INVENTORY	LIFO RESERVE	LIFO EXPENSE	LAYER AT BASE	LAYER AT COST	FIFO LAYER	INFLATION DIFFERENCE	LIFO RESERVE ATTRIBUTABLE TO THIS LAYER	CUMULATIVE INV. AT BASE	FIFO BALANCE REQUIRED TO ERODE THIS LAYER
12/31/1999	1,602,354	1.000000	1.000000	1,602,354	1,602,354	1.000000	1,602,354	1,602,354	0	0	564,167	564,167	911,798	.616186	347,631	564,167	911,798
12/31/2000	1,526,051	1.149997	1.149997	1,327,004	-275,349	1.000000	-275,349	1,327,004	199,047	199,047	0	0	0			564,167	
12/31/2001	1,453,382	1.026088	1.179998	1,231,682	-95,323	1.000000	-95,323	1,231,682	221,700	22,654	0	0	0			564,167	
12/31/2002	1,384,173	1.033899	1.219999	1,134,569	-97,112	1.000000	-97,112	1,134,569	249,604	27,904	0	0	0			564,167	
12/31/2003	1,318,260	1.024590	1.249999	1,054,609	-79,960	1.000000	-79,960	1,054,609	263,651	14,047	0	0	0			564,167	
12/31/2004	1,255,486	1.056000	1.319999	951,127	-103,483	1.000000	-103,483	951,127	304,359	40,708	0	0	0			564,167	
12/31/2005	1,195,701	1.000000	1.319999	905,835	-45,292	1.000000	-45,292	905,835	289,866	-14,493	0	0	0			564,167	
12/31/2006	1,138,763	1.000000	1.319999	862,700	-43,135	1.000000	-43,135	862,700	276,063	-13,803	0	0	0			564,167	
12/31/2007	1,084,536	1.000000	1.319999	821,619	-41,081	1.000000	-41,081	821,619	262,917	-13,146	0	0	0			564,167	
12/31/2008	1,032,891	1.159092	1.530000	675,092	-146,526	1.000000	-146,526	675,092	357,799	94,882	0	0	0			564,167	
12/31/2009	983,706	.986928	1.510000	651,461	-23,631	1.000000	-23,631	651,461	332,245	-25,554	0	0	0			564,167	
12/31/2010	936,863	1.019868	1.540001	608,352	-43,109	1.000000	-43,109	608,352	328,511	-3,734	0	0	0			564,167	
12/31/2011	892,251	.974026	1.500001	594,833	-13,519	1.000000	-13,519	594,833	297,417	-31,094	0	0	0			564,167	
12/31/2012	849,762	.986667	1.480001	574,163	-20,670	1.000000	-20,670	574,163	275,599	-21,818	0	0	0			564,167	
12/31/2013	894,487	1.000001	1.480003	604,382	30,219	1.480003	44,723	618,887	275,600	1	0	0	0			564,167	
12/31/2014	851,892	1.020269	1.510001	564,167	-40,215	1.360684	-54,720	564,167	287,725	12,126	0	0	0			564,167	
12/31/2015	896,729	1.013245	1.530001	586,097	21,930	1.530001	33,553	597,720	299,009	11,283	21,930	33,553	35,443	.086185	1,890	586,097	947,241
12/31/2016	943,925	1.013072	1.550001	608,983	22,887	1.550001	35,474	633,194	310,731	11,722	22,887	35,474	36,989	.066185	1,515	608,983	984,230
12/31/2017	1,158,892	1.029652	1.595962	726,140	117,157	1.595962	186,978	820,172	338,720	27,989	108,070	172,476	174,662	.020224	2,186	717,054	1,158,892
12/31/2018	1,158,892	1.012672	1.616186	717,054	-9,087	1.595962	-14,502	805,670	353,222	14,502	0	0	0			717,054	
					717,054	1.123584	805,670			353,222	717,054	805,670	1,158,892		353,222		

This report shows which years' layers the most recent year end LIFO reserve is attributable to and in what amounts along with the FIFO balance required to erode each layer. The FIFO balance shown for each year is the balance at which that layer begins to be eroded; that layer will be completely eroded (and the LIFO reserve associated with it will be removed) when the next year (following the most recently closed year end) FIFO balance is reduced to the next earliest layer remaining FIFO balance shown in the rightmost column.

LIFO Reserve by Layer Report (Report 15)

HVAC Equip & Supplies Wholesaler **8/18/2019 2:44:38 PM**

LIFO Reserve by Layer Schedule REPORT 15

Pool: 2 **Metal and metal products(10)** **Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files**

PERIOD	FIFO INVENTORY	CUR. YR. DEFLATOR INDEX	CUMLTV. DEFLATOR INDEX	INVENTORY AT BASE PRICES	INC(DEC) AT BASE PRICES	CUMLTV. INFLATOR INDEX	PRICED INC(DEC)	LIFO INVENTORY	LIFO RESERVE	LIFO EXPENSE	LAYER AT BASE	LAYER AT COST	FIFO LAYER	INFLATION DIFFERENCE	LIFO RESERVE ATTRIBUTABLE TO THIS LAYER	CUMULATIVE INV. AT BASE	FIFO BALANCE REQUIRED TO ERODE THIS LAYER
12/31/1999	36,728,106	1.000000	1.000000	36,728,106	36,728,106	1.000000	36,728,106	36,728,106	0	0	14,292,666	14,292,666	23,650,515	.654731	9,357,849	14,292,666	23,650,515
12/31/2000	34,979,149	1.149997	1.149997	30,416,730	-6,311,376	1.000000	-6,311,376	30,416,730	4,562,418	4,562,418	0	0	0			14,292,666	
12/31/2001	33,313,475	1.026088	1.179998	28,231,803	-2,184,927	1.000000	-2,184,927	28,231,803	5,081,671	519,253	0	0	0			14,292,666	
12/31/2002	31,727,119	1.033899	1.219999	26,005,858	-2,225,945	1.000000	-2,225,945	26,005,858	5,721,261	639,589	0	0	0			14,292,666	
12/31/2003	30,216,304	1.024590	1.249999	24,173,068	-1,832,791	1.000000	-1,832,791	24,173,068	6,043,236	321,976	0	0	0			14,292,666	
12/31/2004	28,777,432	1.056000	1.319999	21,801,108	-2,371,960	1.000000	-2,371,960	21,801,108	6,976,324	933,088	0	0	0			14,292,666	
12/31/2005	27,407,078	1.000000	1.319999	20,762,954	-1,038,154	1.000000	-1,038,154	20,762,954	6,644,124	-332,200	0	0	0			14,292,666	
12/31/2006	26,101,979	1.000000	1.319999	19,774,242	-988,712	1.000000	-988,712	19,774,242	6,327,738	-316,387	0	0	0			14,292,666	
12/31/2007	27,475,768	1.000000	1.319999	20,814,991	1,040,750	1.319999	1,373,788	21,148,030	6,327,738	0	0	0	0			14,292,666	
12/31/2008	26,167,398	1.159092	1.530000	17,102,871	-3,712,120	1.089717	-4,045,159	17,102,871	9,064,526	2,736,789	0	0	0			14,292,666	
12/31/2009	24,921,331	.986928	1.510000	16,504,192	-598,679	1.000000	-598,679	16,504,192	8,417,139	-647,387	0	0	0			14,292,666	
12/31/2010	23,734,601	1.019868	1.540001	15,412,072	-1,092,120	1.000000	-1,092,120	15,412,072	8,322,529	-94,610	0	0	0			14,292,666	
12/31/2011	22,604,382	.974026	1.500001	15,069,581	-342,491	1.000000	-342,491	15,069,581	7,534,801	-787,728	0	0	0			14,292,666	
12/31/2012	21,527,983	.986667	1.480001	14,545,923	-523,658	1.000000	-523,658	14,545,923	6,982,060	-552,741	0	0	0			14,292,666	
12/31/2013	22,661,035	1.000001	1.480003	15,311,482	765,560	1.480003	1,133,030	15,678,953	6,982,082	22	0	0	0			14,292,666	
12/31/2014	21,581,938	1.020269	1.510001	14,292,666	-1,018,816	1.360684	-1,386,286	14,292,666	7,289,271	307,189	0	0	0			14,292,666	
12/31/2015	22,717,829	1.013245	1.530001	14,848,247	555,580	1.530001	850,039	15,142,705	7,575,124	285,853	555,580	850,039	919,336	.124730	69,298	14,848,247	24,569,851
12/31/2016	23,913,504	1.013072	1.550001	15,428,058	579,811	1.550001	898,707	16,041,412	7,872,092	296,968	579,811	898,707	959,431	.104730	60,723	15,428,058	25,529,282
12/31/2017	29,359,510	1.020225	1.581350	18,566,107	3,138,050	1.581350	4,962,354	21,003,767	8,355,744	483,651	2,314,714	3,660,372	3,830,228	.073381	169,856	17,742,771	29,359,510
12/31/2018	29,359,510	1.046404	1.654731	17,742,771	-823,336	1.581350	-1,301,983	19,701,784	9,657,726	1,301,983	0	0	0			17,742,771	
					17,742,771	1.110412	19,701,784			9,657,726	17,742,771	19,701,784	29,359,510		9,657,726		

