

OCTOBER 1, 2024



**THE RESEARCH & DEVELOPMENT
TAX CREDIT REPORT to the
PENNSYLVANIA GENERAL ASSEMBLY**

Josh Shapiro, Governor

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	PAGE
INTRODUCTION	1
LEGISLATIVE CHANGES	2
TENTATIVE VS. ACTUAL	3
2024 RECIPIENTS	4
UTILIZATION	5
SALES & ASSIGNMENTS	6
STATE COMPARISONS	7
EFFECTIVENESS OF THE PENNSYLVANIA TAX CREDIT PROGRAM	8
ADMINISTRATION AND EVALUATION	10
RECOMMENDATIONS FOR THE PENNSYLVANIA TAX CREDIT PROGRAM	11
APPENDIX INTRODUCTION	1A
APPENDIX A	2A
APPENDIX B	1B
APPENDIX C	1C
APPENDIX D	1D
APPENDIX E	1E

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

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Other reports and publications available from the Bureau of Research include the Statistical Supplement, Personal Income Tax Statistics, Property Tax/Rent Rebate Program Statistical Reports, the Monthly Revenue Report, and various tax credit reports. These publications are available on the Department's website.

For questions related to information contained in this publication, please contact the Bureau of Research at RA-RVFSL-BOR-INQUIRY@pa.gov.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

INTRODUCTION

AUTHORIZATION

Act 7 of 1997 created the Pennsylvania Research & Development (R&D) tax credit. The R&D tax credit provision became Article XVII-B of the Tax Reform Code of 1971 (TRC). The intent of the R&D tax credit was to encourage taxpayers to increase R&D expenditures within the Commonwealth in order to enhance economic growth. The terms and concepts used in the calculation of the Commonwealth's R&D tax credit are based on the federal government's R&D tax credit definitions for qualified research expenses.

Act 7 of 1997 authorized the Department of Revenue (Department) to approve up to \$15 million in total tax credits per fiscal year. \$3 million of the \$15 million was set aside for "small businesses," which are defined as a "for-profit corporation, limited liability company, partnership or proprietorship with net book value of assets totaling...less than five million dollars (\$5,000,000)."

APPLICATION

Taxpayers must submit an application to the Department by December 1st to apply for the R&D tax credit. The credit is for qualified Pennsylvania research expenditures made in the taxable year ending in the prior calendar year. The Department has until May 1st of the following year to notify taxpayers of their approved tax credit amount.

TAX CREDIT CAP

Starting with fiscal year 2022-23, the R&D tax credit cap is \$60 million, of which \$12 million is set aside for "small" businesses. The cap was increased from \$55 million, in effect since December 2011. For a history of changes in the cap, see the Legislative Changes page.

TAX CREDIT CALCULATION

The tax credit is calculated using the increase over the taxpayer's base year research expenses for qualified R&D conducted within Pennsylvania. For "not small" businesses, the tentative credit is equal to 10% of the increase in expenses. Since Act 116 of 2006, the tentative credit for "small" businesses is 20% of the increase in expenses.

TAX TYPES

The R&D tax credit may be claimed against the following taxes: the Capital Stock and Franchise Tax (CSFT), the Corporate Net Income Tax (CNIT), and the Personal Income Tax (PIT).

SALE OR ASSIGNMENT

Tax credits awarded in 2003 and later may be sold or assigned. In order to sell an unused credit, the taxpayer must file an application with DCED. The application identifies the seller and the R&D tax credit that it intends to sell, along with the buyer and the amount for which the credit is being sold or assigned. (See Legislative Changes page for more information.)

APPEALS

Act 25 of 2021 enacted an appeals process for taxpayers, brokers, and the Department concerning administration of tax credits and benefits. This includes a taxpayer's right to appeal determinations by the department. Application year 2021 is the first year in which appeals are allowed. The effects of the appeals are included in the current year's report.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

LEGISLATIVE CHANGES

TAX CREDIT CAP LEGISLATION

<u>LEGISLATION</u>	<u>AWARD YEARS</u>	<u>TOTAL CREDIT CAP</u>	<u>SMALL BUSINESS SET ASIDE</u>
ACT 7 OF 1997	1997 - 2003	\$15.0 Million	\$3.0 Million
ACT 46 OF 2003	2004 - 2005	\$30.0 Million	\$6.0 Million
ACT 116 OF 2006	2006 - 2008	\$40.0 Million	\$8.0 Million
ACT 48 OF 2009	2009	\$20.0 Million	\$4.0 Million
ACT 48 OF 2009	2010	\$18.0 Million	\$3.6 Million
ACT 26 OF 2011	2011 - 2021	\$55.0 Million	\$11.0 Million
ACT 53 OF 2022	2022 FORWARD	\$60.0 Million	\$12.0 Million

OTHER LEGISLATIVE CHANGES

ACT 46 - 2003 This act allowed R&D tax credit recipients to apply to the Department of Community and Economic Development (DCED) to sell or assign an R&D tax credit if there has been no claim for allowance filed within one year from the date that the Department approved the credit. The purchaser or assignee must use the newly obtained R&D tax credit in the taxable year in which the purchase or assignment of the credit is made. The purchased or assigned R&D credit cannot be used to offset more than 75% of a tax liability for a taxable year. The purchased or assigned credit cannot be carried over, carried back, resold, or refunded. The provision to sell or assign unused R&D tax credits applies to credits awarded in December 2003 and forward, but the initial sale or assignment could not take place until at least December 2004.

Additionally, this act mandated that the Department report to the General Assembly the names of all taxpayers awarded R&D tax credits in each year starting in 2004.

ACT 48 - 2009 This act removed the one year holding period established by Act 46 of 2003. Credits awarded in 2009 and later can be sold immediately.

ACT 85 - 2012 This act repealed the sunset date for the R&D tax credit in Section 1712-B of the law, but left the reference to the sunset date in Section 1707-B unchanged.

ACT 85 - 2016 This act repealed the reference to the sunset date in Section 1707-B.

ACT 43 - 2017 This act authorizes the Department of Revenue to perform tax clearances on taxpayers prior to the awarding of a tax credit to ensure all taxpayers are compliant with tax payment and filing obligations.

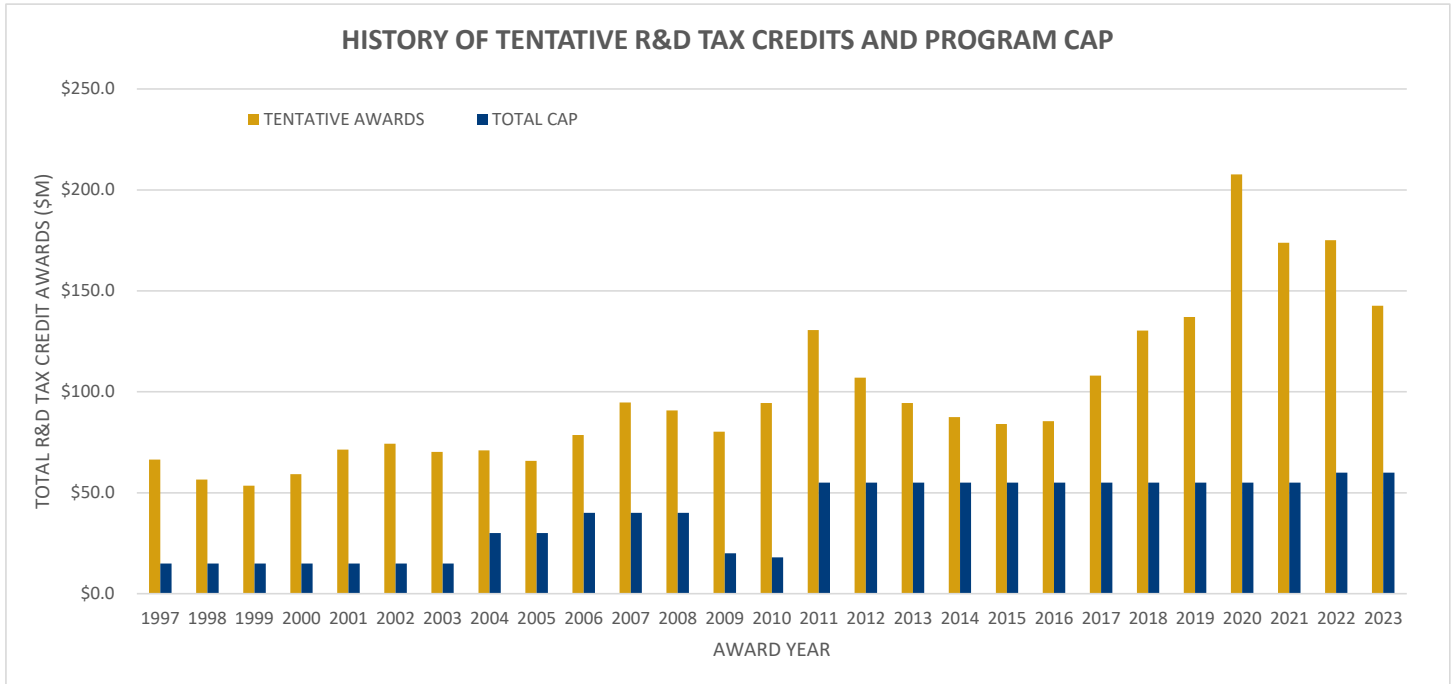
ACT 25 - 2021 This act moves several deadlines for the R&D tax credit, and creates an appeals process for tax credits. The application deadline is moved from September 15 to December 1. The act moves the deadline for departmental approval from December 15 of the calendar year following to May 1 of the second calendar year following the close of the taxable year during which the expense was incurred. The deadline for the annual report has also been moved, from March 15 of the following calendar year to October 1, starting with the 2022 report. Additional reporting requirements regarding the sale and transfer of credits were also added, available in appendices B through E.

This act also puts in place an appeals process for taxpayers, brokers, and the Department of Revenue concerning the administration of tax credits and tax benefits.

ACT 53 - 2022 This act increases the credit cap from \$55 million to \$60 million, effective for fiscal year 2022-23. Small businesses are earmarked \$12 million, continuing to receive 20% of the total credit awarded. The act further provides that the program cap may not be changed by the legislature before June 30, 2025.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

TENTATIVE VS. ACTUAL



Without caps on annual awards, \$2,690.9 million in R&D tax credits would have been awarded from the tax credit's inception through May 2024 (award year 2023). Actual R&D tax credit awards have totaled \$1,048.0 million over that timeframe. Over the years, the varying annual credit caps have reduced the amount of R&D tax credit that would have been awarded to 38.9% of what was requested.

Since the start of the program, "small" businesses have received \$178.7 million of the \$235.4 million in tentative R&D tax credits (75.9%). In the credit's 25 years of existence, "small" businesses have requested more than the small business set aside twelve times, including eight of the past ten years. Businesses classified as "not small" have received \$869.3 million of \$2,455.4 million in tentative R&D tax credits (35.4%).

The table below shows tentative vs. actual credits for May 2024 awards (\$K):

ACTUAL CREDIT RANGE	APPLICANTS	TENTATIVE	ACTUAL	% OF ACTUAL	% OF TENTATIVE
\$0 - \$4.9	125	\$0.7	\$0.3	0.5%	47.8%
\$5.0 - \$19.9	271	\$6.3	\$3.1	5.2%	49.5%
\$20.0 - \$49.9	157	\$10.2	\$5.0	8.4%	49.4%
\$50.0 - \$99.9	100	\$13.3	\$7.0	11.6%	52.3%
\$100.0 - \$499.9	74	\$34.0	\$15.1	25.2%	44.4%
\$500.0 - \$999.9	3	\$4.9	\$1.9	3.1%	37.7%
\$1,000.0 OR GREATER	14	\$73.3	\$27.6	46.1%	37.7%
	744	\$142.7	\$60.0	100.0%	42.1%

Overall, taxpayers received 42.1% of the tentative R&D tax credit awards in the most recent program year. The vast majority of taxpayers (97.7%) received less than \$500,000 in R&D tax credits. These businesses received 50.9% of total R&D tax credit awards. Taxpayers receiving \$500,000 or more in R&D credits for this program year (2.3% of total applicants) received 49.1% of total R&D awards.

The decrease in tentative credits for 2024 awards may be attributable to federal tax law changes under the Tax Cuts and Jobs Act (TCJA). Starting in 2022, businesses that invest in R&D are no longer able to immediately deduct 100 percent of their R&D expenses. Instead, they must amortize their costs over five years, or if the research is conducted outside the United States, fifteen years.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

2024 RECIPIENTS

R&D CREDITS - MAY 2024 (\$M)

BUSINESS TYPE	APPLICANTS	% OF APPLICANTS	TENTATIVE	ACTUAL	% OF ACTUAL
SMALL	261	35.1%	\$10.2	\$10.2	17.0%
NOT SMALL	483	64.9%	\$132.5	\$49.8	83.0%
TOTAL	744	100.0%	\$142.7	\$60.0	100.0%

BUSINESS TYPE	APPLICANTS	% OF APPLICANTS	ACTUAL	% OF ACTUAL
MANUFACTURING	267	35.9%	\$21.3	35.6%
INFORMATION	42	5.6%	\$8.2	13.7%
SERVICES	239	32.1%	\$14.8	24.7%
MISCELLANEOUS	196	26.3%	\$15.7	26.1%
TOTAL	744	100.0%	\$60.0	100.0%

BUSINESS TYPE	2021 CNIT LIABILITY (\$M)
MANUFACTURING	\$75.8
INFORMATION	\$116.9
SERVICES	\$22.7
MISCELLANEOUS	\$176.6
TOTAL	\$392.0

"Small" taxpayers received \$10.2 million in R&D tax credits in May 2024 for the 2023 application year. This is the first time in eight years that "small" taxpayers did not request more than the "small" business set-aside (\$12.0 million). Therefore, "small" taxpayers received 100% of their tentative award amount.

"Not small" taxpayers received a total of \$49.8 million, a 37.6% proration of their tentative award amount.

Manufacturers received \$21.3 million of the total \$60.0 million awarded in May 2024. The largest amount of awards in the manufacturing sector was given to the 18 pharmaceutical medical equipment manufacturers, which received \$9.9 million combined.

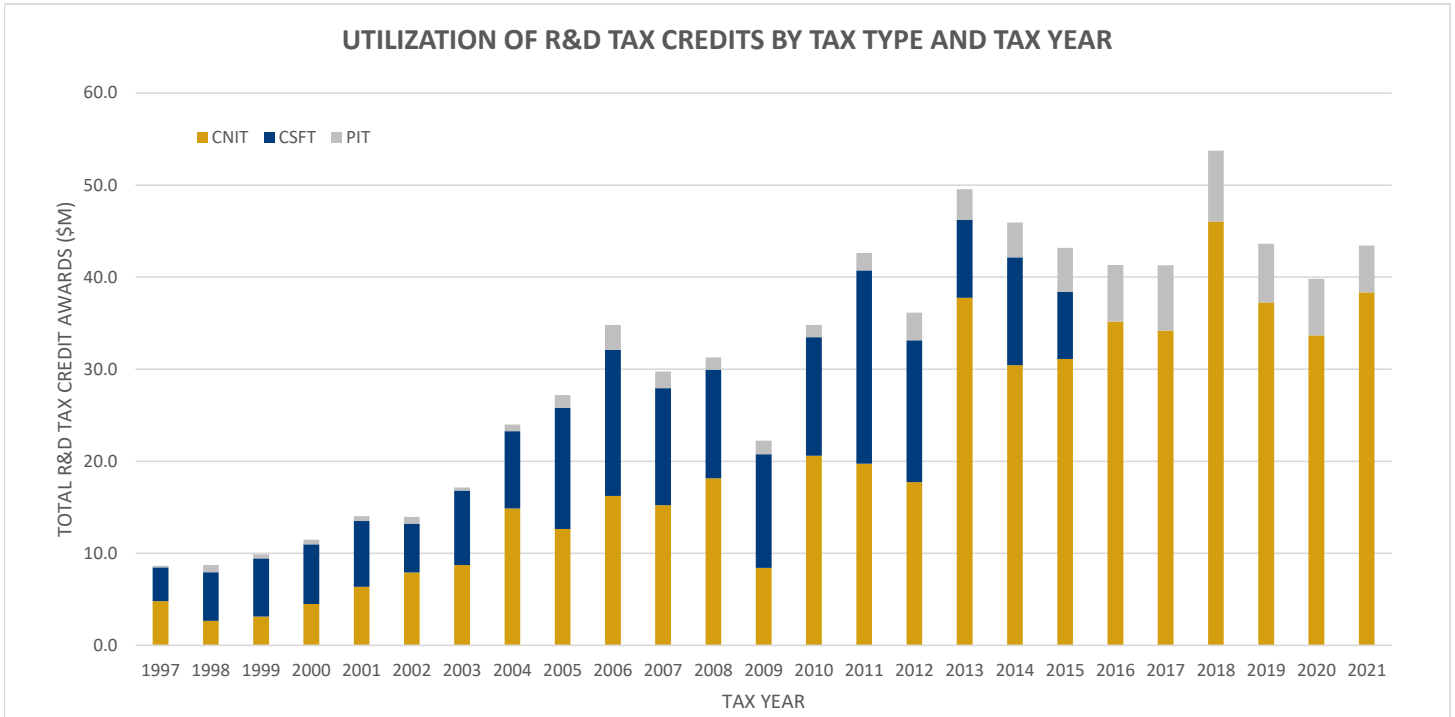
The Information sector received the largest amount of R&D tax credit per recipient - approximately \$195,000. Of the sector's total \$8.2 million in awards, 75% went to software publishers, internet tool providers, web hosting, and computer infrastructure firms.

In the Service sector, the largest group of recipients by award and count were the 63 computer system design firms, which received \$3.7 million. Firms engaged in scientific research services received \$3.4 million in awards.

In order to provide an idea of the relative value of the R&D tax credit to recipients, an analysis was conducted comparing the R&D tax credit awarded in application year 2023 to the total tax year 2021 self-assessed CNIT, the latest year for which reports are available for all taxpayers. Of the 744 taxpayers receiving the R&D tax credit, 347 had positive CNIT liabilities, with a total self-assessed 2021 tax year liability of \$392.0 million.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

UTILIZATION



The chart above shows the amount of R&D tax credit that has been applied against the Corporate Net Income Tax (CNIT), Capital Stock/Foreign Franchise Tax (CSFT), and the Personal Income Tax (PIT). The figures shown are from taxpayers that have directly received the tax credit from the Department, as well as those taxpayers that have purchased unused R&D tax credits. For PIT, individuals who received the credit directly are included, as are any individual owners of S corporations or limited liability companies (LLCs) who received the pass-through benefit. All credit amounts are as of September 2024.