LIFO Reserve by Layer Report (Report 15)

HVAC Equip & Supplies Wholesaler **8/18/2019 2:44:38 PM**

LIFO Reserve by Layer Schedule REPORT 15

Pool: 3 **Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files**

PERIOD	FIFO INVENTORY	CUR. YR. DEFLATOR INDEX	CUMLTV. DEFLATOR INDEX	INVENTORY AT BASE PRICES	INC(DEC) AT BASE PRICES	CUMLTV. INFLATOR INDEX	PRICED INC(DEC)	LIFO INVENTORY	LIFO RESERVE	LIFO EXPENSE	LAYER AT BASE	LAYER AT COST	FIFO LAYER	INFLATION DIFFERENCE	LIFO RESERVE ATTRIBUTABLE TO THIS LAYER	CUMULATIVE INV. AT BASE	FIFO BALANCE REQUIRED TO ERODE THIS LAYER
12/31/1999	42,887,800	1.000000	1.000000	42,887,800	42,887,800	1.000000	42,887,800	42,887,800	0	0	16,323,704	16,323,704	27,158,247	.663731	10,834,544	16,323,704	27,158,247
12/31/2000	40,845,523	1.149997	1.149997	35,517,939	-7,369,860	1.000000	-7,369,860	35,517,939	5,327,584	5,327,584	0	0	0			16,323,704	
12/31/2001	38,900,498	1.026088	1.179998	32,966,577	-2,551,362	1.000000	-2,551,362	32,966,577	5,933,922	606,337	0	0	0			16,323,704	
12/31/2002	37,048,094	1.033899	1.219999	30,367,317	-2,599,260	1.000000	-2,599,260	30,367,317	6,680,777	746,855	0	0	0			16,323,704	
12/31/2003	35,283,899	1.024590	1.249999	28,227,148	-2,140,169	1.000000	-2,140,169	28,227,148	7,056,751	375,974	0	0	0			16,323,704	
12/31/2004	33,603,713	1.056000	1.319999	25,457,385	-2,769,763	1.000000	-2,769,763	25,457,385	8,146,328	1,089,577	0	0	0			16,323,704	
12/31/2005	32,003,536	1.000000	1.319999	24,245,122	-1,212,264	1.000000	-1,212,264	24,245,122	7,758,415	-387,913	0	0	0			16,323,704	
12/31/2006	30,479,558	1.000000	1.319999	23,090,592	-1,154,530	1.000000	-1,154,530	23,090,592	7,388,966	-369,448	0	0	0			16,323,704	
12/31/2007	29,028,151	1.000000	1.319999	21,991,040	-1,099,552	1.000000	-1,099,552	21,991,040	7,037,111	-351,856	0	0	0			16,323,704	
12/31/2008	29,885,876	1.159092	1.530000	19,533,249	-2,457,791	1.000000	-2,457,791	19,533,249	10,352,627	3,315,516	0	0	0			16,323,704	
12/31/2009	28,462,739	.986928	1.510000	18,849,495	-683,754	1.000000	-683,754	18,849,495	9,613,243	-739,383	0	0	0			16,323,704	
12/31/2010	27,107,370	1.019868	1.540001	17,602,181	-1,247,314	1.000000	-1,247,314	17,602,181	9,505,189	-108,054	0	0	0			16,323,704	
12/31/2011	25,816,543	.974026	1.500001	17,211,021	-391,160	1.000000	-391,160	17,211,021	8,605,522	-899,667	0	0	0			16,323,704	
12/31/2012	24,587,184	.986667	1.480001	16,612,948	-598,072	1.000000	-598,072	16,612,948	7,974,235	-631,287	0	0	0			16,323,704	
12/31/2013	25,881,246	1.000001	1.480003	17,487,297	874,348	1.480003	1,294,038	17,906,986	7,974,260	25	0	0	0			16,323,704	
12/31/2014	24,648,806	1.020269	1.510001	16,323,704	-1,163,593	1.360684	-1,583,282	16,323,704	8,325,102	350,842	0	0	0			16,323,704	
12/31/2015	25,946,111	1.013245	1.530001	16,958,234	634,530	1.530001	970,832	17,294,536	8,651,576	326,474	634,530	970,832	1,055,688	.133730	84,856	16,958,234	28,213,935
12/31/2016	27,311,696	1.013072	1.550001	17,620,438	662,204	1.550001	1,026,417	18,320,952	8,990,744	339,168	662,204	1,026,417	1,101,729	.113730	75,312	17,620,438	29,315,664
12/31/2017	33,531,598	1.022747	1.585259	21,152,127	3,531,689	1.585259	5,598,642	23,919,594	9,612,004	621,260	2,534,024	4,017,084	4,215,933	.078472	198,850	20,154,462	33,531,598
12/31/2018	33,531,598	1.049501	1.663731	20,154,462	-997,665	1.585259	-1,581,558	22,338,036	11,193,561	1,581,558	0	0	0			20,154,462	
					20,154,462	1.108342	22,338,036			11,193,561	20,154,462	22,338,036	33,531,598		11,193,561		

Internal Index Data Input Report (Report 3)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:28:57 PM**

DATA INPUT FOR 12/31/2018 LIFO CALCULATIONS **LIFO-PRO Report 3**

DATA FILE NAME:Y:\LIFOPRO1\Sample_HVAC_Wholesaler\LPSW_Data_Files\Sample_HVAC_DIS_2018YE.prn

----------POOL----------		C/Y COST	C/Y COST	INDEX	INDEX	LIFO	LIFO	LIFO		LIFO Expense (Inc.) Components		
NO	NAME	12/31/2017	12/31/2018	12/31/2017	12/31/2018	EXPENSE	RESERVE	INVENTORY		Inflation Effect	Layer Erosion Effect	Total LIFO Expense
1	Chemicals and allied products(0(	1,158,892	1,500,000	1.029652	1.012672	14,686	353,406	1,146,594		14,686		14,686
2	Metal and metal products(10)	29,359,510	30,000,000	1.020225	1.046404	1,330,386	9,686,129	20,313,871	E	1,362,400	-32,014	1,330,386
3	Machinery and equipment(11)	33,531,598	34,000,000	1.022747	1.049501	1,603,650	11,215,654	22,784,346	E	1,659,846	-56,196	1,603,650
	TOTALS OR WTD AVG	64,050,000	65,500,000	1.021713	1.047209	2,948,722	21,255,189	44,244,811		3,036,932	-88,210	2,948,722
	E-Layer erosion occurs for this pool.											

This report is primarily used for companies using internal indexes as it serves as the data input screen (Screen 3) for entering the front-end software input values required to complete the LIFO calculation. The blue-shaded fields are the front-end input values are entered by software users and serves as a source document for the variables used to complete the back-end of the LIFO calculation. This report automatically updates the LIFO expense, reserve, inventory & expense/income component fields shown to the right of the current period index columns after the blue-shaded input value fields have been entered. This report & screen is also used for external index users wishing to perform interim estimates using current period inventory balances, a user-defined BLS index period range & the product mix used for the last period closed (prior period).

IPIC LIFO Calculation Summary Report (Report 23S)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:19:52 PM**
SUMMARY OF IPIC LIFO INDEX CALCULATIONS BY POOL SUMMARY REPORT 23S
FOR PERIOD ENDED Dec, 2018

----------POOL---------- NO.	NAME	CURRENT YEAR COST	Cumulative Index 12/31/2017	Cumulative Index 12/31/2018	Current Year Index 12/31/2018	LIFO EXPENSE	LIFO INVENTORY	LIFO RESERVE
1	Chemicals and allied products(06)	1,158,892	1.595962	1.616186	1.012672	14,502	805,670	353,222
2	Metal and metal products(10)	29,359,510	1.581350	1.654731	1.046404	1,301,983	19,701,784	9,657,726
3	Machinery and equipment(11)	33,531,598	1.585259	1.663731	1.049501	1,581,558	22,338,037	11,193,561
	Total/Averages	64,050,000			1.047391	2,898,042	42,845,491	21,204,509

Inflation rates are Nov 2018 PPI Prelim indexes divided by Nov 2017 Prelim indexes as shown on Report 24
IPIC data file used for calculations:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\DIS\Sample_HVAC_DIS_2018YE.xlsx-DIS2018Book
There were missing indexes for 6 categories. Indexes used were those for the next less detailed category.

Optional IPIC Methods used:
10% Method used(BLS Weights used)?: 10% Method not used
U.S. Bureau of Labor Statistics inflation indexes source: PPI Detailed Reports Table 9

This is a summary report by pool and in total showing the IPIC method pool indexes for the current year as well as the prior and current year cumulative indexes, FIFO and LIFO inventory balances, LIFO reserve, and LIFO expense.

IPIC LIFO Index Calculation Report (Report 23)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:19:52 PM**
DETAIL OF IPIC LIFO INDEX CALCULATIONS BY POOL REPORT 23
FOR PERIOD ENDED Dec, 2018

----------PPI CATEGORY---------- ---------- NAME ----------	CATEGORY NUMBER	YEAR-END INVENTORY BALANCE	% OF POOL INV.	CATEGORY INDEX FROM REPORT 24	HARMONIC DOLLARS WEIGHTED QUOTIENT	
POOL NUMBER:1 Chemicals and allied products(06)						
-Other chemicals and allied products	067	350,315	30.23%	1.024512	341,934	
---Industrial gases	067903	575,770	49.68%	.996038	578,060	
---Adhesives and sealants	067904	150,364	12.97%	1.036657	145,047	
---Other miscellaneous chemical products	067909	63,272	5.46%	1.038980	60,898	
-----Salt, evaporated and solar	06790904	19,170	1.65%	1.038980	18,451	><
Pool 1 Totals/Weighted average pool index		1,158,892	100.00%	1.012672	1,144,391	
				Pool index		
POOL NUMBER:2 Metal and metal products(10)						
---Pressure and soil pipe & fittings, cast iron	101502	153,856	0.52%	1.042427	147,594	
-----Copper and copper alloy pipe and tube	10250239	1,132,817	3.86%	.907574	1,248,181	
---Other nonferrous mill shapes	102519	16,720	0.06%	1.078799	15,499	
--Nonferrous wire and cable	1026	122,461	0.42%	1.018337	120,256	
--Hand and edge tools	1042	202,444	0.69%	1.024401	197,622	
-Plumbing fixtures and fittings	105	1,411,370	4.81%	1.048271	1,346,380	
--Vitreous china plumbing fixtures and china & earthenware bathroom accessori	1052^	100,387	0.34%	1.048271	95,764	><
--Plumbing fixture fittings and trim	1054	22,637	0.08%	1.064293	21,270	
---Plumbing fixtures, fittings, and trim	105402	148,960	0.51%	1.063984	140,002	
-----Bath and shower fittings	10540211	708,628	2.41%	1.092474	648,645	
-----Lavatory and sink fittings	10540218	2,083,604	7.10%	1.064944	1,956,539	
-----Miscellaneous plumbing fixtures, fittings, and trim	10540223	646,742	2.20%	1.031849	626,779	
--Enameled iron & metal sanitary ware	1056^	34,536	0.12%	1.020751	33,834	
-Heating equipment	106	235,298	0.80%	1.051024	223,875	
--Steam and hot water equipment	1061	4,373,695	14.90%	1.042644	4,194,812	
--Furnaces and heaters, including parts	1062	4,074,192	13.88%	1.052391	3,871,369	
--Other heating equipment, non-electric, including parts	1063^	3,460,332	11.79%	1.036280	3,339,186	
--Domestic water heaters	1066	4,377,407	14.91%	1.080717	4,050,463	
---Metal doors and frames (except storm)	107102^	46,981	0.16%	1.069291	43,937	
--Metal tanks	1072	414,588	1.41%	1.099944	376,917	
--Sheet metal products	1073	394,594	1.34%	1.068695	369,230	
-----Sheet metal air-conditioning ducts and stove pipe	10730120	2,231,638	7.60%	1.006849	2,216,457	
----Other sheet metal work	107301G					
-----Sheet metal roof ventilators, louvers, & dampers for heating, ventilation, anc	107301G1	160,380	0.55%	1.056568	151,793	><
---Ornamental and architectural metal work	107408					
-----Metal grilles, registers and air diffusers	10740811	556,509	1.90%	1.147114	485,139	><
---Fabricated metal pipe, tube, and fittings	107411^	1,896,199	6.46%	1.046351	1,812,201	
--Fabricated steel plate	1076^	53,318	0.18%	1.018946	52,327	
--Bolts, nuts, screws, rivets, and washers	1081	19,056	0.06%	1.043796	18,256	
---Steel nails, staples, tacks, spikes and brads	108812^	31,425	0.11%	1.139934	27,568	
-----Other fabricated metal products	10890589	248,735	0.85%	1.102318	225,647	
Pool 2 Totals/Weighted average pool index		29,359,510	100.00%	1.046404	28,057,542	
				Pool index		
POOL NUMBER:3 Machinery and equipment(11)						
--Finished lubricants	0576	26,155	0.08%	1.090909	23,976	
--Miscellaneous rubber products	0713	142,580	0.43%	1.018154	140,038	
---Rubber and plastics hose	071304	15,299	0.05%	1.040000	14,711	
---Plastic construction products	072106	82,374	0.25%	1.004398	82,013	
-----Plastics pipe	07210603	984,362	2.94%	.934711	1,053,119	
-----Plastics pipe fittings and unions	07210604	1,367,790	4.08%	1.062500	1,287,331	
-----Plastics plumbing fixtures	07210605	474,115	1.41%	1.031967	459,428	
-----Other plastic construction products	07210606	55,509	0.17%	1.028860	53,952	
--Consumer, institutional, and commercial products, n.e.c.	072B	48,750	0.15%	1.033358	47,176	
---General millwork	082101					