R&D tax credit utilizations by tax type for tax years 1997-2021 (\$M):

TAX TYPE	UTILIZATION	SHARE OF UTILIZATION
CNIT	505.8	65.8%
CSFT	193.3	25.1%
PIT	69.6	9.0%
	768.6	100.0%

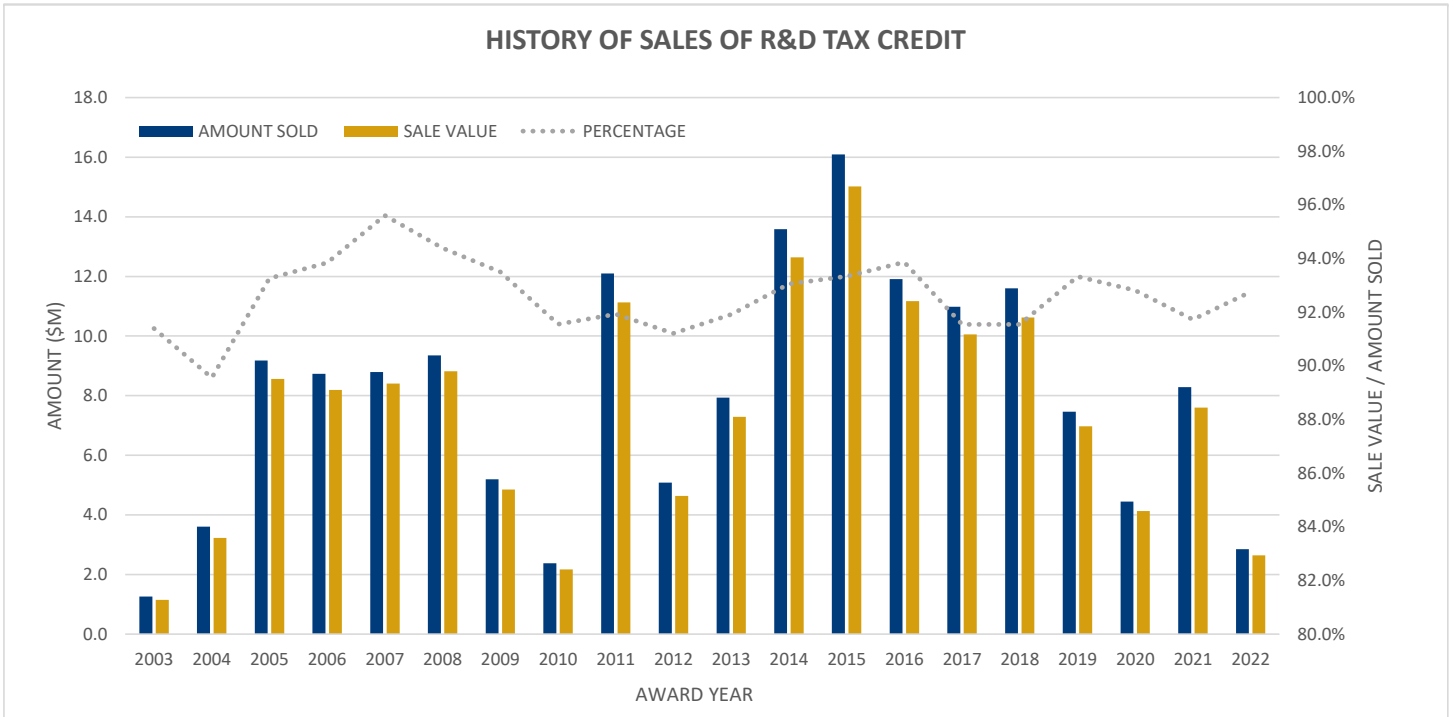
Utilizations of \$768.6M represents 82.8% of the total amount awarded between 1997 and 2021.

In the chart above, utilizations of the R&D tax credit against CSFT stop after tax year 2015 because CSFT was repealed for tax year 2016.

Also, it is important to note that the amount of tax credit applied to a particular taxable year can vary over time as a taxpayer's taxable year liability may change due to an assessment or the application of other credits.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

SALES & ASSIGNMENTS



As noted on the Legislative Changes page, Act 46 of 2003 permits taxpayers with unused R&D tax credits to sell them for cash to other taxpayers who can use them. The earliest that unused R&D tax credits could be sold was December 2004, for credits awarded by the Department in December 2003. Taxpayers can only sell unused amounts of tax credits that exceed any collectible tax liability against which the credit may be offset. S Corporations may not apply to sell or assign any credit that has been passed-through to its shareholders. In order to sell an unused credit, the taxpayer must file an application with DCED. The application identifies the seller and the R&D tax credit that it intends to sell, along with the buyer and the amount for which the credit is being sold or assigned.

The buyer of the unused R&D tax credit can use it to offset up to 75% of a qualified tax liability. The buyer cannot carry forward, carry back, get a refund, or reassign the purchased credit. Further, the buyer must use the purchased tax credit against a qualified tax liability in the taxable year in which it was transferred. Lastly, the buyer must identify to the Department the taxpayer from which they bought the unused tax R&D tax credit.

By the end of 2023, \$160.8 million of the \$898 million in R&D tax credits awarded between 2003 and 2022 had been sold (17.9%). Taxpayers purchasing the tax credits paid \$149.3 million (92.8% of the value of the credits).

The chart above shows the value of the tax credits sold and the sales price for each award year between 2003 and 2022. The dotted line shows the amount paid for the tax credits divided by the value of the tax credit.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

STATE COMPARISONS

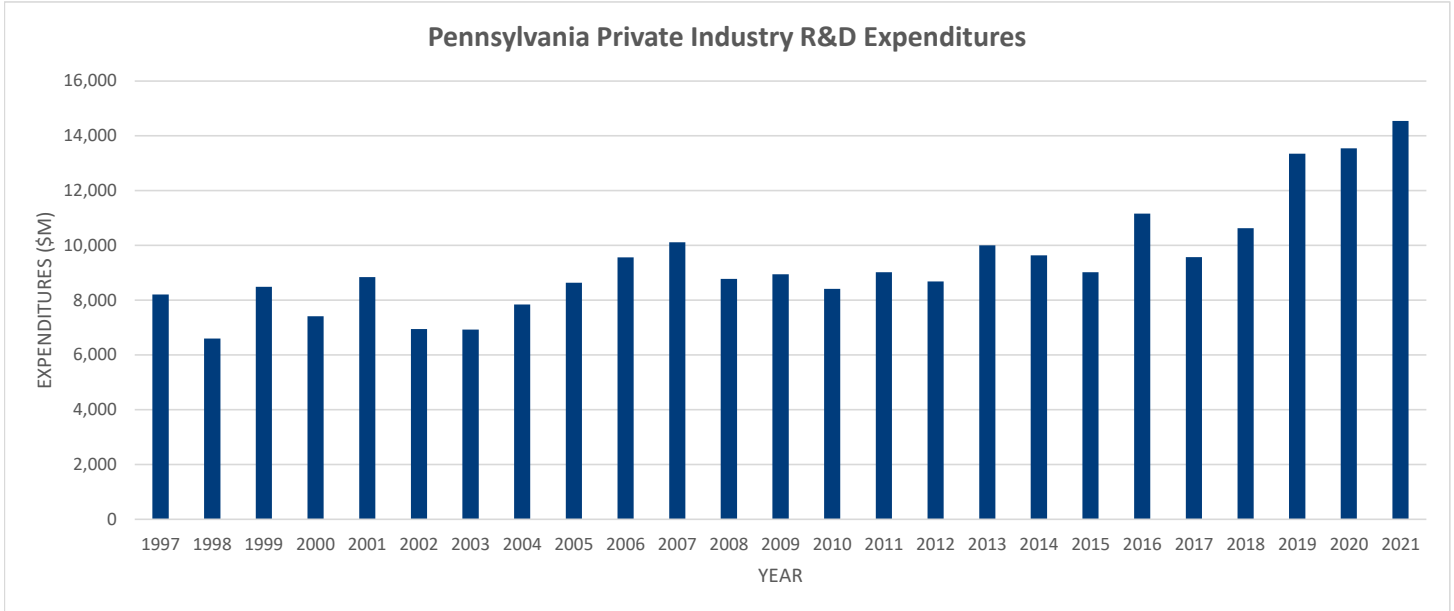
A majority of states have sought to capture the potential benefits of encouraging R&D within their state by enacting an R&D tax credit. There are 40 states, including Pennsylvania, that have provided for R&D tax credits in recent law. Credits are usually applied against either corporate net income (CNIT) tax or the personal income tax (PIT) liabilities, depending on the existing business tax structure of the state. The table below details the R&D tax credit structure of bordering states.

STATE	TAX TYPES	CREDIT CAP
DELAWARE	CNIT & PIT	None
MARYLAND	CNIT & PIT	Total R&D credits are capped at \$12 million, with \$3.5 million reserved for qualified small businesses.
NEW JERSEY	CNIT	None
NEW YORK	CNIT & PIT	Excelsior R&D credits are limited to Excelsior Jobs Program participants and contain multiple credit components. Credit components in the aggregate shall not exceed \$36 million in TY 2024; caps in other tax years vary.
		The Life Sciences R&D tax credit is capped at \$10 million per year. If the tax credits applied for exceed the cap, then the excess credits will be treated as having been applied for in the subsequent year.
OHIO	Commercial Activities Tax & PIT	None
WEST VIRGINIA	No Credit	N/A

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

EFFECTIVENESS OF THE PENNSYLVANIA TAX CREDIT PROGRAM

The timeframe for R&D projects in the private sector can be lengthy. It is not uncommon for businesses to have R&D projects extend for 10 to 15 years or more. The Pennsylvania R&D tax credit has thus far had a potential impact on increasing research expenses over the course of 26 years, 1997 through 2021. The chart below illustrates Pennsylvania private industry R&D expenditures by year.



Source: 1997 through 2021 from National Science Foundation

Recent studies can help point to the potential impact of R&D credits on statewide research expenditure. On the high side, a study released by the Milken Institute in December 2015 estimated that a proposal to expand the California R&D tax credit could generate an additional amount of private expenditure six times the credit increase, and over a ten-year period contribute a 0.4% increase in the state's gross domestic product. A survey of available research done by the U.S. Treasury in 2016, paints a less enthusiastic picture. They found "recent estimates suggest that an elasticity of one is still a good benchmark", meaning that for each dollar in R&D tax credit, research expenditures increased by one dollar. The report notes several studies which found R&D expenditures increased by more than the amount of the credit, and that "smaller financially constrained firms" were more likely to respond in this way.

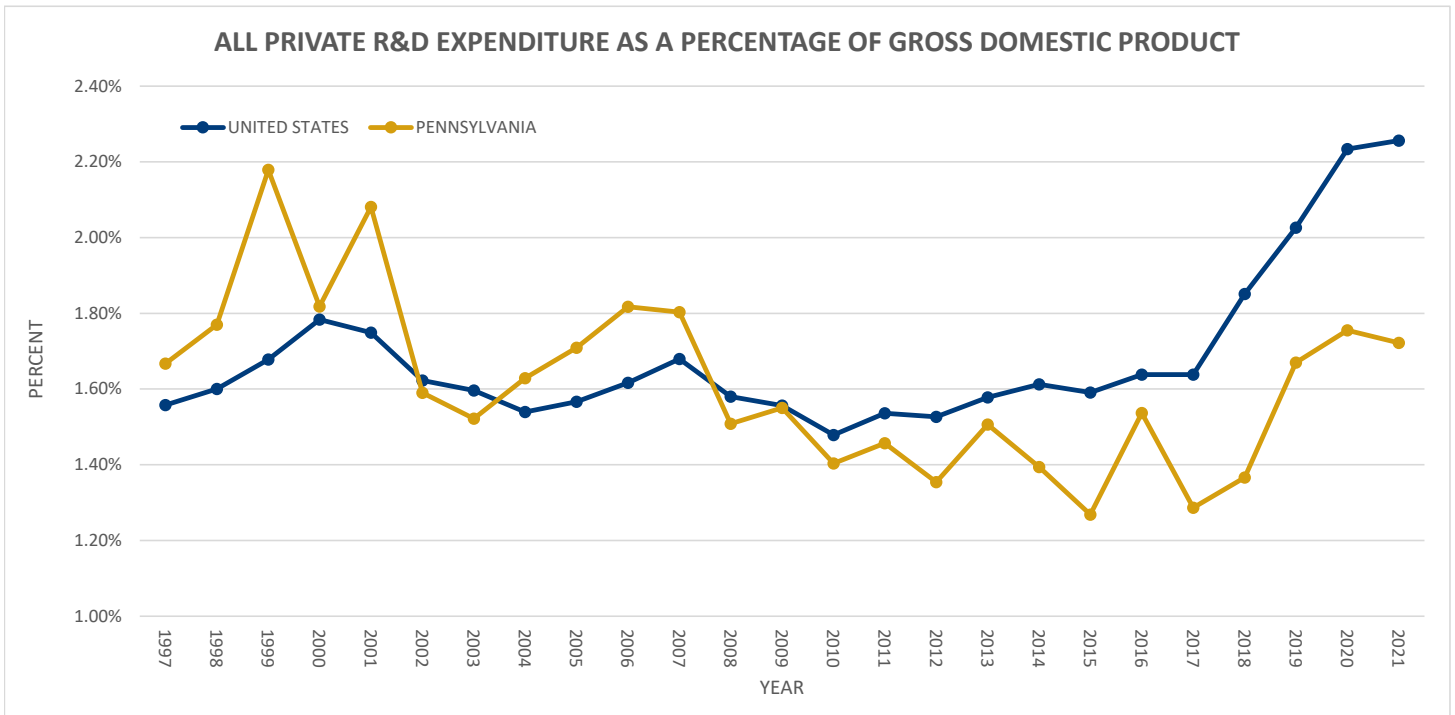
Pennsylvania has a very different mix of economic activity from California, so it is unclear that the same conclusions could be drawn relative to the Commonwealth. In fact, in 2021 California was home to \$199.2 billion in private R&D spending, over 37% of the US total, and issued about \$1.3 billion in R&D tax credits. Given that massive difference in R&D infrastructure, it is likely that Pennsylvania firms are affected differently by tax incentives, with small to moderate increases in overall expenditures.

State and even country level statistical analysis is greatly complicated by small sample size, idiosyncratic behaviors amongst a few firms, and accurately comparing various taxing regimes. While a higher level analysis may not provide lessons directly applicable to Pennsylvania, a 2017 study by Russel Thomson at MIT does seek to address some of the aforementioned statistical issues. Looking at a panel data from 29 industries in 26 OECD countries over 20 years, the study found that in the long-run, incentivizing R&D through tax credits does produce increased R&D expenditures. Reducing the tax price of R&D (the breakeven benefit-cost ratio where incremental R&D investment is profitable after tax) by 10% produced a corresponding 5% increase in R&D spending. While this effect is unlikely to be exactly the same in Pennsylvania, the MIT study does suggest that R&D spending could have been positively affected over the more than two decades the R&D credit has been part of the tax code.

The R&D tax credit does generate additional economic activity, which can be seen by the tax revenue attributable to the credit. The Independent Fiscal Office found that for every dollar of R&D tax credit there was 16 cents in corresponding revenue, indicating the program partially pays for itself.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

EFFECTIVENESS OF THE PENNSYLVANIA TAX CREDIT PROGRAM (CONTINUED)



Source: 1997 through 2021 from National Science Foundation

As shown in the chart above, the pattern of total R&D expenditure as a percentage of GDP does not conform to the one seen in recent years on the national level. The drop in GDP during the 2007-9 recession does initially inflate the R&D share of the US economy, but once the recovery began after 2009, the R&D share is largely flat and resumes an upward trend after 2015. By contrast the R&D share of the Pennsylvania economy is much more volatile, particularly from 2013 onward. An analysis of this deviation would require more data points, but the expansion of the natural gas industry and related manufacturing in Pennsylvania specifically may be related.

This year's chart also gives a glimpse into the effect of COVID-19 restrictions on R&D spending. While R&D continued to grow as a share of Pennsylvania's GDP through 2020, there seems to have been a lagged effect stretching into 2021. The R&D share of US GDP grew only slightly, Pennsylvania's shrunk by a similar amount. Given the greater volatility of the measure in the Commonwealth versus the country as a whole, this dip is likely to be a hiccup in the upward trend that began in 2017.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

ADMINISTRATION AND EVALUATION

In order to fairly and equitably award credits to businesses within the Commonwealth of Pennsylvania, the Department has taken steps to establish an on-line application process that creates transparency in the application itself, assists with the evaluation of those applicants, and provides insight into the economic benefits of the R&D Credits awarded to those businesses.

Beginning with the 2018 R&D Application, the department created the online application system with each applicant creating a unique User ID and Password. Implementing the R&D Credit online application provided the opportunity to add valuable business rules. These rules can require data entry in certain key fields that if in the past left blank would have resulted in a denial or mail correspondence. The rules also create the opportunity to present only relevant fields to the applicant based on the entry of information, such as after selecting an entity type. Once completed, the applicant receives a unique confirmation number to reference when accessing the application in the future and to identify related correspondence.

The electronic application process provided a mechanism to create a workflow that tracked the status of the application for the taxpayer, indicating whether the application was received, pending, reviewed, approved, or rejected. Once verification of the initial application was complete, the approval process continued confirming that the applicant and/or 20 percent owner was in compliance filing and paying all appropriate tax returns.

As the Department is tasked with the integrity of the application process and credits awarded, the department moved toward a system designed to further substantiate the applicant's PA-Qualified Expenditures, Total Expenditures, Direct Wages, and 3rd Party/Subcontracted Labor. Data analytics were developed and incorporated to group selected applicants based on information from the application and applicant history. Selected applicants were asked to provide records to substantiate areas including that wages were incurred for an employee conducting qualified research and development activities in Pennsylvania.

This review process provides greater assurance that the claimed research and development activities met the statutory qualifications for a tax credit.

Act 43-2017 authorizes the Department of Revenue to perform tax clearances on taxpayers prior to the awarding of a tax credit to ensure all taxpayers are compliant with tax payment and filing obligations.

The two issues for determination are entity tax compliance and ownership tax compliance for entity owners with a 20% or greater share of ownership.

On May 1, the statutory deadline for the Department to notify R&D applicants of their awards, 9.0% of applicants were deemed noncompliant and therefore not immediately eligible to receive the credit. However, a number of applicants have filed appeals, so the final noncompliant percentage is still pending.

The Department recommends that the General Assembly consider the following changes:

Move the period in which sales and assignments may be processed by the Department to June 1 following the immediate tax year in which the credit was awarded.

Require taxpayers to claim a federal income tax credit to qualify for the state credit.

Reduce the carryforward from 15 years to 5 years. This would ease the Department's administrative burden.

Many of the Department's recommendations from prior reports have become law due to Act 25 of 2021. Specifically, Act 25 instituted the following recommendations:

Created an appeals process for taxpayers, brokers, and the Department of Revenue concerning the administration of tax credits and tax benefits.

Moved the application deadline from September 1 to December 1.

Moved the deadline for Departmental approval from December 15 of the calendar year to May 1 of the second calendar year following the close of the taxable year during which the expense was incurred.

Authorized the Department to require a taxpayer to hire an independent CPA to perform agreed upon procedures.

Allowed the Department to recapture credits in applicable cases.

Required tax credits brokers to be registered with the Department.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX INTRODUCTION

Act 25 of 2021 mandated reporting requirements regarding the sale and transfer of R&D tax credits, in addition to the awardee information already reported as Appendix A. The newly required information on sales and transfers, including names, amounts, and purchase price, can be found in Appendices B through E. Act 25 also stipulated that the names of individuals be excluded from the report if they received a tax credit from a pass-through entity for no consideration. These assignments and transfers are reported as combined figures in Appendix C and E, respectively.

APPENDIX A

All awardees and the total credit awarded in the three preceding program years, along with the utilization of available R&D tax credits in the two preceding years.

APPENDIX B

All awardees who have sold or assigned credits in the previous full calendar year are listed with the total amount sold/assigned, and total compensation for those credits. Assignments are classified as a transfer between unrelated entities for no compensation.

APPENDIX C

All taxpayers who bought or received an assignment of R&D tax credits are listed with the total credits received, and the total paid in the program year. Individual taxpayers and trusts are summed together as "Individuals and Fiduciaries".

APPENDIX D

All awardees who transferred R&D tax credits to subsidiaries, shareholders, members, and partners, along with the total amount transferred.

APPENDIX E

All pass-through entities receiving R&D tax credits from an awardee, along with the total amount transferred. The total amount transferred to shareholders, members, and partners who are individuals or trusts is summed together separately.

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
JANSSEN RESEARCH & DEVELOPMENT LLC	7,844.6	3,613.0	5,120.5	7,844.6	3,226.3
VANGUARD GROUP INC	2,833.7	4,030.2	4,457.2	2,833.7	4,030.2
MERCK & CO INC			2,880.0		
COMCAST HOLDINGS CORPORATION	3,687.3	4,785.2	2,034.7	3,687.3	4,785.2
GOOGLE LLC	2,217.0	4,084.9	1,910.7	2,217.0	4,084.9
DUOLINGO INC	269.3	1,224.0	1,534.1		217.2
PHILLY SHIPYARD INC		453.7	1,397.1		453.7
SPARK THERAPEUTICS LLC			1,300.4		
MICROSOFT CORPORATION	404.1	673.2	1,269.5		
LOCKHEED MARTIN CORPORATION		370.6	1,205.6		
META PLATFORMS INC	541.0	906.0	1,195.6	541.0	906.0
ARGO AI LLC	1,334.5	1,073.2	1,181.4		
AMAZON.COM SERVICES LLC	563.0	811.3	1,133.8	563.0	811.3
AURORA INNOVATION INC		250.0	1,016.2		250.0
SAP AMERICA INC	640.0		715.7	640.0	
PPL ELECTRIC UTILITIES CORPORATION		137.9	580.2		137.9
SOUTHWESTERN ENERGY COMPANY			554.2		
APPLE INC	255.1		498.6	255.1	
THERAPYNOTES LLC	205.9		487.2	205.9	
COTERRA ENERGY INC	11.3	408.0	465.5		
ASTROBOTIC TECHNOLOGY INC	231.6	334.8	457.1		
HUBERT C JASINSKI DENTAL LABORATORY INC	15.2	297.3	421.4	15.2	297.3
CENTURY THERAPEUTICS INC	191.9	363.8	399.8		
GILEAD SCIENCES INC		802.2	382.6		
ZOLL MANUFACTURING CORP		354.7	372.2		223.6
INTERIUS BIOTHERAPEUTICS INC		87.6	326.5		
TSB NUCLEAR SERVICES INC			311.0		
PASSAGE BIO INC	504.4	194.4	308.4	504.4	194.4
CABALETTA BIO INC	133.6	206.9	307.3		
PPG INDUSTRIES INC	73.3	48.0	302.7		
KRYSTAL BIOTECH INC	135.4	147.2	292.2		
AMERICAN HYDRO CORPORATION	124.0		289.4		
FEDEX CORPORATE SERVICES INC		263.1	289.3		1.5
EISAI INC	228.7	213.8	286.7	228.7	213.8
ASPINITY INC	73.9	148.3	266.6		
STYROPEK USA INC			255.8		
VITTORIA BIOTHERAPEUTICS INC			254.9		
NVIDIA CORPORATION	19.7	138.1	245.1	19.7	138.1
TE CONNECTIVITY CORPORATION			234.4		
SITIO LLC			232.9		
AMAZON WEB SERVICES INC	83.7	95.5	227.2	83.7	95.5
UNITED STATES STEEL CORPORATION		30.9	225.2		30.9
CERTAINTED HOLDING CORPORATION		138.2	220.0		138.2
NEUEXCELL THERAPEUTICS INC	28.5		218.2	28.5	
PIXELLE SPECIALTY SOLUTIONS LLC	30.2		203.5		
KURT J LESKER COMPANY			199.4		
MAC SAFETY INC	74.0	172.4	199.0	51.0	
PFNONWOVENS US INC	134.3	63.0	193.1	134.3	63.0
LEIDOS INC		95.3	191.4		95.3
WEST PHARMACEUTICAL SERVICES INC	38.7		188.4	38.7	

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
CARRIAGE MACHINE SHOP LLC		87.9	186.6		87.9
SEEGRID OPERATING CORPORATION		208.2	183.9		
DISCOVERY MACHINE INC		7.8	181.5		
DICKS SPORTING GOODS INC	168.4	242.6	176.4	168.4	242.6
AGGREGATES EQUIPMENT INC	64.3	41.2	173.2	64.3	41.2
TYBER MEDICAL LLC	6.8	85.2	163.7	6.8	85.2
FOUR GROWERS INC	18.3	8.2	156.5	18.3	8.2
FORALLSECURE INC			155.6		
AUDIA INTERNATIONAL INC	11.2		153.3	11.2	
BARRY CALLEBAUT USA HOLDING INC		28.7	153.0		28.7
COMMUNICATIONS TEST DESIGN INC	124.4	117.7	146.4		
QORTEK INC			142.6		
WESCO DISTRIBUTION INC		108.5	141.2		108.5
ALMAC GROUP INCORPORATED			134.8		
LISTRAK INC		86.1	133.4		
OMNICELL INC	150.6	244.3	130.1	150.6	244.3
SAA ARCHITECTS INC	37.6	26.8	125.5	37.6	26.8
LEAL THERAPEUTICS INC			124.5		
CODY COMPUTER SERVICES INC	63.3	61.0	122.0	13.6	
MYLAN PHARMACEUTICALS INC			121.2		
MOBILION SYSTEMS INC	39.1	58.1	119.5	39.1	58.1
TARGET PRECISION LLC	3.6		118.5	3.6	
EDTELL LLC		42.3	116.7		42.3
CARLISLE US ROOFING LLC			116.7		
KCF TECHNOLOGIES INC	46.9		116.6		
BAYER HEALTHCARE LLC	242.5	28.2	116.1		
RED ROVER TECHNOLOGIES LLC		11.5	116.1		8.7
GLOBAL PAYMENT HOLDING COMPANY	116.4	141.9	116.0	39.3	74.4
FEDEX GROUND PACKAGE SYSTEM INC		229.0	114.1		229.0
CROWDSTRIKE INC			113.7		
PAYPAL INC	17.6	74.4	112.1	17.6	74.4
ANSYS INC	813.9	378.8	111.7	206.9	378.8
MARINUS PHARMACEUTICALS INC	78.2	111.9	110.8	78.2	111.9
ULTRAGENYX PHARMACEUTICAL INC	53.1	55.3	109.7	53.1	55.3
HERSHEY COMPANY			108.9		
APPLIED SYSTEMS ASSOCS INC	45.4	16.2	107.3	45.4	
MEDIDATA SOLUTIONS INC			106.8		
LUTRON ELECTRONICS CO INC	65.1		105.7	65.1	
PPG ARCHITECTURAL FINISHES INC	122.3	140.5	104.5	69.9	
EUREKA METAL & GLASS SERVICES		38.7	104.1		
VEECO PROCESS EQUIPMENT INC			103.6		
EXACT SCIENCES CORPORATION			100.8		
LIFEWARE LABS LLC		0.8	96.8		0.8
II VI INCORPORATED			96.6		
CHAINIO LLC			96.5		
PROCESS COMBUSTION CORP	56.3	39.5	96.4	56.3	39.5
ST MARYS TOOL & DIE CO INC			95.3		
GRIDWISE INC	43.0	50.2	94.6	43.0	
ROBERT BOSCH LLC	20.5		93.5	20.5	
DATAFORMA INCORPORATED	8.8	39.0	92.9	8.8	39.0

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
SUSQUEHANNA CIVIL INC	73.5	15.3	92.2	73.5	15.3
COVESTRO LLC			92.2		
CHARLES RIVER LABORATORIES INC		41.6	89.7		41.6
FUJIREBIO DIAGNOSTICS INC	107.1	140.4	88.4		100.2
COMBUSTION SERVICE & EQUIPMENT COMPANY	7.8		87.7	7.8	
PRINTDROPPER INC			85.8		
MESHNET INC	27.3	47.8	85.4	27.3	47.8
JAZZ PHARMACEUTICALS INC	80.2	58.7	85.1	80.2	58.7
ARBOR PHARMACEUTICALS INC			84.7		
SYNOPSIS INC			84.6		
MAYVUE LLC		55.0	83.7		5.7
SUMMIT TECHNOLOGY CONSULTING GROUP LLC			83.6		
PHRG INTERMEDIATE LLC			83.5		
NOVOCURE INC		44.4	83.0		44.4
CONSOL ENERGY INC		12.9	83.0		12.9
IKEA PROPERTY INC			82.3		
SHOEMAKER MFG SOLUTIONS INC	6.6	14.8	82.2		14.8
HARMONYBIOSCIENCESIIINC			80.1		
LARIMAR THERAPEUTICS INC	43.2		79.3		
SENTIENT INVESTMENT CORPORATION	29.6	27.5	78.9	29.6	27.5
INNOVATIVE SUPPLY SOLUTIONS LLC	31.1		77.8		
DIAMOND KINETICS INC	14.3	34.1	77.0	14.3	34.1
COLDEGE TECHNOLOGIES INC	168.4	151.0	75.8	168.4	151.0
ATI OPERATING HOLDINGS LLC	17.8	88.2	75.4		88.2
SENTINEL PROCESS SYSTEMS INC	39.9		75.3		
GOODHART SONS INC		79.6	75.0		
BLOOMFIELD ROBOTICS INC		41.8	75.0		
RIGHT AIR INC		31.5	74.8		31.5
D.GILLETTE INDUSTRIAL SERVICE INC	39.7	47.7	73.4	39.7	47.7
ASSET MAP HOLDINGS INC	13.7	39.6	73.1	13.7	
PROTOINNOVATIONS LLC		65.8	72.7		65.8
BARTON PARTNERS ARCHITECTS		30.1	72.3		
ECOLAB INC	24.2	25.9	71.6	24.2	25.9
ORCHESTRA BIOMED INC	45.9		71.4		
AKAS TEX LLC	9.3	51.0	70.9	9.3	51.0
WEBSTAIRANT STORE INC	36.2	103.5	70.2	36.2	103.5
GREAT ESTATES INC	14.3	42.7	70.1	14.3	42.7
PHOENIX CONTACT DEVELOPMENT & HUBSPOT INC	43.4	57.4	69.9	43.4	57.4
REGULATORY DATACORP INC C/O MOODYS COR		43.1	69.6		31.9
DE LAGE LANDEN FINANCIAL SERVICES INC			69.3		
PERPAY INC	27.8	39.4	68.3	27.8	39.4
STRUCTURAL ENGINEERING CORPORATION OF PRINTFLY CORPORATION		72.2	67.5		15.6
CYTOAGENTS INC	55.3		66.0	55.3	
MATTHEWS INTERNATIONAL CORPORATION			65.6		
WAVEFRONT RESEARCH INC		337.8	65.5		
B BRAUN MEDICAL INC	90.0	60.4	65.3	90.0	60.4
WEIS MARKETS INC	28.1	34.6	64.9	28.1	34.6
RITTER FOODS LLC			64.5		

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
ENERSYS DELAWARE INC	124.0	48.5	64.2	124.0	48.5
KMM GROUP LTD.	4.9	18.1	63.2		18.1
RED HAT INC			61.8		
PROFI-VISION INC	63.3	92.5	61.5		
P J DICK INCORPORATED	46.0	37.4	61.4	46.0	
PHRASE HEALTH INC	15.9	19.6	60.1		
ARMSTRONG WORLD INDUSTRIES INC		247.9	60.1		247.9
GRAVIC INC	39.0	25.1	58.8	39.0	25.1
NICHE.COM INC			58.7		
DESERT NEWCO LLC			58.2		
MICROCHIP TECHNOLOGY INCORPORATED	31.4	40.2	58.1	31.4	40.2
OPTIMUS TECHNOLOGIES INC	6.3	5.0	57.2	6.3	5.0
SWANK ASSOCIATED COMPANIES		12.2	57.0		12.2
INDOVINA ASSOCIATES ARCHITECTS	64.3	23.2	56.7	64.3	23.2
NEXUS-1LLC			56.2		
GENERAL DYNAMICS INFORMATION TECHNOLOGY	52.7	72.8	56.2	52.7	72.8
I B ABEL INC	10.1	43.4	56.1	10.1	43.4
PEPTILOGICS INC			56.0		
SIGNATURE DIAGNOSTICS INC			55.6		
CODE BIOTHERAPEUTICS INC			55.5		
MK FIRE PROTECTION & SUPPLY LLC	31.7	45.7	55.4		
SHELL GAMES LLC	130.6	15.5	55.4	130.6	15.5
REPISODIC INC			55.2		
INNOVATIVE SYSTEMS INC		82.6	55.1		
REPURE THERAPEUTICS USA INC			54.9		
ITR LLC	21.5	11.1	54.8	21.5	11.1
BSEG LLC	18.3	31.2	54.8		31.2
THE HAMPTON CONSULTING CORP			54.5		
SAVANA INC		73.8	54.2		
FCI USA LLC		10.8	53.6		10.8
DENTAL IMAGING TECHNOLOGIES CORPORATION		23.0	53.3		17.3
BURLINGTON COAT FACTORY WHSE CORP WAREHOUSE CORPORATION			52.6		
GEMINI PLASTICS INC		5.1	52.1		
SAMTEC INC	35.0	20.8	51.8	35.0	20.8
FXI INC	35.2	9.8	51.8	35.2	
SIGNALLAMP HEALTH LLC	21.4	23.7	51.5		
DATADOG INC			51.4		
AGF MANUFACTURING INC			51.4		
CLASSIC INDUSTRIES INC			51.2		
SMITH & NEPHEW INC			50.2		
ADC THERAPEUTICS AMERICA INC	92.3	20.1	50.0	92.3	20.1
SUPERIOR PLASTIC PRODUCTS INC	7.6	12.0	48.9	7.6	12.0
AKRION TECHNOLOGIES INC FORMERLY NAURA	10.9	16.4	48.6	0.8	
IDELIC INC		139.4	48.4		
MENASHA CORPORATION		52.2	48.3		52.2
GUIDEWIRE SOFTWARE INC	52.7	38.9	48.3		38.9
WEST CHESTER DESIGN BUILD LLC		30.5	48.2		
EMDESCO INC	29.9	45.2	48.1	29.9	45.2
LINDY PAVING INC	32.6	23.7	48.0	32.6	
BELL WALL & TRUSS LLC			47.8		

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
J B POINDEXTER & CO INC	70.0	88.8	47.7	70.0	88.8
ARCHER & BUCHANAN ARCHITECTURE LTD		51.4	47.7		51.4
HORIZON SIGNAL TECHNOLOGIES INC	1.7	33.8	47.7		33.8
ADOBE INC		60.9	47.3		
TRACK5MEDIA LLC			47.1		
HYDRO PAC INC			46.2		
IRALOGIX LLC	77.4	19.6	46.1	77.4	19.6
ZILLOW INC	4.9		46.1	4.9	
SELECT MEDICAL CORPORATION	63.1	92.7	46.1	63.1	92.7
T-MOBILE USA INC	5.0	50.1	45.9	5.0	
MULTI DIMENSIONAL INTEGRATION INC			45.8		
GWYNEDD MANUFACTURING INC	26.4	50.6	45.2	26.4	50.6
BIMBO BAKERIES USA INC	45.0	56.9	45.0	45.0	56.9
IDEAL SEMICONDUCTOR DEVICES INC		26.0	43.3		
GUIDING LIGHT VENTURES INC		66.6	43.0		
NUIX NORTH AMERICA INC	58.0	61.0	42.4		10.5
PEARL STREET TECHNOLOGIES INC	17.8	31.9	42.3	17.8	31.9
PRECISION SPRINKLER SERVICES INC	29.7	42.0	41.8		
TAVOTEK LAB INC		37.6	41.7		37.6
ACCIPITER SYSTEMS INC	25.3	60.3	41.7	13.5	50.0
CLAIR GLOBAL CORPORATION		21.0	41.5		21.0
H. F. LENZ CO.	12.2	3.4	41.5	12.2	3.4
INOVALON INC	160.0	215.6	41.3	160.0	215.6
RING CONTAINER TECHNOLOGIES PARENT LLC			41.1		
SKIBO ENERGY SYSTEMS LLC		29.6	40.3		21.8
CONTROL ASSOCIATES AND MFG LLC		41.1	39.7		41.1
SUVODA LLC	33.1	46.0	39.4	33.1	46.0
EXLSERVICE HOLDINGS INC		27.8	39.3		27.8
LAKE TOOL INC			38.7		
LEVANTE BREWING INC		194.5	38.2		
GOLDEN BROTHERS INC	2.2	52.1	37.7		52.1
DISPATCH BIOTHERAPEUTICS INC			37.3		
MARONDA INC		32.1	37.2		23.3
NEWELL RUBBERMAID INC			36.7		
GOLDENEYE PARENT LLC			36.6		
KTPINTERMEDIATEIIIIINC			36.4		
FETTEROLF CORPORATION	14.3	9.5	36.4	14.3	9.5
BRENTMARK SOFTWARE INC	23.6	28.4	36.3		
BOARDBOOKIT INC	8.8	20.3	36.1	8.8	20.3
C & D TECHNOLOGIES INC			36.0		
ERIE CUSTOM COMPUTER APPLICATIONS INC	17.7	18.5	36.0	17.7	18.5
CMW HOLDCO INC		21.4	35.5		
AMPHENOL THEMOMETRICS INC	8.3	20.2	35.0	8.3	20.2
XACT METAL INC			34.9		
LUNGPACER MEDICAL USA INC	60.3	45.1	34.8		45.1
CRAFTWELD FABRICATION CO INC			34.7		
BLUESPHERE BIO INC		151.1	34.6		
WESTLAKE PIPE & FITTINGS CORPORATION			34.6		
STREAMLIGHT INC	56.1	66.2	34.5	56.1	66.2
SSM GROUP INC		1.8	34.3		1.8