IPIC LIFO Index Calculation Report (Report 23)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:19:52 PM**
DETAIL OF IPIC LIFO INDEX CALCULATIONS BY POOL REPORT 23
FOR PERIOD ENDED Dec, 2018

----------PPI CATEGORY---------- ---------- NAME ----------	CATEGORY NUMBER	YEAR-END INVENTORY BALANCE	% OF POOL INV.	CATEGORY INDEX FROM REPORT 24	HARMONIC DOLLARS WEIGHTED QUOTIENT	
-----Stock wood kitchen cabinets, related cabinetwork and countertops	08210102	31,925	0.10%	1.018061	31,359	
-----Stock wood bathroom vanities and related bathroom cabinetwork including t	08210104	15,219	0.05%	1.034736	14,708	><
--Pressure-sensitive products	0916^	170,425	0.51%	1.062637	160,379	
--Power-driven handtools, including parts and attachments	1132	975,047	2.91%	1.018562	957,279	
--Pumps, compressors, and equipment	1141	1,468,093	4.38%	1.039670	1,412,076	
--Air purification equipment and industrial and commercial fans and blowers	1147	5,063	0.02%	1.044837	4,845	
---Fan, blower, air purification equipment	114701	42,568	0.13%	1.044837	40,742	
------Air filters for air-conditioners and furnaces, etc., of 2400 CFM or less, except	114701431	387,479	1.16%	1.053571	367,776	
-----Industrial and commercial fans and blowers	11470145	108,775	0.32%	1.067259	101,920	
--Air conditioning and refrigeration equip	1148	7,133,207	21.27%	1.052348	6,778,376	
---Unitary air-conditioners, except air source heat pumps	114802^	207,085	0.62%	1.069412	193,644	
---All other miscellaneous refrigeration and air-conditioning equipment	114806^	99,843	0.30%	.994318	100,413	
---Heat transfer equipment, including heat pumps	114807	10,340,642	30.84%	1.064982	9,709,688	
-----Heat pumps	11480734	415,113	1.24%	1.064457	389,976	
---Parts and accessories for air conditioning and heat transfer equipment	114809^	646,683	1.93%	1.041618	620,845	
--Miscellaneous general purpose equipment	1149	274,418	0.82%	1.038362	264,280	
---Metal valves, except fluid power	114902	1,022,757	3.05%	1.055783	968,719	
-----Industrial ball valves, incl. manual and power operated	11490202	28,248	0.08%	1.078117	26,201	
-----Industrial plug valves	11490204	14,062	0.04%	1.031788	13,629	
-----Automatic regulating and control valves	11490211	29,663	0.09%	1.063818	27,883	
---Metal pipe fittings, flanges, and unions	114903^	1,886,437	5.63%	1.056138	1,786,165	
---Filters and strainers	114908	118,651	0.35%	1.013300	117,093	
--Service industry machinery and parts	1168	122,061	0.36%	1.017298	119,986	
-Electrical machinery and equipment	117	21,731	0.06%	1.019417	21,317	
--Motors, generators, motor generator sets	1173	231,138	0.69%	1.038334	222,604	
-Miscellaneous instruments	118	413,048	1.23%	1.017553	405,923	
--Automatic environmental controls for monitoring residential, commercial, and	1181^	2,856,794	8.52%	1.050000	2,720,756	
---Household refrigeration equipment	124103					
-----Parts and attachments for household refrigerators and freezers	12410339	9,727	0.03%	1.004069	9,688	><
---Other major household appliances including room air-conditioners	124104	194,845	0.58%	1.004431	193,985	
--Insulation materials	1392	988,089	2.95%	1.060190	931,992	
--Cut stone and stone products	1395	44,068	0.13%	1.035779	42,546	
-----Other motor vehicle parts	14120508	13,131	0.04%	.996310	13,180	
--Medical and surgical appliances and supplies	1563	18,630	0.06%	1.016224	18,332	
Pool 3 Totals/Weighted average pool index		33,531,598	100.00%	1.049501 Pool index	31,950,050	
GRAND TOTAL INVENTORY DOLLARS		64,050,000				

Inflation rates are Nov 2018 PPI Prelim indexes divided by Nov 2017 Prelim indexes as shown on Report 24.
IPIC data file used for calculations:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\DIS\Sample_HVAC_DIS_2018YE.xlsx-DIS2018Book

>< No index published for this category. Indexes(this year & last) for the next less detailed category containing this category were used.
^This category subsumes a more detailed PPI category but it is not listed because there is a single such category and
the inflation rate is identical to this category's and no $s were assigned to it.

Company data folder= Y:\LIFOPRO1\Sample_HVAC_Wholesaler\LPSW_Data_Files\
LIFO-PRO software version used: 18Aug2019. Program file path= C:\SmallVersionWithFSO-Net-121718
BLS folder= C:\SmallVersionWithFSO-Net-121718\bls\

This shows the details of the pool index calculations using Harmonic Mean Weighting specified in the IRS Regulations.