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
MACK TRUCKS INC			34.1		
SHEFFLER & CO INC	18.3		34.1		
TOUCHPOINT INDUSTRIES	9.2	4.7	33.7		
PENN COLOR INC	1.0		33.6	1.0	
THRIVE COMMERCE LLC	8.5		32.8	8.5	
GRAYBILL MACHINES INC	41.3	15.8	32.8		15.8
AE OUTFITTERS RETAIL CO			32.4		
VINTAGE MILLWORK AND RESTORATION LLC			32.2		
GHOST ROBOTICS CORPORATION	86.7	179.4	31.8		179.4
BPI HOLDING GROUP LLC			31.8		
DOCUSIGN INC			31.6		
BREEO LLC		34.6	31.6		34.6
STELLAR TECHNOLOGY SOLUTIONS LLC		27.2	31.3		
INTERNATIONAL CHEMICAL COMPANY			31.3		
TEVA PHARMACEUTICALS USA INC			31.3		
FRANKLIN FARMS EAST INC	25.0	8.8	31.0	25.0	6.3
HIGHPOINT TOOL & MACHINE INC	7.2		30.8	7.2	
KEYSTONE MACHINERY CORPORATION	5.9	18.1	30.7	5.9	18.1
GOODVILLE MUTUAL CASUALTY CO	21.5		30.5		
CARLISLE INTERCONNECT TECHNOLOGIES INC		50.2	30.5		50.2
MSA SAFETY INCORPORATED	92.9	61.4	30.1	92.9	61.4
HERSHEY ENTERTAINMENT & RESORTS COMPANY	9.6	15.2	30.1	9.6	15.2
GENEOS THERAPEUTICS INC	97.1	49.0	29.7		
CABIN HOLLOW BUTHCER SHOP INC			29.6		
PARAGON ENGINEERING SERVICES INC	40.6		29.3	40.6	
ECOPAX LLC		12.1	29.2		
MID ATLANTIC CAPITAL GROUP INC		15.5	29.1		
BLACK KNIGHT INFOSERV LLC		102.8	29.0		102.8
BOSCH REXROTH CORPORATION	10.6		29.0	10.6	
TGBAR INC			28.9		
ESTAT ACTUATION INC			28.7		
QLIKTECH INC	4.4		28.6	4.4	
PORT ERIE PLASTICS INC	2.5		28.6	2.5	
HAROLD BECK & SONS INC	4.3		28.3	4.3	
GEORGE KO INDUSTRIES INC		5.0	28.2		5.0
CLINONE INC		7.9	28.0		
J AND M ENGINEERING LLC			27.5		
NUTEC FACILITIES CORP	11.5		27.3	11.5	
EPICOR SOFTWARE CORPORATION	7.3		27.2	7.3	
GAMRY INSTRUMENTS INC	19.5	11.9	27.1	19.5	11.9
VICTAULIC COMPANY	261.1	191.4	27.1	261.1	191.4
AEROTECH INC	56.9	34.8	26.1	56.9	34.8
NORMA PENNSYLVANIA	0.7	8.4	26.1	0.7	8.4
AE DESIGN INC			25.9		
FORTRESS POWER LLC	4.1		25.9	4.1	
USSC HOLDING COMPANY			25.8		
CLOUDSHADOW LLC		6.9	25.6		
WHITETHORN DIGITAL LLC	6.3	11.5	25.5	6.3	11.5
TATE ACCESS FLOORS INC		7.7	25.5		7.7
NETBEEZ INC	38.9	51.6	25.4		3.8

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
WOLSTENHOLME ASSOCIATES LLC			25.4		
PHB INC	2.9		25.3	2.9	
DORMONT MANUFACTURING COMPANY		9.2	25.2		9.2
THE CERAMIC SHOP LLC	2.4	14.0	25.2	2.4	14.0
STORMLOOP TECHNOLOGIES LLC	2.3	6.1	25.2	2.3	
SOCIAL MEDIA INFORMATION LLC	24.0	28.1	25.1	24.0	28.1
SOLVAY USA INC			24.9		
VIIV HEALTHCARE COMPANY	7.9	29.2	24.8	7.9	29.2
ITERIS INC			24.7		
SYNERGETIC SOUNDS INC			24.3		
SUPERIOR TIRE & RUBBER CORP	3.8	4.9	24.3	3.0	1.8
SIGNATURE VACUUM SYSTEMS INC			24.3		
NUTRISYSTEM INC		49.2	24.2		49.2
B & H INDUSTRIES INC	9.5	59.8	24.2	9.5	59.8
GALERA THERAPEUTICS INC	61.6	73.6	24.2	61.6	73.6
MESH INC	49.2	32.2	24.1		
LIVANOVA USA INC	6.3	5.3	24.0	6.3	5.3
RB DISTRIBUTION INC			23.8		
PHYTOGENX INC	12.8	15.0	23.3	12.8	15.0
CDC SOFTWARE LLC	10.9		23.3	10.9	
RAJANT CORPORATION		38.6	23.2		
PASCO TOOL & PLASTICS INC	18.9	3.4	23.2	18.9	3.4
CMC ENERGY SERVICES INC			23.1		
CASCADES HOLDING US INC			23.0		
PANTHER LEARNING SYSTEMS INC	6.4	10.3	22.9	6.4	3.9
ADLER TECHNICAL SERVICES INC			22.9		
PETER MARGITTAI ARCHITECTS LLC	5.2	8.9	22.8		
PLEDGEPLATFORM INC	16.3	18.8	22.8	16.3	
TURN 5 INC		5.7	22.7		5.7
SNOWDON INTERNATIONAL LIMITED	6.7	29.9	22.6	6.7	10.6
ECTOBOX INC		16.3	22.3		16.3
ACUTEC PRECISION AEROSPACE INC	25.3	25.6	22.0	12.5	
II-VI AEROSPACE & DEFENSE INC	12.1	14.5	22.0	4.4	3.1
MICHELLE DROLLETTE ARCHITECT LLC			21.9		
PINMED INC	2.4	1.3	21.8	2.4	1.3
APOSTROPHE TECHNOLOGIES INCORPORATED	22.6	28.9	21.8		7.2
EDU LINK INCORPORATED	5.6	6.3	21.5	5.6	6.3
NEAR EARTH AUTONOMY INC	6.0	15.2	21.4	6.0	15.2
LIBERTY CC HOLDINGS LLC			21.4		
BETTS INDUSTRIES INC	18.4	15.9	21.4	18.4	15.9
ALLAN MYERS INC	7.2	40.6	21.2		
KARAS ENTERPRISES INC	7.8	12.8	21.1		
REMCOM INC	58.1	8.0	20.7	3.1	3.6
PACKAGING CORPORATION OF AMERICA		19.3	20.6		19.3
SNAKE CREEK LASERS LLC	1.6	2.9	20.5		2.9
IPEG INC		17.9	20.5		17.9
ADVANCED GLASS & METAL LLC	9.9	18.2	20.5	9.9	
CUSTOM METAL FABRICATING INC	15.2	18.9	20.1		18.9
LIFESENSORS INC			19.9		
ALLEGHENY SOFTWARE PUBLISHERS INC	7.7	14.6	19.8		11.5

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
O'NEAL	12.7	11.2	19.8	12.7	11.2
THE FIRE SOLUTIONS GROUP LLC			19.7		
SB GLOBAL FOODS INC	6.2	9.0	19.7	6.2	9.0
BIOCOAT INCORPORATED			19.7		
TINUITI INC			19.4		
CLARK ASSOCIATES INC	17.3		19.3	17.3	
SPARKCURES LLC	5.4	14.1	19.3	5.4	14.1
GREYSIGNAL INC		3.8	19.2		3.8
HALL INDUSTRIES INCORPORATED			19.1		
G E M MECHANICAL SERVICES INC	26.8	26.6	19.1	26.8	26.6
BOOSTPOINT LLC			19.0		
PRECISION PROFILES LLC	8.6	23.7	19.0	8.6	13.1
LIQUID FILLING SOLUTIONS LLC	26.6	50.1	18.8	26.6	50.1
WAZOODLE FABRICS LLC	15.0	24.0	18.5	15.0	24.0
NALCO COMPANY LLC		58.0	18.5		
CLOPAY BUILDING PRODUCTS COMPANY INC			18.5		
ARA HYDROACQUISITION HOLDINGS LLC			18.4		
WIMER FUEL INJECTION & TURBO LLC	12.3	0.1	18.4	12.3	0.1
WEBBER SMITH ASSOCIATES INC		33.4	18.4		
SHADOWFAX INC	14.3	20.8	18.3	14.3	
STRUCTURAL SERVICES INC			18.2		
GREENWICH TERMINALS LLC	13.8	23.0	18.2	13.8	23.0
ANTHONY FOLINO CONSTRUCTION INC	40.0	34.3	18.2	40.0	34.3
ALCOM PRINTING GROUP INC		1.0	18.1		1.0
YORK BUILDING PRODUCTS CO INC	20.1	10.2	18.1	20.1	10.2
MAVERICK DENTAL SOLUTIONS			17.9		
A RIFKIN CO			17.8		
SECURESTRUX LLC			17.7		
PRECISION MEDICAL INC	17.8		17.5	17.8	
CRABTREE ROHRBAUGH & ASSOCIATES INC		9.2	17.5		9.2
PALL CORPORATION			17.4		
SWEET NOTE BAKERY INC	16.6	18.4	17.3	16.6	18.4
GNC HOLDINGS LLC			17.3		
RIMSYS INC	22.4	8.6	17.2	22.4	8.6
MBIC HOLDINGS INC	8.8		16.8	8.8	
SIA SOLUTIONS LLC			16.7		
THICK INK LLC			16.7		
TECHFINO LLC			16.7		
TEAMOLOGY LLC		0.6	16.6		0.6
VEGAN TREATS INC	22.1	20.1	16.5	22.1	20.1
LEARNING TECHNOLOGIES GROUP INC			16.3		
FOX CHASE MANAGEMENT INC	27.9	48.0	16.3		48.0
GIORGI GLOBAL HOLDINGS	27.1	9.4	16.2		
FOLLETT CORPORATION			16.2		
K & H TECHNOLOGIES INC	3.9	2.0	16.0	3.9	2.0
ERIEZ MANUFACTURING CO			15.9		
SECURITY RISK ADVISORS INTERNATIONAL LLC		22.2	15.8		
HAMMEL COMPANIES INC	4.8	1.1	15.8	4.8	1.1
LODESTAR SOFTWARE SOLUTIONS INC		36.4	15.7		36.4
DIVERSIFIED COATINGS INC	1.8		15.6	1.8	

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
AMERICAN DENTAL DESIGNS INC	22.0		15.6	22.0	
PSNERGY LLC	11.4		15.5		
TEGRA ANALYTICS LLC			15.5		
ARIN TECHNOLOGIES	5.0	2.9	15.4		
KERITON INC	25.8	18.2	15.4	25.8	18.2
RILEY SALES INC			15.4		
DAVID WEBER CO. INC	0.3	16.7	15.3		16.7
LOANSTAR TECHNOLOGIES LLC			15.3		
ENGINUITY LLC	19.2		15.2	19.2	
GRAHAM PACKAGING COMPANY INC		74.9	15.2		74.9
MATERION BRUSH INC	8.7	17.1	15.2		17.1
B & D BUILDERS LLC	11.2	7.5	15.1	11.2	
ARAGRA TECHNOLOGIES CORP & SUBSIDIARIES			15.1		
KENSON PLASTICS INC			15.1		
EVRY'S BIO LLC			14.8		
APTAGEN LLC	21.1	14.5	14.7	21.1	14.5
PRECISION ROLL GRINDERS INC			14.6		
JOHN R BROMILEY COMPANY INC	25.2	14.7	14.4	25.2	14.7
KOOP TECHNOLOGIES INC		2.1	14.0		2.1
HANOVER IRON WORKS INC	5.0	6.3	14.0	5.0	6.3
BENCHMARK CONSTRUCTION COMPANY INC	20.8	71.2	13.9	20.8	
ADVANCED COOLING TECHNOLOGIES INC	45.1	32.7	13.9	45.1	32.7
PLASTIKOS INC	1.8	1.4	13.9	1.8	1.4
VIPER NETWORK SYSTEMS LLC	24.4	10.9	13.8	24.4	10.9
ADLER - SHORTS TOOL INC			13.7		
DECTRIS USA INC			13.7		
THE DVCC GROUP INC	9.6		13.7	9.6	
LAURELL TECHNOLOGIES CORPORATION			13.7		
ROSENBERGER USA CORP & SUBSIDIARIES	0.8	1.3	13.4	0.8	1.3
COLUMNTEK LLC	12.5	4.6	13.4	12.5	4.6
VERRICA PHARMACEUTICALS INC	13.0		13.3		
SIGHT AND SOUND MINISTRIES INC			13.3		
CLARIENCE TECHNOLOGIES	17.5		13.3		
E-TECH INDUSTRIAL CORP		4.9	13.2		4.9
MARATHON STUDIOS INC	7.5	5.5	13.1	7.5	
SOVASAGE INC			13.1		
DURAPODS LLC	23.6	29.7	13.1		
CHANT ENGINEERING CO INC			13.1		
MAGNESITA REFRACTORIES COMPANY			13.0		
LAKE REGION MEDICAL INC	27.8	31.4	12.9	4.9	2.4
INNOVU LLC		1.4	12.9		
READING PRECAST INC	6.1	17.4	12.8		17.4
YAZOO MILLS INCORPORATED	4.6		12.8		
VALUE FLOW GROUP INC		5.1	12.8		5.1
LAFRANCE CORPORATION		13.2	12.8		13.2
ICETEC ENERGY SERVICES INC		11.2	12.7		11.2
SCHOOL GATE GUARDIAN INC	4.0		12.6	4.0	
THE HERSHEY SALES COMPANY			12.5		
TRY TEK MACHINE WORKS INC	13.1	9.3	12.4		
INNOTECH LASER	16.3	5.1	12.3	16.3	

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
CAPITAL RX INC		11.2	12.3		
NANOSPEC INSTRUMENTS LLC DBA MAGNITUDE		4.1	12.1		4.1
WIEGEL MACHINE INC			12.0		
VALMONT INDUSTRIES INC			12.0		
LABCORP ENDPOINT CLINICAL INC		7.5	11.9		7.5
UNITED PARCEL SERVICE INC	16.4	15.2	11.9	16.4	15.2
HPT PHARMA LLC		10.3	11.8		10.3
UTZ BRANDS HOLDINGS LLC		38.8	11.8		38.8
DIAMOND DRUGS INC			11.8		
BLEND PRO INC	0.7	4.2	11.7		
AKZO COATING INC			11.7		
KERCHER ENTERPRISES INC		5.8	11.7		
DIVERSIFIED MACHINE INC	2.2	6.8	11.7	2.2	6.8
CERTARA USA INC		15.3	11.6		15.3
CRYSTAL INC PMC	9.7	8.2	11.4	9.7	8.2
UKG INC			11.4		
MAINSTREAM SWIMSUITS INC	7.4	16.3	11.4	4.9	
ELECTRON ENERGY CORP		7.8	11.4		7.8
MEDIUS AG LLC	7.6		11.4		
SUBURBAN PRECISION MOLD CO INC			11.4		
OZ COLLABORATIVE LLC	14.6	13.0	11.3	14.6	4.1
PACTIV PACKAGING INC		18.0	11.2		18.0
KENNAMETAL INC	41.9		11.2	41.9	
HIGH INDUSTRIES INC	56.1	30.2	11.2	56.1	30.2
MAHATHI INFOTECH LLC			11.2		
LABORATORY CORPORATION OF AMERICA HOLDIN		6.6	11.2		6.6
HYMED GROUP CORPORATION	0.5		11.1		
OCEAN GENOMICS INC		36.0	11.1		36.0
BEAVER STEEL SERVICES INCORPORATED	0.9	5.7	11.1		5.7
NEWMAN & COMPANY INC	1.4	5.9	11.1	1.2	5.9
ACOUSTICSHEEP LLC	10.0	2.7	11.1	10.0	2.7
NATIONAL REFRIGERATION & AIR	11.6	6.7	11.0	11.6	6.7
PORTER CONSULTING ENGINEERS PC		4.3	11.0		4.3
JAMES CRAFT & SON INC		5.0	10.9		5.0
TURN 14 DISTRIBUTION INC		10.1	10.9		10.1
AMERICAN CRANE & EQUIPMENT CORPORATION			10.9		
D COOPER WORKS LLC			10.8		
ARIECA INC	4.7	20.2	10.8	4.7	
CUSTOM LAMINATING CORPORATION	4.2	6.9	10.7		
INTUIDEX INC	5.6		10.7		
LARSEN & LANDIS INC			10.6		
SNAPIOT INC			10.6		
KEYSTONE WOOD SPECIALTIES INC			10.6		
LOGISTICS PLUS INC			10.5		
SURGENT HOLDING CORPORATION			10.5		
HR PHARMACEUTICALS INC	1.0		10.4		
J B KINTNER & SONS INC	6.4	21.2	10.4	6.4	21.2
OPENFORGE LLC	6.7	14.6	10.4		
THE YORK GROUP INC		9.0	10.3		9.0
FRONTAGE LABORATORIES INC			10.3		

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

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	2021	2022	2023	2021	2022
CJL ENGINEERING INC			10.3		
NET HEALTH SYSTEMS INC	24.0	14.7	10.2		14.7
FINITE CARBON CORPORATION			10.0		
LOOP SOFTWARE LLC		4.4	10.0		4.4
NEXTEVO INC		1.4	10.0		
MEDECISION INC			9.9		
K&L GATES LLP	20.9	24.0	9.9	20.9	24.0
OPTIMIZE LABORATORY CONSULTANTS LLC			9.9		
NADJITEHRANI MOHAMMAD			9.8		
TOSOH BIOSCIENCE LLC		9.3	9.7		
ONEXIA INC		13.5	9.7		13.5
PINE HILL MANUFACTURING LLC		9.6	9.6		
RADIUS HOLDINGS LLC	3.5	12.3	9.6		
THE OFFICE OF JAMES BURNETT INC	5.6	5.7	9.5		
DIGSAU ARCHITECTURE PC	59.9		9.5	59.9	
NB VENTURES INC		13.8	9.5		13.8
INDEPENDENCE STEEL INC	35.3	9.1	9.4	35.3	9.1
HARTMAN ORAL AND MAXILLOFACIAL SURGERY PC			9.3		
SOPHIA 1 INC			9.3		
EVOLUTION MOLDING SOLUTIONS INC			9.3		
VICTORY FIRE PROTECTION INC			9.3		
KOPP GLASS INC			9.3		
PENN WOOD PRODUCTS INC		2.0	9.3		2.0
STRAIGHT ARROW PRODUCTS INC	4.4	7.1	9.2		7.1
AMERICAN MILLWORK & CABINETS INC	26.1	2.9	9.1		2.9
NIELSEN KELLERMAN CO		11.2	9.1		11.2
DYCO INC		7.0	9.1		
STRATEGY ROBOT INC			9.0		
HINDLE POWER INC		6.3	9.0		
IRA G. STEFFY & SON INC	13.2		9.0	13.2	
ROADRUNNER RECYCLING INC			9.0		
PROCONEX INC			8.8		
BLADE DIAGNOSTICS CORPORATION		23.4	8.7		23.4
EKTO VR INC	3.3	4.3	8.7	3.3	4.3
STANDARD TOOL & MACHINE CO			8.7		
LTL COLOR COMPOUNDERS LLC			8.6		
VIDEON CENTRAL INC			8.5		
APPLIED CONTROL ENGINEERING INC			8.4		
NEW EQUATION LLC	5.2		8.4		
OPTAMO LLC	4.6	5.9	8.3		
HENDERSON BROTHERS INC		2.7	8.3		
KERMITOOL ACQUISITION COMPANY INC	7.4	4.6	8.3		4.6
JBS SCIENCE INC	1.6	24.7	8.3		
BEILER HYDRAULICS INC			8.1		
POLYK TECHNOLOGIES LLC	15.3	10.1	8.1	15.3	10.1
JONES HARVESTING LLC			8.1		
MGS INC	2.0		8.0	2.0	
SUPERIOR WALLS OF AMERICA LTD.		8.8	8.0		
KADCO CERAMICS LLC		0.4	8.0		
ARMSTRONG UTILITIES INC		6.5	8.0		6.5

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
PRATT ALLENTOWN CORRUGATING LLC			7.9		
IHEARTMEDIA ENTERTAINMENT INC	1.4		7.9	1.4	
GAP HOLDING COMPANY INC	20.1	58.2	7.9	14.0	40.8
SENSOR NETWORKS INC	115.5	14.9	7.9	115.5	12.1
NINJA NERD INC			7.9		
CRAYOLA LLC			7.8		
INSTRUMENTATION INDUSTRIES INC	21.1	24.0	7.8	21.1	24.0
AGROFRESH INC			7.8		
SIEMENS MOBILITY INC	14.7		7.8	14.7	
LOST TAVERN BREWING		3.3	7.7		3.3
RHI US LTD.		5.9	7.7		5.9
BARRY ISETT & ASSOCIATES INC	7.7	2.1	7.6	7.7	2.1
CHEMCO SYSTEMS LP			7.5		
SP ACQUISITION COMPANY LLC	8.5	9.9	7.5		9.9
EPISTEMIX INC		29.2	7.5		
RETURN LOGIC INC	56.0	59.8	7.5	56.0	59.8
INTEGRAL MOLECULAR INC	8.6	38.5	7.4	8.6	38.5
MOLECULAR DEVICES LLC	7.5	2.5	7.4		
ODESSA TECHNOLOGIES INC		7.5	7.3		5.9
FORMCRAFT INTERIORS INC		58.4	7.3		
WEST SHORE HOME HOLDINGS LLC		3.1	7.2		
ZYNERBA PHARMACEUTICALS INC	91.1	27.8	7.0	91.1	
MORGAN LEWIS & BOCKIUS LLP	17.8		7.0	17.8	
CONSTRUCTURAL DYNAMICS INC	6.3	8.8	7.0	6.3	8.8
REARICK TOOLING INC			7.0		
TRANS UNION LLC	10.0	1.5	6.9	10.0	1.5
PRATT CARLISLE CORRUGATING LLC			6.9		
L R COSTANZO CO INC	12.7	15.8	6.9	12.7	
EA DESIGN CONCEPTS INC			6.7		
GREINER INDUSTRIES INC	3.2		6.7	3.2	
WHIRLEY INDUSTRIES INC			6.7		
LANCONNECT INC	2.3		6.7	2.3	
PASS & SEYMOUR INC			6.6		
RLB VENTURES INC D/B/A BENCH DOGS	46.0		6.6	46.0	
TYOGA CONTAINER COMPANY INC			6.6		
VACHEAL LLC			6.6		
INVMETRICS HOLDINGS INC			6.6		
JEGLINSKI GROUP INC	6.2	2.2	6.4	2.1	
COMPETITION TIRE EAST INC			6.3		
NEW HEIGHTS LLC	4.0	5.6	6.3	4.0	
AXE AND SLEDGE SUPPLEMENTS INC			6.3		
OPTIXTAL INC	0.1	5.0	6.3		
REGUPOL AMERICA LLC	2.9		6.2	2.9	
OHM-LABS INCORPORATED		0.6	6.2		0.6
NUVENTIVE LLC	16.6	3.8	6.2		
AEGIS INDUSTRIAL SOFTWARE CORPORATION	9.3		6.2		
FIRST ADVANTAGE BACKGROUND SERVICES INC	1.0		6.2	1.0	
MILA INTERNATIONAL	1.8	1.5	6.2	1.8	
C U E INC	0.7	6.2	6.1	0.7	6.2
OMEGA SYSTEMS INTERMEDIATE HOLDINGS INC			6.0		

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

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	2021	2022	2023	2021	2022
VSI OF DELAWARE INC	1.7	3.2	5.9	1.7	3.2
GRIFFITH CONSULTING LLC			5.9		
NORO US HOLDINGS INC			5.9		
CIMA NETWORK INC	16.7	8.3	5.9	16.7	8.3
PHONETICS INC (DBA SENSAPHONE)			5.8		
PHOSPHOLUTIONS LLC	10.4		5.7	10.4	
JUST BORN INC		1.2	5.6		
CONCURRENT ELECTRONIC DESIGN AUTOMATION	20.8	24.7	5.6	17.7	
DBI INC			5.6		
UNITED METAL FABRICATORS INC	32.3		5.6	32.3	
FINISH THOMPSON INC	8.7	5.1	5.4	8.7	5.1
CARRIER CLASS GREEN INFRASTRUCTURE LLC	3.1	1.2	5.3		
PRATT (IMPRESS MANUFACTURING) INC			5.3		
DIGITAL GRAPES LLC	7.5		5.3		
PHOTONIS DEFENSE INC			5.2		
PECORA CORPORATION INC		4.6	5.2		4.6
PROUD DEVELOPMENT	3.3	2.5	5.2	3.3	2.5
DIGITAL COLOR GRAPHICS INC	4.2	5.0	5.2		
PENN ENGINEERING & MANUFACTURING CORP	7.5	14.5	5.2	2.5	2.2
GLOBAL METAL POWDERS LLC	6.4	5.5	5.0	3.2	5.5
EAGLE SPINCO INC			5.0		
BRANDING BRAND INC		2.2	5.0		0.9
SCHINDLER ELEVATOR CORPORATION			4.9		
MECCO PARTNERS LLC	10.2		4.9	3.5	
BORE TECH INC		49.6	4.9		
ARROW ELECTRIC INC	11.1	9.2	4.9	11.1	9.2
IHEARTCOMMUNICATIONS INC	3.6		4.8	3.6	
YUASA BATTERY INC	1.4	5.5	4.8	1.4	3.4
AMERICAN PROCESS LETTERING INC	16.4		4.8	16.4	
EAFAB CORPORATION	26.4	5.0	4.7	26.4	5.0
LEE INDUSTRIES INC	2.2		4.6		
IRIS USA INC			4.5		
DISSOLVES INC			4.5		
MILLVILLE MUTUAL INS CO			4.5		
KINGSBURY INC	2.5	14.1	4.5	2.5	14.1
ARMOUR TECHNOLOGIES INC	4.2	9.2	4.4	4.2	9.2
SPIRALGEN INC	14.1	3.5	4.3	14.1	3.5
SOUDERS INDUSTRIES INC	21.3	15.1	4.3	21.3	15.1
SIGNATURE DOOR INC	11.0	7.1	4.2	11.0	7.1
MID ATLANTIC STEEL FABRICATION LLC			4.2		
VISTACOM INC			4.2		
HALL TECHNICAL SERVICES LLC			4.1		
SENTINEL HOLDING INC			4.1		
RAVEN INDUSTRIES INC			4.1		
ZIPCORP INC AND (QSSS)	5.9		4.0	5.9	
PLAN B CONSULTANTS LLC			4.0		
PEQUEA MACHINE INC	2.7	3.7	4.0		3.7
BULK CHEMICALS INC	1.6	2.1	3.8	1.6	2.1
ENTASIS INC	7.9	8.6	3.8	7.9	
DYNAMET INCORPORATED	4.1	3.2	3.8	4.1	3.2

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

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	2021	2022	2023	2021	2022
BOSCH MANAGEMENT SERVICES CORP			3.7		
PHILLY AUTO LABOR SERVICES LLC		4.6	3.7		4.6
STERO THERAPEUTICS LLC		10.0	3.6		
HOLCIM US INC			3.6		
J & A TOOL COMPANY INC			3.5		
AMATECH INC			3.5		
MID ATLANTIC TIMBERFRAMES LLC	22.9	3.6	3.4	22.9	
NORTHEAST INDUSTRIAL MANUFACTURING INC	2.4	1.6	3.4	2.4	1.6
PRELUDE SYSTEMS INC			3.4		
BACKFLIPS INC			3.4		
IMWAVE INC		8.4	3.3		
THE MILNES CO. INC			3.3		
SIEMENS PRODUCT LIFECYCLE MANAGEMENT			3.2		
DURAWOOD PRODUCTS INC		5.5	3.1		
APOLLO NEUROSCIENCE INC	68.5	13.2	3.1	68.5	13.2
HYDAC CORP			3.1		
MORRIS KNOWLES & ASSOCIATES INC			3.1		
MCADOO & ALLEN INC	1.6	2.1	3.0	1.6	2.1
HECKENDORN SHILES ARCHITECTS LTD			3.0		
LOWE ENGINEERING COMPANY INC	1.8	1.3	2.9	1.8	1.3
SCHEERER BEARING CORP			2.9		
ABERDEEN ROAD COMPANY			2.8		
LINCOLN CONTRACTING & EQUIPMENT CO INC			2.7		
HARBOR BUSINESS COMPLIANCE CORPORATION	44.9	22.9	2.7	44.9	22.9
NORTAP TECHNOLOGY INC			2.7		
TU WAY MOBILE COMMUNICATIONS INC			2.7		
MEANINGSPHERE LLC			2.6		
NB ADVENTURES LLC			2.6		
BRADLEY PULVERIZER ENTERPRISES INC		0.6	2.6		
LEECH HOLDINGS LLC			2.5		
PYROTEK INCORPORATED	1.8	7.0	2.5	1.8	7.0
JAMES J ANDERSON CONSTRUCTION COMPANY		2.5	2.5		2.5
BASELINE CONTRACTING INC	4.3	5.7	2.4	4.3	5.7
HILLSIDE ACQUISITIONS GROUP LLC	0.4	0.9	2.4	0.4	0.9
MESSICK FARM EQUIPMENT INC		6.0	2.4		
FOX SPECIALTIES INC		1.3	2.3		1.3
SKANSKA KOCH INC			2.3		
ELECTRONIC IMAGING SERVICES INC			2.3		
ONEUP APP LLC	0.6	0.4	2.3	0.6	0.4
HACCP ASSURANCE SERVICES INC	5.2	9.5	2.2		
J BAUR MACHINING INC	2.3	2.1	2.2	2.3	2.1
AERONICS INC		5.2	2.1		5.2
WIKA MOBILE CONTROL LP		5.1	2.0		5.0
SOVEREIGN COMMERCIAL SERVICES INC	8.7		2.0	8.7	
PHILADELPHIA D & M INC	16.1		1.9	16.1	
PENNLAKE CORPORATION		1.3	1.9		1.3
OLYMPIC STEEL INC			1.8		
BINGAMAN & SON LUMBER INC			1.8		
J.D. ECKMAN INC	25.4	3.8	1.8	25.4	3.8
GARMAN BUILDERS INC	1.9	1.9	1.8		1.9

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

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NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
SAGE TECHNOLOGY SOLUTIONS INC	34.4	32.5	1.8	34.4	32.5
KATZ COMMUNICATIONS INC			1.7		
SYNATEK LP	2.6		1.7		
WEB TALENT LLC			1.7		
CRIMEWATCH TECHNOLOGIES INC	12.7	17.1	1.7	12.7	17.1
TRAC FABRICATION INC		14.0	1.5		
SOMERSET PLANNING & ENGINEERING SERVICES		3.5	1.5		3.5
MITSUBISHI ELECTRIC US INC	2.4	2.4	1.5	2.4	2.4
D-WISE TECHNOLOGIES INC			1.5		
AVERY DENNISON CORPORATION		2.9	1.5		2.9
D & E MACHINING LTD	0.3		1.4	0.3	
ACCU FIRE FABRICATION INC			1.4		
LANDSTUDIES INC	13.2		1.4		
NEW STANDARD CORPORATION	0.5	2.6	1.3	0.5	2.6
APTER INDUSTRIES INC	6.7	1.8	1.3	6.7	1.8
VANZYVERDEN INC	15.4	3.3	1.2		3.3
PITTMOSS LLC			1.2		
ALWARD TOOL	0.1		1.2	0.1	
ADVANCED TEXTILE COMPOSITES INC			1.2		
HENWIL CORPORATION	0.6	1.3	1.1	0.6	1.3
APPLIED NUTRITIONALS LLC	0.5		1.1		
WCJ PILGRIM WIRE LLC		0.5	1.0		0.5
NIGHT VISION DEVICES INC		1.6	0.9		
NURSING ABC INC	21.1	23.2	0.9	21.1	
CONEWAGO HOLDINGS INC	9.1		0.9		
CANTO TOOL CORPORATION	0.7	0.0	0.8	0.7	0.0
STOLTZ MFG LLC	0.1	0.2	0.8		0.2
ABRIDGE AI INC	120.9	205.5	0.8		
RGS PRODUCTS INC	2.2	3.7	0.7	2.2	
TOWERSTAR PETS LLC	7.1	4.1	0.7	6.7	4.1
RPI HOLDINGS LLC			0.7		
CDG ENVIRONMENTAL LLC		1.4	0.7		1.4
TIW TECHNOLOGY INC	4.1	4.7	0.7	4.1	4.7
GLOBAL FIRE PROTECTION GROUP LLC.	17.4	25.9	0.6	17.4	25.9
B & G MANUFACTURING CO INC	5.0	5.4	0.6	5.0	5.4
INGERSOLL RAND INDUSTRIAL US INC			0.5		
WAYNE AUTOMATION CORPORATION			0.5		
EASTWOOD HOLDCO LLC	4.7	4.9	0.5	4.7	4.9
CRANIAL DEVICES INC			0.5		
CARGAS SYSTEMS INC	9.4	10.9	0.5	9.4	10.9
GRANT STREET GROUP INC	17.7	2.5	0.4	17.7	2.5
MODERN INDUSTRIES INC	1.8	6.1	0.4	1.8	6.1
PMC ORGANOMETALLIX INC	1.4	0.5	0.1	1.4	
MILTON STEEL COMPANY	0.8		0.0		
MERCK SHARP & DOHME CORP		3,374.4			2,937.9
JANSSEN BIOTECH INC	1,148.7	938.0		895.5	938.0
PFIZER INC & SUBS		694.6			694.6
INTERNET PIPELINE INC		517.5			
ELI LILLY & COMPANY	303.0	498.6		216.9	498.6
CISCO SYSTEMS INC	210.0	318.2		210.0	318.2

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
ORGANON & CO		305.8			82.5
FARMERS PRIDE INC	113.5	304.1		113.5	
UNITY TECHNOLOGIES SF		278.2			
KRAMER-MARKS PC		271.1			
MICRO MOLD CO INC	24.8	249.2		24.8	249.2
ADVENT DESIGN CORPORATION	105.8	227.1			
LOXO ONCOLOGY INC		203.7			7.1
BILL ME LATER INC	137.2	201.8			9.3
PENN ENTERTAINMENT INC	140.8	201.6		140.8	201.6
RE2 INC	305.0	197.8			
PRODUCTION SYSTEMS ACQUISITION CO LLC	132.8	192.0		132.8	192.0
OSISOFT LLC		187.9			
GLOBUS MEDICAL INC		187.5			187.5
HARMAN DEUTSCH CORP		173.1			
NOVARTIS PHARMACEUTICALS CORPORATION		170.0			170.0
TMUNITY THERAPEUTICS INCORPORATED	145.6	167.7			
IMMUNOME INC		152.4			
SHARP EDGE LABS INC	104.0	143.5		104.0	143.5
DHUY ENGINEERING INC	123.7	122.5		123.7	122.5
PHASEBIO PHARMACEUTICALS INC	109.6	121.8			
GSM INDUSTRIAL INC		114.4			114.4
MAVEN MACHINES INC	119.7	113.5			
PHILANTHROPOS LLC		112.4			
CSLB HOLDINGS INC	509.1	110.7		29.7	110.7
BENTLEY SYSTEMS INC	127.7	110.5		127.7	110.5
OCUGEN OPCO INC		105.7			
LOCOMATION		105.6			
GURU TECHNOLOGIES INC	80.0	105.1		80.0	105.1
SITIO ARCHETECTURE & URBANISM		105.0			
ADVAITE INC		102.8			
DOUGLAS PHARMA US INC	160.8	102.2			19.3
HEAT EXCHANGE AND TRANSFER INC		102.1			27.4
AUTODESK INC		101.2			101.2
PULFLEX TECHNOLOGIES LLC	56.2	97.2			
DASSAULT SYSTEMES AMERICAS CORP		96.4			96.4
BMTX INC		86.3			
EFE LABORATORIES	29.0	85.9		29.0	19.4
MULHERN AND KULP STRUCTURAL ENGINEERING		85.4			85.4
ABBOTT ACQUISITION COMPANY LLC	59.4	85.1		59.4	85.1
ORASURE TECHNOLOGIES INC		84.2			84.2
ENERGY MANAGEMENT SYSTEMS INC	36.7	83.7		36.1	17.7
BUCKLEY FUTURES LLC		82.6			
COGNISTIC LLC	17.3	77.2		17.3	77.2
ADT INC		76.4			
ELSEVIER INC	143.8	73.7		143.8	73.7
MEDCRYPT INC	59.5	72.8			
BRASKEM AMERICA INC	52.0	69.7		52.0	69.7
LIFEBRAND INC		69.1			69.1
HYDRO EXTRUSION USA LLC		67.7			
COOK MYOSITE INCORPORATED	44.2	67.3			

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
OVERLY DOOR COMPANY		66.2			66.2
CHEWY INC		63.7			
ABC YORK INC		62.0			
DESIGN MANAGEMENT GROUP	9.9	61.5			
MITSUBISHI ELECTRIC POWER PRODUCTS INC	31.8	60.2		12.9	35.2
THE OTT GROUP INC	33.6	60.1		33.6	60.1
SETEX TECHNOLOGIES INC	50.2	57.8		50.2	57.8
J.M. HUNT ASSOCIATES INC		57.6			34.6
TELETRACKING TECHNOLOGIES INC	82.6	57.3		38.4	57.3
CONTAINER RESEARCH CORPORATION	13.5	57.3		13.5	57.3
CAMPUS ESP INC	33.2	56.4		2.2	
COMPU CRAFT FABRICATORS INC	16.1	55.8		10.9	38.0
DRAEGER MEDICAL SYSTEMS INC	41.7	55.6		41.7	55.6
X-NAV TECHNOLOGIES LLC	29.9	54.8		29.9	
MEI INC	36.4	54.6		36.4	54.6
HATZEL&BUEHLER INC	25.5	53.8		25.5	53.8
GECKO ROBOTICS INC	87.9	53.5		87.9	53.5
ARCCA INCORPORATED	10.5	53.2		10.5	53.2
VIZINEX LLC		52.8			52.8
BRIO DESIGNS PARTNERS LLC	40.3	52.6		7.8	39.1
GENERAL DYNAMICS LAND SYSTEMS INC	69.7	52.4		69.7	52.4
AEC GROUP LLC	46.6	52.1		46.6	52.1
IQVIA INC	175.7	51.9		175.7	51.9
QUIRE LLC	49.4	51.0		49.4	51.0
SAPIENS USA INC	15.2	50.4		15.2	50.4
BLASTPOINT INC		50.3			
ASCENSUS HOLDINGS INC	19.8	49.2		19.8	49.2
ALPHATHERA LLC	27.4	48.9			
US SPECIALTY FORMULATIONS LLC		48.0			
GREYGTI INC DBA MOBINITI	47.3	47.3			47.3
RUBY RENEWABLE RESOURCES LLC	46.3	47.3		46.3	14.0
ECOTECH INC	7.3	46.9			
QINTEL LLC		46.5			
AUGUSTINE PLASTICS INC	83.1	46.2		56.6	46.2
RENCOMGROUP LLC		45.4			
SYNERGY MEDIA GROUP LLC	79.2	44.3		33.8	
LANNETT COMPANY INC		44.3			
JOHNSTON MECHANICAL LLC	34.7	42.7		34.7	42.7
ADRIANN HOOKS		42.7			
ADVANCED NETWORK PRODUCTS INC	56.5	42.6			
PNEU DART INC	47.7	42.6		47.7	42.6
NIMBUS ROBOTICS INC		41.7			
CAMELOT US ACQ. LLC	96.4	41.7			
DUCK DUCK GO INC	18.7	41.6		18.7	41.6
VERTICAL SCREEN INC	8.2	41.3			
STRADOS LABS LLC	22.1	41.3		22.1	
EMINENCE ENTERTAINMENT ENTERPRISES LLC		41.0			41.0
ALP SUPPLY INC	11.0	40.6		11.0	
REALYZE INTELLIGENCE INC		40.3			
BERKADIA COMMERCIAL MORTGAGE LLC	51.0	40.2		51.0	4.0