IPIC LIFO Index by PPI Code Report (Report 24)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:19:52 PM**
DETAIL OF IPIC LIFO INFLATION INDEXES REPORT 24
FOR PERIOD ENDED Dec, 2018

----------PPI CATEGORY---------- ---------- NAME ----------	CATEGORY NUMBER	Prelim --BLS INDEXES-- Nov 2018	Prelim --BLS INDEXES-- Nov 2017	CUR YEAR INFLATION INDEX To Report 23	
POOL NUMBER:1 Chemicals and allied products(06)					
-Other chemicals and allied products	067	204.8	199.9	1.024512	INDEX USED
---Industrial gases	067903	251.4	252.4	.996038	INDEX USED
---Adhesives and sealants	067904	263.0	253.7	1.036657	INDEX USED
---Other miscellaneous chemical products	067909	215.9	207.8	1.038980	INDEX USED
-----Salt, evaporated and solar	06790904	215.9	207.8	1.038980	INDEX USED(067909) TP
POOL NUMBER:2 Metal and metal products(10)					
---Pressure and soil pipe & fittings, cast iron	101502	405.4	388.9	1.042427	INDEX USED
-----Copper and copper alloy pipe and tube	10250239	201.3	221.8	.907574	INDEX USED
---Other nonferrous mill shapes	102519	230.0	213.2	1.078799	INDEX USED
--Nonferrous wire and cable	1026	249.9	245.4	1.018337	INDEX USED
--Hand and edge tools	1042	239.3	233.6	1.024401	INDEX USED
-Plumbing fixtures and fittings	105	275.8	263.1	1.048271	INDEX USED
--Vitreous china plumbing fixtures and china & earthenware bathroom accessor	1052^	275.8	263.1	1.048271	INDEX USED(105) TP
--Plumbing fixture fittings and trim	1054	322.8	303.3	1.064293	INDEX USED
---Plumbing fixtures, fittings, and trim	105402	322.6	303.2	1.063984	INDEX USED
-----Bath and shower fittings	10540211	272.9	249.8	1.092474	INDEX USED
-----Lavatory and sink fittings	10540218	160.7	150.9	1.064944	INDEX USED
-----Miscellaneous plumbing fixtures, fittings, and trim	10540223	317.5	307.7	1.031849	INDEX USED
--Enameled iron & metal sanitary ware	1056^	231.2	226.5	1.020751	INDEX USED
-Heating equipment	106	271.9	258.7	1.051024	INDEX USED
--Steam and hot water equipment	1061	293.4	281.4	1.042644	INDEX USED
--Furnaces and heaters, including parts	1062	206.9	196.6	1.052391	INDEX USED
--Other heating equipment, non-electric, including parts	1063^	248.5	239.8	1.036280	INDEX USED
--Domestic water heaters	1066	409.7	379.1	1.080717	INDEX USED
---Metal doors and frames (except storm)	107102^	260.8	243.9	1.069291	INDEX USED
--Metal tanks	1072	197.0	179.1	1.099944	INDEX USED
--Sheet metal products	1073	217.8	203.8	1.068695	INDEX USED
-----Sheet metal air-conditioning ducts and stove pipe	10730120	176.4	175.2	1.006849	INDEX USED
----Other sheet metal work	107301G	110.2	104.3	1.056568	
-----Sheet metal roof ventilators, louvers, & dampers for heating, ventilation, an	107301G1	110.2	104.3	1.056568	INDEX USED(107301G) T
---Ornamental and architectural metal work	107408	308.0	268.5	1.147114	
-----Metal grilles, registers and air diffusers	10740811	308.0	268.5	1.147114	INDEX USED(107408) TP
---Fabricated metal pipe, tube, and fittings	107411^	106.1	101.4	1.046351	INDEX USED
--Fabricated steel plate	1076^	220.5	216.4	1.018946	INDEX USED
--Bolts, nuts, screws, rivets, and washers	1081	200.2	191.8	1.043796	INDEX USED
---Steel nails, staples, tacks, spikes and brads	108812^	172.7	151.5	1.139934	INDEX USED
-----Other fabricated metal products	10890589	195.0	176.9	1.102318	INDEX USED
POOL NUMBER:3 Machinery and equipment(11)					
--Finished lubricants	0576	428.4	392.7	1.090909	INDEX USED
--Miscellaneous rubber products	0713	201.9	198.3	1.018154	INDEX USED
---Rubber and plastics hose	071304	252.2	242.5	1.040000	INDEX USED
---Plastic construction products	072106	228.4	227.4	1.004398	INDEX USED
-----Plastics pipe	07210603	113.1	121.0	.934711	INDEX USED
-----Plastics pipe fittings and unions	07210604	168.3	158.4	1.062500	INDEX USED
-----Plastics plumbing fixtures	07210605	125.9	122.0	1.031967	INDEX USED
-----Other plastic construction products	07210606	213.9	207.9	1.028860	INDEX USED

IPIC LIFO Index by PPI Code Report (Report 24)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:19:52 PM**
DETAIL OF IPIC LIFO INFLATION INDEXES REPORT 24
FOR PERIOD ENDED Dec, 2018

----------PPI CATEGORY---------- ---------- NAME ----------	CATEGORY NUMBER	Prelim --BLS INDEXES-- Nov 2018	Prelim --BLS INDEXES-- Nov 2017	CUR YEAR INFLATION INDEX To Report 23	
--Consumer, institutional, and commercial products, n.e.c.	072B	139.4	134.9	1.033358	INDEX USED
---General millwork	082101	253.2	244.7	1.034736	
-----Stock wood kitchen cabinets, related cabinetwork and countertops	08210102	107.1	105.2	1.018061	INDEX USED
-----Stock wood bathroom vanities and related bathroom cabinetwork including	08210104	253.2	244.7	1.034736	INDEX USED(082101) P
--Pressure-sensitive products	0916^	193.4	182.0	1.062637	INDEX USED
--Power-driven handtools, including parts and attachments	1132	175.6	172.4	1.018562	INDEX USED
--Pumps, compressors, and equipment	1141	264.7	254.6	1.039670	INDEX USED
--Air purification equipment and industrial and commercial fans and blowers	1147	230.7	220.8	1.044837	INDEX USED
---Fan, blower, air purification equipment	114701	230.7	220.8	1.044837	INDEX USED
------Air filters for air-conditioners and furnaces, etc., of 2400 CFM or less, excep	114701431	118.0	112.0	1.053571	INDEX USED
-----Industrial and commercial fans and blowers	11470145	168.2	157.6	1.067259	INDEX USED
--Air conditioning and refrigeration equip	1148	195.0	185.3	1.052348	INDEX USED
---Unitary air-conditioners, except air source heat pumps	114802^	181.8	170.0	1.069412	INDEX USED
---All other miscellaneous refrigeration and air-conditioning equipment	114806^	210.0	211.2	.994318	INDEX USED
---Heat transfer equipment, including heat pumps	114807	118.0	110.8	1.064982	INDEX USED
-----Heat pumps	11480734	115.6	108.6	1.064457	INDEX USED
---Parts and accessories for air conditioning and heat transfer equipment	114809^	180.2	173.0	1.041618	INDEX USED
--Miscellaneous general purpose equipment	1149	281.5	271.1	1.038362	INDEX USED
---Metal valves, except fluid power	114902	335.0	317.3	1.055783	INDEX USED
-----Industrial ball valves, incl. manual and power operated	11490202	437.5	405.8	1.078117	INDEX USED
-----Industrial plug valves	11490204	233.7	226.5	1.031788	INDEX USED
-----Automatic regulating and control valves	11490211	191.7	180.2	1.063818	INDEX USED
---Metal pipe fittings, flanges, and unions	114903^	312.3	295.7	1.056138	INDEX USED
---Filters and strainers	114908	243.8	240.6	1.013300	INDEX USED
--Service industry machinery and parts	1168	247.0	242.8	1.017298	INDEX USED
-Electrical machinery and equipment	117	115.5	113.3	1.019417	INDEX USED
--Motors, generators, motor generator sets	1173	219.4	211.3	1.038334	INDEX USED
-Miscellaneous instruments	118	202.9	199.4	1.017553	INDEX USED
--Automatic environmental controls for monitoring residential, commercial, and	1181^	178.5	170.0	1.050000	INDEX USED
---Household refrigeration equipment	124103	98.7	98.3	1.004069	
-----Parts and attachments for household refrigerators and freezers	12410339	98.7	98.3	1.004069	INDEX USED(124103) TP
---Other major household appliances including room air-conditioners	124104	136.0	135.4	1.004431	INDEX USED
--Insulation materials	1392	200.8	189.4	1.060190	INDEX USED
--Cut stone and stone products	1395	170.8	164.9	1.035779	INDEX USED
-----Other motor vehicle parts	14120508	108.0	108.4	.996310	INDEX USED
--Medical and surgical appliances and supplies	1563	206.7	203.4	1.016224	INDEX USED