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
OTTERTUNE INC		40.2			
JETPACK WORKFLOW INC	74.2	40.2		74.2	40.2
DIETZ & WATSON INC		39.9			39.9
GREENPHIRE LLC	51.5	39.1		37.7	39.1
CORE BUSINESS SOLUTIONS INC	41.5	39.1		4.5	
OAT FOUNDRY LLC		38.6			38.6
PROXICAST LLC	27.0	38.3		27.0	38.3
SUNTEX INTERNATIONAL INC		37.8			37.8
PROGENICS PHARMACEUTICALS INC		37.8			37.8
INTEGRATED DEVELOPMENT PARTNERSLLC	41.8	37.5		41.8	37.5
JARUS TECHNOLOGIES INCORPORATED	29.9	37.4		2.8	3.8
HANOVER FOODS CORPORATION	8.5	37.2			
ROADBOTICS INC	113.7	36.9		113.7	
COLORCON INC	7.5	35.9		7.5	35.9
SCHILLER & HERSH ASSOCIATES INC		35.1			35.1
FAZIO MECHANICAL SERVICES INC	26.1	34.9			34.9
CURIO HOLDING COMPANY DBA MOBILE OUTFITT	56.1	34.8		56.1	34.8
B & B DESIGNED SYSTEMS INC		34.7			34.7
BOEING CO	818.4	34.6			
AES CLEAN TECHNOLOGY INC	18.0	34.6		18.0	
LABCORP DRUG DEVELOPMENT INC		34.0			34.0
AAYUNA INC	39.8	33.8		39.8	
AVID RADIOPHARMACEUTICALS INC	28.3	33.7		21.6	33.7
JOBBO INVESTMENTS INC	8.0	33.0		8.0	33.0
GOLDEN PROPORTIONS MARKETING INC	23.5	32.9			
NSV INC	16.0	32.9		16.0	
NOVASENTA INC	22.4	32.5			32.5
KOVLAR PRECISION MANUFACTURING INC		32.3			14.0
EBAY INC		32.0			32.0
FQT HOLDING COMPANY LLC	70.0	31.3		70.0	
TRINITY AUTOMATED SOLUTIONS INC	28.1	30.6		28.1	30.6
TAVANTA THERAPEUTICS INC		30.5			30.5
ENERGY TRANSFER SOLUTIONS LLC		30.4			30.4
LIBERTY CC BEVERAGES PARENT LLC	23.5	30.2		23.5	30.2
LEONIDAS HOLDCO INC		30.2			30.2
DUANE MORRIS LLP		29.7			29.7
KIBOW BIOTECH INC	0.7	29.5			
METSO OUTOTEC USA INC		29.4			29.4
HYTECH TOOL & DESIGN CO	18.7	29.3		18.7	29.3
VENATORX PHARMACEUTICALS INC	21.6	29.2			
KEMPER EQUIPMENT INC		28.8			
PENN STATE CONSTRUCTION J&D LLC	40.1	28.5		40.1	28.5
CARNEGIE ROBOTICS LLC	51.0	28.1		51.0	28.1
MEDICAL PRODUCTS LABORATORIES INC		27.6			27.6
MCCARTHY ENGINEERING ASSOCIATES INC		27.4			
COMTECH INDUSTRIES INC		27.1			13.1
HYDAC TECHNOLOGY CORPORATION		27.0			27.0
TREATSPACE INC		26.9			17.4
JUST PLAY PRODUCTS LLC	14.4	26.9			
FOREST DEVICES INC	7.1	26.9		7.1	26.9

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
ALLTURNA LLC	20.0	26.9			26.9
NAMSCO PLASTIC INDUSTRIES INC	30.2	26.4			
VENANGO STEEL INC		25.8			25.8
PENN WELD INC	16.8	25.8		16.8	25.8
REHAT LLC D/B/A NOCTEM HEALTH		25.4			
TROY GROUP INC	3.4	25.1			
STARN TOOL & MANUFACTURING COMPANY	5.5	24.9		5.5	0.9
CAPTECH VENTURES		24.5			24.5
MARLAN TOOL INC		24.3			
NSI NEAL SYSTEMS INC		23.9			23.9
INNOVATIVE FINANCING SOLUTIONS		23.5			23.5
LAGOS INC	3.3	23.1		3.3	23.1
TELEDYNE SCIENTIFIC & IMAGING LLC		23.0			23.0
CRC INDUSTRIES INC	5.0	22.8		5.0	22.8
FAIRYGENE INC		22.3			
INGMAR MEDICAL LLC	35.6	22.2			
SITE DESIGN CONCEPTS INC		22.1			22.1
CRODA INC		22.1			22.1
HARRY J. LAWALL & SON INC		22.1			
SHEETZ INC	25.6	22.0		25.6	22.0
XYNTEK INCORPORATED		22.0			
DELCO INNOVATIONS	59.8	21.9		59.8	
AMUNEAL MANUFACTURING CORP	19.7	21.5			
ADRICH INC		21.5			21.5
THOMAS H CLIGAN ELECTRICAL SERVICE		21.3			21.3
MORTGAGE CONNECT LP		21.2			21.2
PENN AIR & HYDRAULICS CORP	10.0	21.1		10.0	
BRD NOISE & VIBRATION CONTROL INC		20.8			20.8
SPICES INC	9.6	20.5		9.6	7.0
ELSNER ENGINEERING WORKS INC		20.4			
FLEXICON INC	10.3	19.8		10.3	19.8
LIVE WELL CHIROPRACTIC PC		19.8			19.8
REYNOLDS & REYNOLDS ELECTRONICS INC		19.6			19.6
SIMONA AMERICA GROUP INC		18.9			
CONTROLS SERVICE & ENGINEERING CO.		18.9			18.9
MILNES ENGINEERING INC	37.4	18.9		37.4	18.9
ENERSYS ADVANCED SYSTEMS INC	4.8	18.7			1.1
FYNYDD LLC	14.3	18.5		8.5	
VELTEK ASSOCIATES INC	43.9	18.5			
TRI-STATE TECHNOLOGY PROFESSIONALS INC		18.5			18.5
INTERTEK USA INC		18.4			
K S A & D INC		18.3			18.3
AMERICAN MADE LLC		18.3			
GARDNERS CANDIES INC	4.9	18.2		4.9	18.2
FINISH TECH CORP	13.1	18.2		13.1	
GNOME ARCHITECTS LLC		18.2			5.7
CHRISTOPHER D CERA	12.5	17.9			
THE CLOUSER GROUP	21.1	17.5		21.1	17.5
INNOVATIVE SOLUTIONS COMPANY USA		17.0			
SONOCO PROTECTIVE SOLUTIONS INC	17.7	16.9		17.7	16.9

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
APEXDROP LLC	15.5	16.7		12.0	16.7
TITANIUM METALS CORPORATION		16.6			16.6
CENERO LLC	10.6	16.4		10.6	16.4
BASEBALL INFO SOLUTIONS INC	16.6	16.3			
HEBI ROBOTICS INC	28.4	16.3		6.0	16.3
COBHAM ADVANCED ELECTRONIC SOLUTIONS INC	187.7	16.3			16.3
PAMLICO COATINGS INC		16.0			1.4
FLUITRON INC	2.7	16.0		2.7	16.0
THE SHEWARD PARTNERSHIP LLC	67.9	16.0		67.9	16.0
ALLEGHENY PERFORMANCE PLASTICS LLC	3.9	15.9		3.9	15.9
PATHWAY ACCESSIBILITY SOLUTIONS INC	4.8	15.4		4.8	
GRUE & BLEEN LLC		15.4			1.5
1SEO TECHNOLOGIES INC		15.1			15.1
DATA MACHINE LLC	8.7	15.1		8.7	
AMERICAN PRECISION INDUSTRIES INC	3.8	15.0		1.5	4.4
QUALITY BRIDGE & FAB INC	15.3	15.0		15.3	15.0
ESH COMPUTER CENTER INC		15.0			15.0
DAGOSTINO ELECTRONIC SERVICES INC		14.9			14.9
TRAFFIC PLANNING AND DESIGN INC	24.1	14.9		24.1	
PROCESS APPLICATIONS LIMITED	10.0	14.8		10.0	
ASTARTE MEDICAL PARTNERS INC	30.3	14.7			
FS-AMERICA INC & SUBSIDIARIES		14.7			3.6
NUVISION ENGINEERING INC		14.7			5.6
MARTINS FAMOUS PASTRY SHOPPE INC	16.4	14.6		16.4	14.6
FLEXIBLE COMPENSATORS INC		14.5			14.5
EMEH INC		14.5			
INVISIBLE SENTINEL INC	14.0	14.4		2.7	8.0
STONER INCORPORATED	5.0	14.4		5.0	
MISFITS MARKET INC		14.3			
ULTRA POLY CORPORATION		14.2			14.2
PREMIER AUTOMATION HOLDINGS INC	17.0	14.2		17.0	14.2
BERRY SOLUTIONS GROUP LLC	8.1	14.1		8.1	14.1
PRINT MAIL SOLUTIONS INC	25.5	14.0		25.5	
C & J INDUSTRIES INC	0.5	14.0			
FRENCHCREEK PRODUCTION INC	16.7	13.8		16.7	
TUDI HOLDINGS INC	3.0	13.6			
SPOTME FITNESS CORPORATION	23.3	13.6			
RASER ACQUISITIONS LLC	25.5	13.5		25.5	
HALLER ENTERPRISES	12.1	13.5			
DYNAMIC ENERGY SOLUTIONS LLC	17.5	13.5		17.5	
BARVISION LLC		13.5			13.5
CURRY SUPPLY HOLDINGS INC	45.0	13.5		45.0	13.5
LYGENESIS INC	7.3	13.5			
BRUNNER INDUSTRIAL GROUP	11.5	13.4		11.5	13.4
MYSTIC ASSEMBLY & DECORATING CO. INC	30.1	13.4			13.4
PANACEA TECHNOLOGIES INC	47.1	13.3		47.1	
THE RAILROAD ASSOCIATES CORPORATION	13.3	13.3			13.3
PERFIDO WEISKOPF WAGSTAFF & GOETTEL		13.1			
BECKMAN COULTER INC	13.4	12.8		13.4	12.8
OMEGA SYSTEMS CONSULTANTS INC	32.6	12.8			12.8

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
SARRIS CANDIES INC	58.9	12.7			12.7
MSG HOLDING LLC	14.0	12.7		14.0	12.7
TAYLOR STRUCTURAL ENGINEERS		12.6			12.6
INDEPENDENCE FIRE SPRINKLER COMPANY LLC	10.3	12.5			
JANDM FLUIDICS INC	9.2	12.3		9.2	12.3
4FRONT SOLUTIONS LLC		12.3			
TALKMEUP INC	12.2	12.2			
THE SPEARHEAD GROUP INC		12.2			12.2
DOBIL LABORATORIES INC	9.5	12.0		9.5	12.0
COMPLIANCE SERVICES LLC		11.9			11.9
PRIZER PAINTER STOVE WORKS		11.9			
D'ANGELO TECHNOLOGIES LLC		11.8			
BEACON HEALTH SOLUTIONS INC		11.8			
SIGNATURE CUSTOM CABINETRY INC		11.8			11.8
BLUESTONE COMMUNICATIONS INC	5.6	11.7		5.6	
MIWD HOLDING COMPANY LLC	20.4	11.7			
OLIVER SPRINKLER CO. INC	7.1	11.6		7.1	11.6
BORTON LAWSON HOLDING CO INC	9.2	11.6		9.2	11.6
MRO CORPORATION		11.6			11.6
ERESEARCHTECHNOLOGY INC		11.4			11.4
AOG HOLDINGS INC		11.3			11.3
S & W RACE CARS & COMPONENTS INC		11.2			
FLINCHBAUGH COMPANY INC	4.2	11.2		4.2	11.2
BLATEK INDUSTRIES INC	7.0	11.1		7.0	11.1
GRUDI ASSOCIATES		11.1			8.8
PHRQL INC		11.0			
DURA METAL PRODUCTS CORP	56.8	10.9		56.8	10.9
REACTION BIOLOGY CORPORATION		10.8			
ALTAIR INTEGRATED SERVICES LLC	40.7	10.8		22.7	10.8
AFP ADVANCED FOOD PRODUCTS LLC	11.6	10.7			
AGR INTERNATIONAL INC		10.7			10.7
GENERAL TRANSERVICE INC		10.5			10.5
ARCH MASONRY INC		10.4			
SJ CONSULTING GROUP INC		10.4			10.4
PENCOYD IRON WORKS INC	21.4	10.3			
HENDRICK MANUFACTURING COMPANY	1.0	10.3			
DOCUMENT SOLUTIONS GROUP INC		10.2			
CRESCENT INDUSTRIES INC		10.2			10.2
BOHLER ENGINEERING PA LLC	43.6	10.2		43.6	10.2
FAIRMOUNT FOUNDRY INC	0.1	10.2			10.2
SOLAR TECHNOLOGY INC	2.1	10.1			10.1
PENDU MANUFACTURING INC		10.0			
CAMCO MANUFACTURING INC	11.3	10.0			
EHMKE MANUFACTURING CO INC	2.4	9.9			
NEU DYNAMICS CORP	5.1	9.8		5.1	9.8
SMOOTH-ON INC		9.7			9.7
VWR FUNDING INC	44.3	9.6		44.3	9.6
DUTCH CLIPS LLC		9.3			9.3
CADENCE DEVICE INC	8.3	9.3		1.2	0.7
HOLBROOK TOOL & MOLDING INC	4.4	9.3		4.4	9.3

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
CENTURION CONSTRUCTION GROUP LLC	8.2	9.2			9.2
WAMPOLE MILLER INC	6.2	9.1		6.2	
UNITED PARCEL SERVICE GENERAL SERVICES	15.7	9.1			
CHROMATAN INC	31.7	9.1		31.7	
EA FISCHIONE INSTRUMENTS INC		9.1			
AIIR CONSULTING LLC		9.0			9.0
BAINBRIDGE HEALTH INC		9.0			
ONCORA MEDICAL INC		8.9			
ARTSKILLS INC	11.8	8.7			
JAREX ENTERPRISES LLC		8.7			8.7
SENSE TECHNOLOGY INC		8.7			8.7
DHRPROLLC		8.7			
VECTOR SYSTEMS	24.6	8.6		24.6	8.6
EUROFINS ABRAXIS INC	4.9	8.6			6.9
PHASE SHIFT CONSULTING LLC		8.6			8.6
FED REPORTING LLC		8.6			8.6
ANHOLT TECHNOLOGIES INC	13.4	8.6		13.4	6.2
ACCUDYN PRODUCTS INC		8.5			8.5
THUBRIKAR AORTIC VALVE INC		8.4			
CANNON INSTRUMENT COMPANY		8.4			
LCR EMBEDDED SYSTEMS INC		8.3			
MODERN CABINET AND CONSTRUCTION INC	5.8	8.3		5.8	8.3
PRODUCT EVALUATION SYSTEMS INC		8.2			
METAPHASE TECHNOLOGIES INC		8.2			8.2
E B ENDRES INC	18.8	8.1		18.8	8.1
TRICE MEDICAL INC	7.7	8.1			
BERK INTERNATIONAL LLC	19.1	8.1		19.1	8.1
TRACEY MECHANICAL INC		8.0			
FRONT STREET REFRIGERATED SERVICES LLC	0.8	8.0		0.8	8.0
PRESCIENT WEATHER LTD	4.9	7.9		4.9	7.9
GENERAL DYNAMICS MISSION SYSTEMS INC	19.7	7.9		19.7	7.9
SMS GROUP INC		7.8			7.8
H B FRAZER COMPANY - PENNSYLVANIA		7.7			7.7
IDL WORLDWIDE INC	8.2	7.5		8.2	7.5
AVANCEON LP	9.3	7.5			
SILVERTIP INC	14.7	7.4		14.7	7.0
GT GLOBAL HOLDINGS INC	183.3	7.4			
LIFE CYCLE ENGINEERING INC	2.9	7.4		2.9	7.4
OCTECH LLC	12.1	7.4			7.4
ADVANCE MANAGEMENT SERVICES LLC	20.9	7.3			
MANIFESTO LLC		7.3			
SOFTERWARE INC		7.3			7.3
LAPP MILLWRIGHT LLC		7.2			
PAK-IT DISPLAYS LLC	45.3	7.2		37.6	
RJC MANUFACTURING SERVICES LLC	10.7	7.1		10.7	
THERM OMEGA TECH INC		7.1			7.1
DUTCHLAND INC	1.5	7.0		1.5	7.0
BOULDEN COMPANY INC	6.6	7.0			
BIOCLINICA INC		7.0			7.0
C360 TECHNOLOGIES INC	28.3	6.9			

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
JOHN ROCK INC		6.9			
PVE LLC	3.9	6.8			6.8
M H EBY INC		6.7			
NEW PRODUCT TECHNOLOGIES INC	4.1	6.6		4.1	6.6
BENEFIT ALLOCATION SYSTEMS LLC	9.2	6.5		9.2	6.5
1SEO.COM		6.5			
PYROTECHNICS MANAGEMENT INC	6.4	6.3		6.4	6.3
STERMAN MASSER INC		6.2			
HAMPTON HOURLY ADMINISTRATION LLC		6.1			6.1
KEYSTONE BIOANALYTICAL INC		6.1			
SIMPLE ORIGIN	1.1	6.0			6.0
SPECIALTY SEAL GROUP INC		6.0			6.0
CHANNELAPE INC	32.3	6.0			
EUROFINS LANCASTER LABORATORIES INC	27.0	5.9		27.0	5.9
WRIGHT LABS LLC	10.0	5.8		10.0	5.8
D. G. YUENGLING & SON INC	8.5	5.4		8.5	
J.A.C.K. WOOD PRODUCTS LLC	2.2	5.4		2.2	2.2
LA CASA NARCISI INC		5.3			
RACESENG INC	6.6	5.2		6.6	5.2
SHUMAKER INDUSTRIES INC	3.2	5.2		3.2	5.2
L & H SIGNS INC	14.3	5.1		14.3	
AMPHENOL INTERCON SYSTEMS INC	12.1	5.1		9.0	
ESI ACQUISITION & SUBSIDIARY		5.0			
PENN MANUFACTURING INDUSTRIES INC		4.9			4.9
BLAIR MEAD DESIGNS LLC		4.9			4.9
BLAIR STRIP STEEL COMPANY		4.9			4.9
CEPHALON INC		4.9			
BIGBEE STEEL & TANK CO.	1.0	4.8		1.0	4.8
ARVOS SCHMIDTSCHKE SCHACK LLC	1.4	4.7			1.3
SAY PLASTICS INC	12.6	4.7		12.6	4.7
4DH LLC		4.6			
BLAIR IMAGE ELEMENTS		4.6			4.6
EADS GROUP INC	3.1	4.6		3.1	4.6
AMRING PHARMACEUTICALS INC	14.4	4.5		14.4	4.5
CONESTOGA WOOD SPECIALTIES CORPORATION		4.5			4.5
PRECISION CUT INDUSTRIES INC	10.4	4.5			4.5
PEACOCK LABORATORIES	1.4	4.5			
V. T. GRAPHICS INC		4.5			4.5
GLENN O. HAWBAKER INC		4.5			4.5
R A WALTON & CO INC	2.8	4.4		2.8	4.4
ALLEGHENY PETROLEUM PRODUCTS COMPANY	11.0	4.4		11.0	4.4
ABITARE DESIGN STUDIO LLC	6.3	4.3		6.3	
GOEPPERT LLC	6.9	4.3			
HOSLER CORP	6.9	4.2		6.9	4.2
DELTA INFORMATION SYSTEMS INC	9.4	4.2			
ADVANCED POWDER PRODUCTS INC		4.2			4.2
SLATE PDO LLC DBA LIGHT TOOL & MACHINE		4.1			4.1
B J TERRONI CO INC		4.1			
LANCASTER SWINE HEALTH SERVICES		4.1			
BEN PEOPLES INDUSTRIES LLC	7.1	4.1		7.1	4.1

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

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NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
SK TOOL AND DIE INC	2.6	4.0			
IMPACT PROTEOMICS LLC	2.9	4.0			
REFLEXION INTERACTIVE TECHNOLOGIES INC	6.4	3.8		6.4	3.8
HETTRAN B INC		3.8			3.8
TIMBERLANE INC	3.1	3.5		3.1	3.5
DELSERRO ENGINEERING SOLUTIONS INC		3.4			3.4
PSC BIOTECH CORPORATION		3.4			3.4
ADEPT GROUP HOLDINGS LLC	40.1	3.4		30.1	
STARKIST CO	8.1	3.4		8.1	3.4
HANNA TRANSFER COMPANY NORTH		3.3			3.3
WOLFGANG OPERATIONS LLC		3.3			
ACTION MEDICAL TECHNOLOGIES LLC		3.3			3.3
GENTEX CORPORATION & SUBSIDIARIES		3.3			3.3
ALPINE SALES & RENTAL CORP	9.9	3.2		9.9	3.2
PDQ INDUSTRIES INC	4.0	3.0			
TECHKNOWSERV CORPORATION		3.0			3.0
AVERY DENNISON RETAIL INFORMATION		3.0			3.0
YARDS BREWING COMPANY LLC		2.9			
FOUR SEASONS PRODUCE INC	22.7	2.9		22.7	2.9
SAPPHIRE K12	6.6	2.8			2.8
CLIMATECH HOLDING CO.	9.4	2.8		9.4	2.8
CONFIRMED LLC		2.7			2.7
NCA TECHNOLOGIES INC		2.7			2.7
GET WIRELESS INC	2.2	2.7			
DYNAMIC MANUFACTURING LLC		2.7			2.7
INDUSTRIAL VISION SYSTEMS INC	1.5	2.7		1.5	2.7
LUMIS CORP		2.7			2.7
SHUBREW LLC		2.7			
LORNE G. SEIFERT LLC	4.4	2.7		4.4	2.7
ALTRA INDUSTRIAL MOTION CORP.	24.3	2.7		24.3	2.7
CLEARLY CLEAN PRODUCTS LLC		2.6			
MCC INTERNATIONAL INC	8.9	2.6			
KANE INNOVATIONS INC	5.6	2.6			2.6
BOOSE AT CORNWALL INC	2.4	2.6			
SIEMENS MEDICAL SOLUTIONS USA INC	21.5	2.5		21.5	2.5
ALPHA TECHNOLOGIES SERVICES INC	2.5	2.5		2.5	2.5
SPECIALTY FABRICATION & POWDER COATING	2.2	2.4		2.2	
REED MANUFACTURING COMPANY	2.6	2.4		2.6	2.4
CKJK LLC	1.0	2.4		1.0	1.0
HRANEC SHEET METAL INC		2.4			2.4
AVERTRA CORP		2.3			
COCALICO DISTRIBUTION LLC		2.2			
AMERICAN TEXTILE COMPANY INCORPORATED		2.2			
SIGNODE INDUSTRIAL GROUP US INC	2.7	2.2			
FIVE ELEVEN PHARMA INC		2.1			
ASTLEY PRECISION MACHINE COMPANY INC	3.9	2.1		3.9	2.1
SEALSTRIP CORPORATION		2.0			
POLYMER PRODUCTS COMPANY INC	0.0	2.0		0.0	2.0
GENERAL ECOLOGY INC		2.0			2.0
TRINITY PLASTICS INC		2.0			2.0

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
GUY CHEMICAL COMPANY INC	4.2	2.0			
WELD TOOLING CORPORATION	0.0	1.9		0.0	1.9
CONTROLLED MOLDING INC		1.9			1.9
STARGAZER CAST IRON LLC	1.7	1.9		1.5	1.9
GREEN LAWN FERTILIZING LLC		1.8			1.8
MAKERPLACE INC	3.2	1.8		3.2	1.8
RJ LEE GROUP INC	12.7	1.8		12.7	1.8
TILO INDUSTRIES		1.8			
INCLINATOR COMPANY OF AMERICA	2.4	1.8		2.4	1.8
KALINOWSKI MACHINE LLC	1.4	1.8		1.4	
SLOAN BROTHERS COMPANY		1.7			
PRIMBIO RESEARCH INSTITUTE LLC		1.7			1.7
S & S PROCESSING INC	1.2	1.6			1.3
THE CLEMENS FAMILY CORPORATION	94.5	1.6		94.5	1.6
JERSEY SHORE STEEL CO	0.9	1.6			
OROURKE & SONS INC		1.6			1.6
COLORFIN LLC	2.5	1.5			1.5
WEPCO INC	0.7	1.5			
POLYMER MOLDING INC	0.7	1.4			
NEVILLE CHEMICAL COMPANY	3.3	1.4			
RENERVA LLC		1.4			1.4
C & R DIRECTIONAL BORING LLC	7.9	1.4		7.9	1.4
SINTERFIRE INC	3.8	1.3		3.8	1.3
DYER QUARRY INC	2.2	1.3		2.2	1.3
LOBAR SITE DEVELOPMENT CORPORATION	17.4	1.3		17.4	1.3
BERNER INTERNATIONAL LLC		1.3			
MISCO PRODUCTS CORPORATION	5.3	1.3		5.3	1.3
TURNKEY TAXES INC	0.4	1.3		0.4	1.3
COME READY FOODS LLC	2.5	1.2			
POLYMERSHAPES HOLDINGS INC		1.2			1.2
ELIKSA THERAPEUTICS INC		1.2			
AMERICAN MADE NUTRITION LLC		1.2			
KRAEMER TEXTILES INC	7.4	1.2		7.3	1.2
WOLF TECHNOLOGIES LLC	1.7	1.1		1.7	1.1
IMPILO INC		1.1			
CRYOCONCEPTS LP	35.1	1.1		35.1	1.1
HAVIS INC	9.9	1.1		9.9	1.1
BURKHARDT SHEET METAL COMPANY INC		1.0			1.0
EASTERN BUSINESS SOFTWARE INC		1.0			
JOSEPH BARBATO ASSOCIATES LLC		1.0			1.0
ARRO CONSULTING INC		1.0			1.0
LAKE ERIE RUBBER & MANUFACTURING LLC		1.0			1.0
ELITE ALLOY CONCEPTS LLC	0.4	0.9		0.4	0.9
DEMCO ENTERPRISES INC		0.9			
COLUMBIA NORTHWEST INC		0.9			
ERIE ALE WORKS LLC		0.9			
ACME CORRUGATED BOX CO	2.7	0.9		2.7	0.9
SYANDUS INC	5.5	0.8		5.5	0.0
ARDEX LABORATORIES INC		0.8			
AMERICAN MANUFACTURING & ENGINEERING CO	3.6	0.8		3.6	0.8

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

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	2021	2022	2023	2021	2022
PROCONEX ACQUISITION INC	1.8	0.8		1.8	0.8
STATE OF THE ART INC	1.8	0.8		1.8	
GETTLE INCORPORATED		0.8			0.8
KINGSPAN INSULATED PANELS INC		0.7			0.7
BURNS ENGINEERING INC	1.8	0.7		1.8	0.7
RIVERSIDE MATERIALS INC		0.7			0.7
DNP IMAGINGCOMM AMERICA CORP		0.6			0.6
WALSH CONSTRUCTION COMPANY II LLC	6.6	0.5			
C.J. ROBINSON COMPANY		0.5			
EMBASSY POWDERED METALS INC		0.4			0.4
ERNST CONSERVATION SEEDS INC		0.3			0.3
SOLO LABORATORIES INC	14.0	0.3		14.0	0.3
ROTOR BEARING TECHNOLOGY & SOFT WARE INC		0.3			
ROBERT MAZZA INC	0.2	0.3		0.2	0.3
SPRING CITY ELECTRICAL MANUFACTURING	0.4	0.2		0.4	0.2
INRCORE LLC	5.9	0.2		5.7	0.2
PITTSBURGH TECHNOLOGIES GROUP INC		0.1			
S J A CONSTRUCTION INC	1.8	0.1		1.8	0.1
DEASEY MACHINE TOOL & DIE WORKS INC	0.2	0.1		0.2	
RUSSELL STANDARD CORPORATION	0.8	0.1			
DAMIN PRINTING COMPANY LLC	1.3	0.0		1.3	
LOZIER CORPORATION	0.4	0.0			0.0
INTERSTATE BUILDING MATERIALS INC		0.0			
UATC LLC	3,590.8			3,590.8	
BAE SYSTEMS LAND & ARMAMENTS INC	1,352.0			1,130.7	
CERNER CORPORATION	378.3			378.3	
SHIRE HUMAN GENETIC THERAPIES INC	294.4				
TITAN ROBOTICS INC	246.2			8.9	
SEI GLOBAL SERVICES INC	237.0			13.0	
CARPENTER TECHNOLOGY CORPORATION	196.7			196.7	
PRECISION PIPELINE LLC	184.2				
BLACK KNIGHT FINANCIAL SERVICES INC	145.2			145.2	
PROVIDENCE ENGINEERING CORPORATION	130.8			130.8	
ATHENA GLOBAL ADVISORS INC	117.3			117.3	
ERIE INDEMNITY COMPANY AS AIF FOR ERIE I	115.9				
RELIANCE STANDARD LIFE INS CO	84.5				
INCYTE CORPORATION	83.7			83.7	
KUHN TOOL & DIE CO	81.0			14.1	
MACHINED METALS MANUFACTURING GROUP INC	80.3			16.4	
HADFIELD ELEVATOR LLC	77.8				
RHOADS INDUSTRIES INC	77.2				
DEACOM INC	73.1				
TASTEPOINT INC	73.0			73.0	
FENIX GROUP INTERNATIONAL LLC	70.9			70.9	
BANKMOBILE TECHNOLOGIES INC	68.5			68.5	
ARBUTUS BIOPHARMA INC	67.2				
IKOS HOLDINGS INC	65.7			65.7	
SCRUB DADDY INC	65.0			65.0	
TITUS COMPANY	62.2			8.6	
STP INVESTMENT SERVICES LLC	61.0				

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

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	2021	2022	2023	2021	2022
ENTERIN INC	61.0				
PROMPTWORKS LLC	60.8			60.8	
IMVAX INC	60.5				
KROLL BOND RATING AGENCY LLC	59.4				
DOSSIER SYSTEMS INC	57.6				
KAARTA INC	57.4			57.4	
GP ENERGY PRODUCTS	56.3			56.3	
ENTECH ENGINEERING INC	56.2			56.2	
GENERAL DYNAMICS ORDNANCE AND TACTICAL	55.9			55.9	
MCCARL'S SERVICES INC	53.9			53.9	
FIRST QUALITY BABY PRODUCTS LLC	53.9			53.9	
STEEM MONSTERS CORPORATION	51.3				
VESPER MEDICAL INC	49.1				
OBERG HOLDING COMPANY LLC	48.4				
LAMINAR FLOW INC	47.9			0.9	
POCKET EXPERT LLC	44.7			44.7	
PINNACLE 21 LLC	44.5			44.5	
INTERACTIVE LIQUID LLC	44.2			32.0	
XYLOCOR THERAPEUTICS INC	43.8				
DIGITAL DREAM LABS	43.4			43.4	
PHRG HOLDING INC	41.5				
ARROW INTERNATIONAL LLC	39.1			39.1	
AREA TOOL & MANUFACTURING INC	39.0				
PRO SHOPKEEPER COMPUTER SOFTWARE COMPANY	38.7			38.7	
KINSLEY CONSTRUCTION INC	37.9			37.9	
ENVIRONMENTAL CONTROL SERVICES II INC	37.7				
SNIFI INC	37.4				
RIEKER INSTRUMENT COMPANY INC	36.5			36.5	
ONE HEALTH SOLUTIONS LLC	36.4				
COBBS CREEK HEALTHCARE LLC	36.3				
INSTINCT SCIENCE LLC	36.1				
HAMILL MANUFACTURING COMPANY	34.9			19.6	
ENERGYCAP INC	33.0			33.0	
ADVERTISING SPECIALTY INSTITUTE INC	32.8			32.8	
RIVER POINT TECHNOLOGY	32.0			32.0	
MKSD LLC	31.7				
SERIES U OF UM PARTNERS LLC	31.7			31.7	
GENERIAN PHARMACEUTICALS INC	31.6			31.6	
INVESTEDGE INC	31.6			31.6	
KEF ROBOTICS INC	31.5				
MATERIALS RESEARCH & DESIGN INC	29.8			29.8	
PROCHEMTECH INTERNATIONAL INC	29.4			29.4	
BERNARDON PC	29.3			29.3	
THREE10 SOLUTIONS	28.8			28.8	
INTEGRESS INC	28.1			28.1	
MULTI COLOR CORPORATION	27.7			27.7	
LLI ENGINEERING LLC	27.5				
NOVO NORDISK INC	27.1			27.1	
LEHIGH DEFENSE LLC	26.7			26.7	
ONEX INC	26.4			26.4	

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

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	2021	2022	2023	2021	2022
HERBERT ROWLAND & GRUBIC INC	26.1			26.1	
JOHNSON MATTHEY INC	24.5			24.5	
YORK PRECISION MACHING AND HYDRAULICS LL	24.3			24.3	
FIRST QUALITY PRODUCTS INC	24.3			24.3	
BURKENTINE & SONS BUILDERS INC	24.3				
LEAGUESIDE	24.0			0.3	
AMERIHEALTH INC	23.4			23.4	
RAPID FLOW TECHNOLOGIES INC	23.3			23.3	
FOCUS FORWARD LLC	23.0				
HUMANISTIC ROBOTICS INC	22.3				
REFRIGERATION DESIGN & SERVICE INC	22.3			22.3	
DRUG PLASTICS & GLASS CO INC	22.2			22.2	
SOCO INC	22.1			22.1	
MBT PRODUCT DESIGN & MANUFACTURING INC	21.9				
PARAGON CONSULTING SERVICES INC	21.7			21.7	
OHR PHARMACEUTICAL INC	21.5				
TESSY PLASTICS CORP.	21.1			21.1	
MISSION SURGICAL INNOVATIONS	21.0			21.0	
ANALYTICAL GRAPHICS INC	21.0			21.0	
ROBOTWITS LLC	20.8			20.8	
MEPUSH INC	20.6				
LUCAS SYSTEMS INC	20.6			20.6	
BIOEX CONSULTING LLC	20.5				
DRAYNOW LLC	20.1				
CHAMPION HOME BUILDERS INC	19.9			19.9	
VINCENT PAYMENT SOLUTIONS INC	19.4				
GILBERT ARCHITECTS INC	19.3			19.3	
TMNA SERVICES LLC	19.1			19.1	
WECREATE LLC	19.1			14.1	
OLIN PARTNERSHIP LTD	19.1			19.1	
NEUROFLOW LLC	18.9			18.9	
PETCO ANIMAL SUPPLIES STORES INC	18.8			18.8	
SOUTHCO INC	18.7			18.7	
APPLIED ENERGY SYSTEMS INC	17.7			17.7	
STEIN SEAL COMPANY	17.1			17.1	
JUDCO MANAGEMENT INC	17.0				
TRUMBULL CORPORATION	16.5			16.5	
REDSHIFT SPORTS LLC	16.4				
DIVERSIFIED TRAFFIC PRODUCTS INC	16.4			16.4	
TECHNOTECTS INC	16.3			16.3	
SONOCO PRODUCTS COMPANY	16.1			16.1	
EPIC WEB STUDIOS	16.0			16.0	
GLAXOSMITHKLINE CONSUMER HEALTHCARE HOLD	15.9			15.9	
NCC AUTOMATED SYSTEMS INC	15.9			15.9	
STATE OF THE ARC WELDING AND FABRICATING	15.6				
CAPTIS DIAGNOSTICS LLC	15.4			15.4	
ENDEAVOR CONSULTING GROUP LLC	15.4				
PHILADELPHIA PROTECTION BUREAU INC	15.3			15.3	
AMERICAN INTERNATIONAL RELOCATION SOLUTI	14.8			14.8	
GATEWAY TICKETING SYSTEMS INC	14.5				

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
GATTER & DIEHL INC	14.5			14.5	
MATRIX PDM ENGINEERING INC	14.5				
NAVARRO & WRIGHT CONSULTING ENGINEERS	14.4			12.0	
KAIER ENGINEERING INCORPORATED	14.2			14.2	
ANSALDO STS USA INC	13.9			13.9	
NIAGARA BOTTLING LLC	13.6				
BUDGE INDUSTRIES LLC	13.5				
PREDICTIVE SOLUTIONS CORPORATION	13.4				
NIC USA INC	13.2			13.2	
TISSUE TOOLS LLC	13.1			3.3	
NEAR MISS MANAGEMENT LLC	12.9				
BORDERWISE INCORPORATED	12.9				
TUSICK & ASSOCIATES ARCHITECTS INC	12.5			12.5	
PRIDE MOBILITY PRODUCTS CORPORATION	12.2			12.2	
XPER INC	12.0				
WAVE LIFE SCIENCES USA INC	11.9				
PRITCHARD BIELER GRUVER & WILLISON P C	11.9			11.9	
SFS GROUP USA INC	11.7				
SIEMENS INDUSTRY INC	11.4			11.4	
PRECISION MECHANICAL SERVICES LLC	11.2			11.2	
THE BTB GROUP LLC	11.0				
FINITE RESOURCES INC	11.0			0.1	
LUNCHTIME SOFTWARE LLC	10.7				
MANAGED CARE ADVISORS INC	10.5			1.7	
PRIMAXX ACQUISITION CORP	10.4			0.1	
CUSTOM PROCESSING SERVICES INC	10.3				
SKF USA INC	10.2			10.2	
GATEKEEPER INC	10.1				
DENTECH INC	10.1			10.1	
WILSON LEGAL SOLUTIONS INC	10.0			10.0	
PROVENTIONBIOINC	9.9				
EPIPHANY ENVIRONMENTAL LLC	9.8			9.8	
ARMADA PARTNERS LP	9.7				
PETUUM HOLDINGS LTD	9.7			9.7	
BIOHYBRID SOLUTIONS LLC	9.5			9.5	
PRIMEPAY LLC	9.5			9.5	
IMMUNOCORE LLC	9.3			0.1	
CARDIAC ASSIST INC	9.1			9.1	
PHARMALYTIQ LLC	9.1			0.9	
GREENFIELD ARCHITECTS LTD.	9.0			9.0	
ROCKET CLOUD INC	9.0				
SHO TECHNOLOGY SOLUTIONS LLC	8.9				
EQUIPMENT TECHNOLOGY INC	8.8				
CRYSTAL STEEL FABRICATORS INC	8.7			8.7	
NORTHPORT DISTRIBUTION LLC	8.7			8.7	
PARKER HANNIFIN CORPORATION	8.7			8.7	
PERSONNEL DATA SYSTEMS INC	8.6			8.6	
HOMELAND MANUFACTURING SERVICES INC	8.4				
O Z ENTERPRISES LLC	8.4			8.4	
CRRC MA CORPORATION	8.4			8.4	