IPIC data file used for calculations:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\DIS\Sample_HVAC_DIS_2018YE.xlsx-DIS2018Book
No index published for categories above with PPI Code in parenthesis in rightmost column. Indexes(this year & last)
for the next less detailed category(indicated in parenthesis) containing this category were used. The letter T in the
rightmost column indicates this year's index was missing and the letter P indicates the prior year's index was missing.
^This category subsumes a more detailed PPI category but it is not listed because there is a single such category and
the inflation rate is identical to this category's and no $s were assigned to it.

This report shows the current and prior year inflation indexes and calculation of current year inflation index for all PPI categories.

Replaced & Discontinued PPI Codes Report (Report 25)

HVAC Parent **9/23/2019 6:05:39 PM**
PPI CATEGORY REASSIGNMENTS REQUIRED FOR DISCONTINUED & RECODED CATEGORIES REPORT 25
FOR PERIOD ENDED DEC, 2018

----------REPLACEMENT PPI CATEGORY---------- NAME----------	BLS CAT NUMBER	----------REPLACED(DISCONTINUED) PPI CATEGORY---------- NAME----------	BLS CAT NUMBER	DATE DISCON'D	FIFO $S ASSIGNED
Furnaces and heaters, including parts	106201	Warm air furnaces, humidifiers, & elect. comfort eq.	10620132	6/1999	31,925
Other heating equipment, non-electric, including parts	10630161	Gas burners over 400 mbh	10630116	6/1999	46,981
Domestic heating stoves	10640141	Wood/coal stoves, air tight	10640126	6/1999	18,630
Unitary air-conditioners, except air source heat pumps	11480222	Ground and ground water source heat pump	11480223	12/2004	9,727
All other miscellaneous refrigeration and air-conditioning equipment	11480631	Icemaking machines	11480603	6/1997	19,056
All other miscellaneous refrigeration and air-conditioning equipment	11480631	Liquid chiller, centrifugal and reciprocating	11480623	12/2001	16,720
Heat transfer equipment, except dehumidifiers	11480732	Finned coils, all types	11480117	6/1997	31,425
Refrigerant compressors, except automotive	114808	Refrigerant compressors	114804	12/2011	44,068

The PPI category replacements listed above were made on Reports 23 & 24. The categories subject to replacement on those reports have the @ symbol suffix in their PPI code. FIFO balances should not be assigned to the discontinued categories in the future.

Categories discontinued but no reassignment made because there is more than one PPI category that could be used in its place:
Manual reassignment of category(s) are required for these on the Excel input schedule listing FIFO balances by PPI category

Cast iron heating boilers, radiators and convectors	10610106	Oil heating boilers	10610103	6/1999	142,580
Steel heating boilers (15 psi or less) and all hot water heating boilers (except parts)	10610112	Oil heating boilers	10610103	6/1999	

The categories below were recoded by the BLS on the date shown below. The prior periods' index history is retained for a recoded category; a new commodity code is assigned to a category that already exists.

Heat pumps	11480734	Heat pumps	11480134	12/2011	29,663

This report shows the PPI categories assigned to inventory balances on the Excel input schedule which have been discontinued or recoded. Separate sections are printed for: 1) Categories that replacements were automatically made by the LIFO-PRO software 2) Categories that replacements will be made for future periods based on when the categories were discontinued.

IPIC 5% Method Proof Report (Report 26)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:19:52 PM**
IPIC POOLING METHOD EXCEPTION REPORT **REPORT 26**
FOR PERIOD ENDED DEC, 2018

CURRENT-YEAR COST FOR EXISTING LIFO POOLS:		Inventory	% of
NO	PPI 2-DIGIT CODES	Balance	Total
1	Chemicals and allied products(06)	1,158,892	1.8%
2	Metal and metal products(10)	29,359,510	45.8%
3	Machinery and equipment(11)	33,531,598	52.4%
	Total	64,050,000	100.0%

CURRENT-YEAR COST FOR EACH PPI 2-DIGIT CODES:		Inventory	% of
NO	PPI 2-DIGIT CODES	Balance	Total
1	Farm products(01)	0	
2	Processed food(02)	0	
3	Textile products & apparel(03)	0	
4	Leather products(04)	0	
5	Fuels(05)	26,155	.0%
6	Chemical & allied products(06)	1,158,892	1.8%
7	Rubber & plastic products(07)	3,170,778	5.0%
8	Lumber & wood products(08)	47,144	.1%
9	Paper products(09)	170,425	.3%
10	Metal & metal products(10)	29,359,510	45.8%
11	Machinery & equipment(11)	28,848,604	45.0%
12	Furniture & household durables(12)	204,572	.3%
13	Nonmetallic mineral products(13)	1,032,157	1.6%
14	Transportation equipment(14)	13,131	.0%
15	Miscellaneous products(15)	18,630	.0%
	Total	64,050,000	100.0%

LIFO POOLS FOR EACH PPI 2-DIGIT CODE WITH > 5% OF TOTAL CURRENT-YEAR COST:			
		Inventory	% of
NO	PPI 2-DIGIT CODES	Balance	Total
1	Metal & metal products(10)	29,359,510	45.8%
2	Machinery & equipment(11)	28,848,604	45.0%
3	All other(< 5%) pool	5,841,885	9.1%
	Total	64,050,000	100.0%

Shows which of the 8 CPI or 15 PPI BLS Major Category or Commodity Groups are to be LIFO pools based on inclusion of 5% or more of total inventory per IRS Reg. Sec. 1.472-8(c)(2) for establishing pools.

Consolidated Reports for Multiple/Separate Entities or Locations (Report 18c)

COMBINED REPORT 18
ACTUAL YEAR-END LIFO CALCULATION SUMMARY REPORT 18c 8/18/2019 1:30:47 PM
COMPANY TOTALS ONLY

COMPANY NAME	CURRENT YEAR COST	CURRENT DEFLATOR INDEX	LIFO INVENTORY	THIS YEAR LIFO RESERVE	PRIOR YEAR LIFO RESERVE	LIFO EXPENSE
HVAC Parent 12/31/2017	61,000,000	1.023087	59,864,817	1,135,183	891,764	243,419
HVAC Subsidiary A 12/31/2017	4,091,432	1.031458	2,641,440	1,449,992	1,340,578	109,414
HVAC Subsidiary B 12/31/2017	1,756,682	1.073339	531,734	1,224,948	1,110,033	114,915
HVAC Subsidiary C 12/31/2017	3,321,441	1.017308	2,467,432	854,009	806,867	47,142
HVAC Subsidiary D 12/31/2017	6,405,601	1.025270	4,625,974	1,779,627	1,645,986	133,641
HVAC Subsidiary E 12/31/2017	25,098,631	1.013635	11,023,628	14,075,003	13,743,880	331,123
HVAC Subsidiary F 12/31/2017	7,360,760	1.015929	2,858,364	4,502,396	4,392,906	109,490
Grand total	109,034,547	1.021441	84,013,389	25,021,158	23,932,014	1,089,144

Consolidated Reports for Multiple/Separate Entities or Locations – Used for the following:
1. Companies needing to combine the results of separate LIFO calculations made for multiple entities or locations for financial statement or tax purposes
2. Companies needing to combine the results of separate financial reporting (book) & tax LIFO calculations in order to compute deferred tax asset/liability balances and/or schedule M items

Consolidated Reports for Multiple/Separate Entities or Locations (Report 18c)

COMBINED REPORT 18
ACTUAL YEAR-END LIFO CALCULATION SUMMARY REPORT 18c 8/18/2019 1:30:47 PM
POOL DETAIL

POOL NO.	POOL NAME	CURRENT YEAR COST	CURRENT DEFLATOR INDEX	CUMLTV DEFLATOR INDEX	CUMLTV INFLATOR INDEX	LIFO INVENTORY	THIS YEAR LIFO RESERVE	PRIOR YEAR LIFO RESERVE	LIFO EXPENSE
HVAC Parent 12/31/2017 Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files\Consolidated\HVAC Parent\									
1	Chemicals and allied products(06	1,103,707	1.012496	1.569370	1.569370	1,031,762	71,944	62,855	9,089
2	Metal and metal products(10)	27,961,438	1.020349	1.581542	1.581542	27,694,342	267,096	216,188	50,908
3	Machinery and equipment(11)	31,934,855	1.025869	1.590098	1.590098	31,138,712	796,143	612,721	183,422
	Totals/avg.	61,000,000	1.023087			59,864,817	1,135,183	891,764	243,419
HVAC Subsidiary A 12/31/2017 Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files\Consolidated\HVAC Subsidiary A\									
1	All Inventories	4,091,432	1.031458	1.468385	1.468385	2,641,440	1,449,992	1,340,578	109,414
	Totals/avg.	4,091,432	1.031458			2,641,440	1,449,992	1,340,578	109,414
HVAC Subsidiary B 12/31/2017 Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files\Consolidated\HVAC Subsidiary B\									
1	All Inventories	1,756,682	1.073339	1.466108	1.466108	531,734	1,224,948	1,110,033	114,915
	Totals/avg.	1,756,682	1.073339			531,734	1,224,948	1,110,033	114,915
HVAC Subsidiary C 12/31/2017 Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files\Consolidated\HVAC Subsidiary C\									
1	All Inventories	3,321,441	1.017308	1.430840	1.430840	2,467,432	854,009	806,867	47,142
	Totals/avg.	3,321,441	1.017308			2,467,432	854,009	806,867	47,142
HVAC Subsidiary D 12/31/2017 Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files\Consolidated\HVAC Subsidiary D\									
1	All Inventories	6,405,601	1.025270	1.378300	1.378300	4,625,974	1,779,627	1,645,986	133,641
	Totals/avg.	6,405,601	1.025270			4,625,974	1,779,627	1,645,986	133,641
HVAC Subsidiary E 12/31/2017 Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files\Consolidated\HVAC Subsidiary E\									
1	All Inventories	25,098,631	1.013635	1.464229	1.464229	11,023,628	14,075,003	13,743,880	331,123
	Totals/avg.	25,098,631	1.013635			11,023,628	14,075,003	13,743,880	331,123
HVAC Subsidiary F 12/31/2017 Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files\Consolidated\HVAC Subsidiary F\									
1	All Inventories	7,360,760	1.015929	1.465969	1.465969	2,858,364	4,502,396	4,392,906	109,490
	Totals/avg.	7,360,760	1.015929			2,858,364	4,502,396	4,392,906	109,490
	Grand total	109,034,547	1.021441			84,013,389	25,021,158	23,932,014	1,089,144

This is the pool detail version of the Consolidated Report 18c. As seen above, results are presented by LIFO pool for each entity, but are also summarized on the last row of the report.

LIFO Projections Report (Report 1)

HVAC Equip & Supplies Wholesaler **8/18/2019 1:25:10 PM**
LIFO PROJECTION REPORT FOR RANGE OF FIFO INVENTORY VALUES & INDEXES REPORT 1
PROJECTION FOR:12/31/2019 For Pool 1 Chemicals and allied products(06)

CURRENT-YEAR	----------LIFO EXPENSE (INCOME) USING INDEXES ON FOLLOWING ROW----------														
COST VALUES	.97	.98	.99	1.00	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.09	1.10	1.11
800,000	-63,524	-58,316	-53,214	-48,214	-43,314	-38,509	-33,797	-29,176	-24,643	-20,196	-15,832	-11,548	-7,344	-3,215	839
850,000	-45,417	-39,885	-34,464	-29,152	-23,944	-18,839	-13,833	-8,923	-4,107	618	5,255	9,806	14,274	18,660	22,968
900,000	-32,570	-23,607	-15,713	-10,089	-4,575	830	6,131	11,329	16,429	21,432	26,342	31,161	35,891	40,536	45,096
950,000	-31,766	-22,181	-12,790	-3,587	5,351	14,081	22,641	31,037	36,965	42,246	47,429	52,515	57,509	62,411	67,225
1,000,000	-32,529	-22,141	-11,963	-1,988	7,789	17,265	26,394	35,347	44,129	52,698	61,045	69,237	77,279	84,287	89,354
1,050,000	-33,431	-22,523	-11,836	-1,363	8,903	18,968	28,837	38,517	48,012	57,328	66,386	75,100	83,655	92,053	100,285
1,100,000	-34,332	-22,905	-11,709	-737	10,018	20,562	30,901	41,041	50,989	60,748	70,325	79,725	88,952	98,012	106,908
1,150,000	-34,767	-23,178	-11,589	-111	11,132	22,156	32,965	43,566	53,965	64,168	74,181	84,008	93,655	103,126	112,427
1,200,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,091	56,942	67,589	78,037	88,291	98,357	108,240	117,945
1,250,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,574	103,060	113,354	123,464
1,300,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,350,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,400,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,450,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,500,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,550,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,600,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,650,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,700,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,750,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,800,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,850,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,900,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
1,950,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478
2,000,000	-34,767	-23,178	-11,589	0	11,589	23,178	34,767	46,356	57,945	69,533	81,122	92,711	104,300	115,889	127,478

Actual FIFO balance at 12/31/2018 year end: 1,158,892
Actual current year LIFO index for 12/31/2018 year end: 1.013
12/31/2019 Minimum FIFO balance required to avoid LIFO layer erosions:

1,124,125 1,135,714 1,147,303 1,158,892 1,170,481 1,182,070 1,193,659 1,205,248 1,216,837 1,228,426 1,240,014 1,251,603 1,263,192 1,274,781 1,286,370

This shows the next year LIFO expense (income) amounts that would result from the range of year end inventory current year cost (FIFO or average cost) balances shown in the leftmost column and the range of inflation indexes shown on the sixth row.

IPIC Data Input Sheet

Data Input Sheet for: Sample HVAC Equipment & Supplies Wholesaler
For the year ended: 12/31/2018

BLS Category Number	Year End Inventory Balance	BLS Category Description
067903	575,770	~~Industrial gases
114807	10,340,642	~~Heat transfer equipment, including heat pumps
1066	4,377,407	~~Domestic water heaters
1392	988,089	~~Insulation materials
1063	3,460,332	Other heating equipment, non-electric, including parts
1061	4,373,695	~~Steam and hot water equipment
1148	7,133,207	~~Air conditioning and refrigeration equip
1062	4,074,192	Furnaces and heaters, including parts
1141	1,468,093	~~Pumps, compressors, and equipment
1072	414,588	~~Metal tanks
1181	2,856,794	Automatic environmental controls for monitoring residential, commercial, and appliance use
1132	975,047	~~Power-driven handtools, including parts and attachments
107411	1,896,199	Fabricated metal pipe, tube, and fittings
1173	231,138	~~Motors, generators, motor generator sets
10730120	2,231,638	Sheet metal air-conditioning ducts and stove pipe
10250239	1,132,817	Copper and copper-base alloy pipe and tube
07210603	984,362	~~Plastics pipe
114806	99,843	All other miscellaneous refrigeration and air-conditioning equipment
105	1,411,370	~~Plumbing fixtures and fittings
118	413,048	~~Miscellaneous instruments
11480734	415,113	Heat pumps
124104	194,845	~~Other major household appliances including room air-conditioners
07210605	474,115	Plastics plumbing fixtures
067	350,315	~~Other chemicals and allied products
0916	170,425	Pressure-sensitive products
114809	646,683	Parts and accessories for air conditioning and heat transfer equipment
106	235,298	~~Heating equipment
114902	1,022,757	~~Metal valves, except fluid power
10540223	646,742	Other plumbing fixture fittings and trim
1168	122,061	~~Service industry machinery and parts
1026	122,461	~~Nonferrous wire and cable
1042	202,444	~~Hand and edge tools
10540211	708,628	Bath and shower fittings
10540218	2,083,604	Lavatory and sink fittings
1076	53,318	Fabricated steel plate
1149	274,418	~~Miscellaneous general purpose equipment
10740811	556,509	Metal grilles, registers and air diffusers
0576	26,155	~~Finished lubricants
067909	63,272	~~Other miscellaneous chemical products
10890589	248,735	Other fabricated metal products
1073	394,594	~~Sheet metal products
114908	118,651	~~Filters and strainers
114802	207,085	Unitary air-conditioners, except air source heat pumps
072B	48,750	Consumer, institutional, and commercial products, n.e.c.
114903	1,886,437	Metal pipe fittings, flanges, and unions
07210604	1,367,790	Plastics pipe fittings and unions
114701	42,568	~~Fan, blower, air purification equipment
105402	148,960	~~Plumbing fixture fittings and trim
072106	82,374	~~Plastic construction products
107301G1	160,380	<<No indexes for 5+ years>>Sheet metal roof ventilators, louvers, & dampers for heating, ventilation, and air-conditioning
11470145	108,775	~~Industrial and commercial fans and blowers
1056	34,536	Enameled iron & metal sanitary ware
06790904	19,170	Salt, evaporated and solar
101502	153,856	~~Pressure and soil pipe & fittings, cast iron

IPIC Data Input Sheet

Data Input Sheet for: Sample HVAC Equipment & Supplies Wholesaler
For the year ended: 12/31/2018

BLS Category Number	Year End Inventory Balance	BLS Category Description
11490202	28,248	Industrial ball valves, incl. manual and power operated
067904	150,364	~~Adhesives and sealants
114701431	387,479	Air filters for air-conditioners and furnaces, etc., of 2400 CFM or less, except parts
117	21,731	~~Electrical machinery and equipment
07210606	55,509	Other plastic construction products
1052	100,387	Vitreous china plumbing fixtures and china & earthenware bathroom accessories
0713	142,580	~~Miscellaneous rubber products
08210102	31,925	Stock wood kitchen cabinets, related cabinetwork and countertops
107102	46,981	Metal doors and frames (except storm)
1563	18,630	~~Medical and surgical appliances and supplies
108812	31,425	Steel nails, staples, tacks, spikes and brads
11490211	29,663	Automatic regulating and control valves
12410339	9,727	Parts and attachments for household refrigerators and freezers
1395	44,068	~~Cut stone and stone products
1081	19,056	~~Bolts, nuts, screws, rivets, and washers
102519	16,720	~~Other nonferrous mill shapes
1147	5,063	~~Air purification equipment and industrial and commercial fans and blowers
071304	15,299	~~Rubber and plastics hose
11490204	14,062	Industrial plug valves
08210104	15,219	Stock wood bathroom vanities and related bathroom cabinetwork including tops
14120508	13,131	Other motor vehicle parts
1054	22,637	~~Plumbing fixture fittings and trim
Sheet Total	64,050,000	

This is the source document for external index calculations as it shows the Excel file imported into the software containing BLS categories & inventory balances.

UNICAP Reports

HVAC Equip & Supplies Wholesaler **8/18/2019 1:24:09 PM**

ACTUAL YEAR-END LIFO SUMMARY WITH UNICAP COSTS REPORT 18

12/31/2018 **Data path:Y:\LIFOPRO1\SAMPLE_HVAC_WHOLESALER\LPSW_Data_Files**

POOL NO.	POOL NAME	CURRENT YEAR COST	12/31/2018 DEFLATOR INDEX	CUMLTV DEFLATOR INDEX	CUMLTV INFLATOR INDEX	LIFO INVENTORY	12/31/2018 LIFO RESERVE	12/31/2017 LIFO RESERVE	12/31/2018 LIFO EXPENSE	UNICAP COSTS APPLIED	UNICAP COSTS RATE
1	Chemicals and allied products(06)	1,158,892	1.012672	1.616186	E 1.616186	805,670	353,222	338,720	14,502	5,403	.010690
2	Metal and metal products(10)	29,359,510	1.046404	1.654731	E 1.654731	19,701,784	9,657,726	8,355,744	1,301,983	145,773	.007132
3	Machinery and equipment(11)	33,531,598	1.049501	1.663731	E 1.663731	22,338,036	11,193,561	9,612,004	1,581,558	255,398	.011199
	Totals excluding UNICAP costs	64,050,000	1.047391			42,845,491	21,204,509	18,306,467	2,898,042	406,574	.009325
	Total UNICAP costs					406,574					
	Totals including UNICAP costs					43,252,064					
	12/31/2017 (last year) UNICAP costs applied									433,725	
	12/31/2018 Increase(decrease) in UNICAP costs applied									-27,152	
	12/31/2018 LIFO expense(income) excluding UNICAP costs applied									2,898,042	
	12/31/2018 LIFO reserve before UNICAP costs applied									21,204,509	
	12/31/2018 LIFO inventory balance before UNICAP costs applied									42,845,491	

This report shows balances before & including §263A UNICAP costs with user-inputted absorption ratios. UNICAP costs are included in Reports 16, 16a, 17, 18 & 18a.