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
OLIVER HEALTHCARE PACKAGING COMPANY	8.3			8.3	
LOAD RITE CORP	8.2				
KLOVER SEPA INC	8.2				
TRAVELWITS LLC	8.1				
PSYCHOLOGY SOFTWARE TOOLS INC	8.1			8.1	
PROTECTIVE INDUSTRIES INC	8.0			8.0	
IEI ARCHITECTS INC	8.0			8.0	
NEXGEN AUTOMATION INC	8.0			8.0	
HX COILS	7.9			7.9	
FOOT LOCKER CORPORATE SERVICES INC	7.9			7.9	
ZEIGLER BROS INC	7.9			7.9	
HERMANCE & STROUSE INC	7.6			7.6	
WFE HOLDINGS LLC	7.5			7.5	
KRANDO METAL PRODUCTS INC	7.2			7.2	
KS TOOLING INC	7.1				
ADVANCED MANUFACTURING TECHNOLOGIES INC	7.1			7.1	
CMT LABORATORIES INC	7.1			7.1	
MBF THERAPEUTICS INC	7.0			6.7	
CONTROL ANALYTICS INC	6.8			6.8	
RIVER SALVAGE COMPANY INC	6.7			6.7	
RELX INC	6.6				
CHIRAL TECHNOLOGIES INC	6.4			0.0	
TURNER CONSTRUCTION COMPANY	6.4				
IEI GROUP LTD	6.4			6.4	
TINIUS OLSEN TESTING MAC	6.4			6.4	
TRIDIUM INC	6.3				
PITTSBURGH PLASTICS MANUFACTURING INC	6.3			6.3	
BOYD STATION LLC	6.3				
SANDQUIST CORPORATION	6.2			6.2	
HELIUS MEDICAL INC	6.2				
CORRY MANUFACTURING COMPANY	6.1			6.1	
LIFE SUPPORT INTERNATIONAL INC	6.0			6.0	
AOG LLC D/B/A TRUFOOD MFG. LLC	5.9				
SEKISUI AMERICA CORPORATION	5.8			5.8	
BALLY RIBBON MILLS INC	5.8				
ELBECO INCORPORATED	5.7			5.7	
INSTECH LABORATORIES INC	5.7				
LIGHTWEIGHT MANUFACTURING INC	5.6				
JOAO & BRADLEY CONSTRUCTION COMPANY INC	5.5			5.5	
EXPRESSCELLS INC	5.3				
REED BUSINESS INFORMATION INC	5.3				
BOSCH SECURITY SYSTEMS INC	5.3			5.3	
NEWCASTLE CO INC	5.2				
KEYSTONE COMPLIANCE LLC	5.2				
U.S. PIPELINE INC	5.1			5.1	
FINISAR CORPORATION	4.9			4.9	
MST ASSOCIATED COS INC	4.8			1.5	
ALLVISION IO INC	4.8			4.8	
ALLOY 5 LLC	4.7			4.7	
FORNEY LP	4.7				

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
CONSEGNA PHARMA INC	4.7			4.7	
TOASTERPARTY	4.7			4.7	
JONES PERFORMANCE PRODUCTS INC	4.6			4.6	
VISNETA LLC	4.5				
TRS CERAMICS INC	4.5				
STELLER INNOVATIONS	4.5			4.5	
BRACALENTES MANUFACTURING CO INC	4.4			4.4	
SPECTRAGENETICS INC	4.3				
ALL FILL CORP	4.2				
DIEHL CO LLC	4.2			4.2	
ROCON INC	4.1			4.1	
METER READINGS HOLDING I CORP	4.1			3.9	
THE LACKNER GROUP INC	4.1			4.1	
EAGLE METALS INC	3.9				
NURSE NAVIGATOR SOLUTIONS LLC	3.8			3.8	
SUNNY DELL FOODS	3.7				
MCS INDUSTRIES INC	3.6			3.6	
MICHAEL F RONCA & SONS INC	3.6			3.6	
PREMIER CUSTOM BUILT INC	3.5			3.5	
EDON COMPOSITES	3.3			3.3	
AMERICAN TURNED PRODUCTS INC	3.2			3.2	
VIDEO DIRECTIVES LLC	3.1			3.1	
EAST PENN MANUFACTURING CO	2.9				
HERKULES USA CORPORATION	2.9			2.9	
QMAC-QUALITY MACHINING INC	2.9			2.9	
GREAT COASTERS INTERNATIONAL INC	2.8				
ROYSE GREEN TECHNOLOGIES INC	2.8				
POLARIS SALES INC	2.8			2.8	
GO2POWER LLC	2.8			2.8	
HUNTER MECHANICAL INC	2.7			2.7	
CAREL USA LLC	2.7			2.7	
OHIO RIVER SALVAGE INC	2.6				
EXH INC	2.4			2.4	
RKI APPS INC	2.4				
GARTNER BURDICK BAUER NILSEN INC	2.4			2.4	
M3 MEDIA GROUP INC	2.3			2.3	
GODSHALLS QUALITY MEATS INC	2.3				
METROPOLITAN ACOUSTICS LLC	2.3				
NATL GLASS METAL CO INC	2.3			2.3	
FOOD MANAGEMENT SERVICES INC	2.2			2.2	
NOVOTECH CONSTRUCTION INC	2.2			2.2	
PREMIER DENTAL PRODUCTS COMPANY	2.2				
JDAVIS ARCHITECTS PLLC	2.1				
SCISWIFT LLC	2.1				
SHERIDAN DOSE INVESTMENT COMPANY LLC	2.0				
CIMA TECHNOLOGY INC	2.0			2.0	
CERTES NETWORKS INC	1.7			1.7	
PROMINENT FLUID CONTROLS INC	1.7			1.7	
CIVIC MAPPER LLC	1.5			1.5	
WEAVER COMPANIES INC	1.5			1.5	

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX A - TAXPAYERS RECEIVING CREDIT FOR APPLICATIONS IN 2021, 2022, OR 2023

NAME	AWARDS (\$K)			UTILIZATIONS (\$K)	
	2021	2022	2023	2021	2022
SETRA SYSTEMS INC	1.4			1.4	
BIRDBRAIN TECHNOLOGIES LLC	1.4			1.4	
GGS INFORMATION SERVICES INC	1.4			1.4	
AMERICAN BEVERAGE CORPORATION	1.4			1.4	
AMETEK INC	1.4			1.4	
CIRCADIANCE LLC	1.2				
DURA BOND INDUSTRIES INC	1.2			1.2	
MERSEN USA GS CORP	1.1			1.1	
KEYSTONE MANUFACTURING INC	1.1				
MISSION CRITICAL PARTNERS INC	1.1				
JETNET CORPORATION	1.0			1.0	
WORLD ELECTRONICS SALES & SERVICE INC	1.0			1.0	
WILSON ENGINEERING SERVICES PC	0.9				
ARGOLYTICS LLC	0.9				
T & M ASSOCIATES INC	0.9			0.9	
HIGHLAND TANK & MFG. CO.	0.8			0.8	
LTL WHOLESALE INC	0.8				
ARIEL PRECISION MEDICINE INC	0.8				
DRUMMOND SCIENTIFIC COMPANY	0.7			0.7	
REAXIS INC	0.7				
MCCOURT LABEL CABINET COMPANY	0.7			0.7	
IHEARTMEDIA MANAGEMENT SERVICES INC	0.7				
GAI TRONCIS CORPORATION	0.7			0.7	
MAJESTIC FIRE APPAREL INC	0.7				
PENN STATE MECHANICAL CONTRACTORS INC	0.7				
YCG INC	0.6				
SMARTRR SOLUTIONS LLC	0.5				
CASUAL LIVING UNLIMITED LLC	0.4				
PSI PACKAGING SERVICES INC	0.4				
LANG'S CHOCOLATES LLC	0.3			0.3	
ACME MACHINE & WELDING CO LLC	0.3				
PSI CONTAINER INC	0.2				
SPOTLESS MATERIALS INC	0.2				
RICHARDSAPEX INC	0.2			0.2	
TRIGON PLASTICS LLC	0.1				
TOTAL	55,000.0	60,000.0	60,000.0	40,736.6	40,646.9

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX B - CREDITS SOLD OR ASSIGNED IN 2023, BY AWARDEE

NAME	SALES & ASSIGNMENTS	PRICE
COLDEGE TECHNOLOGIES INC	344,392	320,284
AURORA OPERATIONS INC FKA AURORA INNOVATION INC	250,000	232,500
ADVENT DESIGN CORPORATION	227,112	213,485
CARPENTER TECHNOLOGY CORPORATION	196,685	184,884
PAASGEBIO	194,405	180,797
PRODUCTION SYSTEMS ACQUISITION CO LLC	191,968	178,530
APOLLO NEUROSCIENCE INC	150,231	139,582
SHARP EDGE LABS INC	145,514	132,033
GECKO ROBOTICS INC	141,435	130,120
LOCOMATION	131,305	120,800
BLACK KNIGHT FINANCIAL SERVICES INC	127,183	1
LEVANTE BREWING INC	126,224	113,602
ATHENA GLOBAL ADVISORS INC	117,288	117,288
GSM INDUSTRIAL INC	114,389	106,382
GURU TECHNOLOGIES INC	109,775	101,292
NEUEXCELL THERAPEUTICS INC	93,407	85,935
COGNISTIC LLC	77,239	71,060
GALERA THERAPEUTICS INC	73,598	67,710
LIFEBRAND INC	69,134	63,603
RETURN LOGIC INC	59,793	55,010
STARN TOOL & MANUFACTURING COMPANY	58,834	54,127
MOBILION SYSTEMS INC	58,064	52,548
SETEX TECHNOLOGIES INC	57,818	53,193
MESHNET INC	47,830	44,960
D. GILLETTE INDUSTRIAL SERVICE INC	47,747	43,927
DIGITAL DREAM LABS	43,418	39,945
JOHNSTON MECHANICAL LLC	42,685	39,270
EMINENCE ENTERTAINMENT ENTERPRISES LLC	40,964	37,687
VIPER NETWORK SYSTEMS LLC	40,839	37,572
JETPACK WORKFLOW INC	40,157	36,944
AAYUNA INC	39,814	37,425
THREE 10 SOLUTIONS INC	39,808	36,623
SERIES U OF UM PARTNERS LLC	39,061	36,717
DATAFORMA INCORPORATED	38,951	35,835
UTZ BRANDS HOLDINGS LLC	38,754	35,654
SUNTEX INTERNATIONAL INC	37,804	34,780
PJDICK INCORPORATED	37,438	37,438
LODESTAR SOFTWARE SOLUTIONS INC	36,416	34,231
OCEAN GENOMICS INC	36,046	33,523
BLASTPOINT INC	35,555	32,711
B&B DESIGNED SYSTEMS INC	34,734	31,955
DIAMOND KINETICS INC	34,123	30,711
NOVASENTA INC	32,521	32,521
RIGHT AIR INC	31,513	28,992
BENEFIT ALLOCATION SYSTEMS LLC	31,357	28,848
TAVANTA THERAPEUTICS INC	30,548	28,104
PENN STATE CONSTRUCTION J&D LLC	28,506	26,226
SOCIAL MEDIA INFORMATION LLC	28,133	25,882
FOREST DEVICES INC	26,855	24,707
SAA ARCHITECTS	26,773	25,667
LINDY PAVING INC	23,723	23,723

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX B - CREDITS SOLD OR ASSIGNED IN 2023, BY AWARDEE

NAME	SALES & ASSIGNMENTS	PRICE
JOHN BEAN TECHNOLOGIES CORPORATION	23,336	0
STRADOS LABS LLC	22,067	20,302
BOARDBOOKIT INC	20,303	18,679
LIVE WELL CHIROPRACTIC PC	19,822	18,236
IRALOGIX INC	19,648	18,076
MILNES ENGINEERING INC	18,861	17,352
PLEDGEPLATFORM INC	18,848	17,340
SWEET NOTE BAKERY INC	18,449	16,973
KERITON INC	18,175	16,721
APEXDROP LLC	16,740	15,401
ECTOBOX INC	16,319	15,013
NSV INC	15,954	14,997
ALLEGHENY PERFORMANCE PLASTICS LLC	15,904	14,632
SCHELL GAMES LLC	15,474	14,391
NEAR EARTH AUTONOMY INC	15,236	13,865
JOHN R. BROMILEY COMPANY INC	14,703	13,380
SPARKCURES LLC	14,084	12,957
BERRY SOLUTIONS GROUP LLC	14,064	12,798
APPLIED SYSTEMS ASSOCIATES INC	13,862	12,753
CRIMEWATCH TECHNOLOGIES INC	12,040	10,956
WHITEHORN DIGITAL LLC	11,461	10,544
CRESCENT INDUSTRIES INC	10,212	9,599
POLYK TECHNOLOGIES LLC	10,101	9,091
RIMSYS INC	8,582	7,724
MODERN CABINET AND CONSTRUCTION INC	8,279	7,451
FOUR GROWERS INC	8,214	7,393
E B ENDRES INC	8,126	7,313
MBIC HOLDINGS INC	6,979	6,281
NEW PRODUCT TECHNOLOGIES INC	6,596	5,936
PYROTECHNICS MANAGEMENT INC	6,280	5,652
ARBITARE DESIGN STUDIO LLC	6,270	0
SIMPLE ORIGIN INC	6,030	5,427
WRIGHT LABS LLC	5,816	5,234
AERONICS INC	5,203	4,683
OPTIMUS TECHNOLOGIES INC	4,961	4,465
BLAIR MEAD DESIGNS LLC	4,891	4,402
BIGBEE STEEL & TANK CO.	4,828	0
LOOP SOFTWARE LLC	4,417	3,975
EKTO VR INC	4,281	3,853
HOSLER CORP	4,223	3,801
NANOSPEC INSTRUMENTS LLC DBA MAGNITUDE INSTRUMENTS LLC	4,140	3,726
SLATE PDO LLC DBA LIGHT TOOL & MACHINE	4,131	3,718
BEN PEOPLES INDUSTRIES	4,061	3,655
REFLEXION INTERACTIVE TECHNOLOGIES INC	3,802	3,422
ALPINE SALES & RENTAL CORP	3,163	2,847
TECHKNOWSERV CORPORATION	2,986	2,687
CONFIRMED LLC	2,746	2,471
LUMIS CORP	2,698	2,428
GRANT STREET GROUP INC	2,531	0
J.A.C.K. WOOD PRODUCTS LLC	2,215	1,994
KOOP TECHNOLOGIES INC	2,110	1,899

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX B - CREDITS SOLD OR ASSIGNED IN 2023, BY AWARDEE

NAME	SALES & ASSIGNMENTS	PRICE
MAKERPLACE INC	1,824	1,642
RENERVA LLC	1,433	1,290
CDG ENVIRONMENTAL LLC	1,432	1,346
C&R DIRECTIONAL BORING LLC	1,380	1,242
LOWE ENGINEERING COMPANY INC	1,263	0
TURNKEY TAXES INC	1,258	1,132
CKJK LLC	983	885
ELITE ALLOY CONCEPTS LLC	903	813

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX C - CREDITS SOLD OR ASSIGNED IN 2023, BY RECIPIENT

NAME	SALES & ASSIGNMENTS	PRICE
DUQUESNE LIGHT COMPANY	983,562	911,765
ARMSTRONG UTILITIES INC	697,388	643,361
BOSCOV'S INC	641,289	603,311
COOPERFRIEDMAN ELECTRIC SUPPLY CO INC	320,629	294,398
GUARDIAN PROTECTION SERVICES INC	208,982	193,030
JLG INDUSTRIES INC	145,514	132,033
BLACK KNIGHT INFOSERV LLC	127,183	1
ARKEMA INC	117,288	117,288
ZOOM VIDEO COMMUNICATIONS INC	58,064	52,548
PJTC HOLDINGS INC	37,438	37,438
UPMC DIVERSIFIED SERVICES INC	32,521	32,521
THE LINDY GROUP INC	23,723	23,723
AVURE TECHNOLOGIES INC	14,451	0
A&B PROCESS SYSTEMS CORP	6,775	0
PROSEAL AMERICA INC	2,110	0
INDIVIDUALS AND FIDUCIARIES	1,235,647	1,120,769

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
MERCK SHARP & DOHME LLC	2,937,891
AMAZON.COM SERVICES LLC	1,374,347
JUST PLAY PRODUCTS LLC	339,514
NEXTGEN HEALTHCARE INFORMATION SYSTEMS LLC	336,317
KMA DESIGN STUDIO PC	323,744
HUBERT C JASINSKI DENTAL LABORATORY INC	297,292
HEIDELBERG MATERIALS US CEMENT LLC	283,622
MICRO MOLD CO INC	274,027
DHUY ENGINEERING INC	246,217
MOBILE OUTFITTERS US INC	171,911
PINNACLE 21 LLC	166,572
STREAMLIGHT INC	142,397
HYDRO EXTRUSION USA LLC	141,679
AUTO SOFT INC	138,582
QUIRE LLC	136,448
UNPROMPTED LLC	130,421
DELCO INNOVATIONS LLC	128,626
BLACK KNIGHT FINANCIAL SERVICES INC	127,183
MATERIALS RESEARCH & DESIGN INC	117,512
HARMAN DEUTSCH CORP	111,224
TYBER MEDICAL LLC	108,778
INGMAR MEDICAL LLC	108,657
BOHLER ENGINEERING PA LLC	108,002
ADVENT DESIGN CORPORATION	105,846
WEBSTAIRANT STORE LLC	103,544
CONTAINER RESEARCH CORP	102,789
ADVANCED TECHNOLOGY SERVICES GROUP LLC	102,392
AEC GROUP LLC	98,722
SHUMAKER INDUSTRIES INC	94,108
JAVAN ENGINEERING INC	90,008
CARRIAGE MACHINE SHOP LLC	87,935
JOHNSRUD & ASSOCIATES ARCHITECTS LLC	87,542
INDOVINA ASSOCIATES ARCHITECTS LLC	87,524
ELMAGIN CAPITAL LLC	87,523
THE OTT GROUP INC	86,833
PRINTFLY CORPORATION	86,428
LISTRAK INC	86,054
ABBOTT ACQUISITION COMPANY LLC	85,139
AGGREGATES EQUIPMENT INC	80,401
INTEGRATED DEVELOPMENT PARTNERS LLC	79,369
PROXICAST LLC	79,287
CARNEGIE ROBOTICS LLC	79,099
FOX CHASE MANAGEMENT INC	78,840
SHEWARD PARTNERSHIP LLC	77,047
MCCARLS SERVICES INC	76,060
PRIDE MOBILITY PRODUCTS CORPORATION	75,541
EMDESCO INC	75,045
ANTHONY D FOLINO CONSTRUCTION INC	74,013
SUSQUEHANNA CIVIL INC	73,465
NEVERWET LLC	71,968
BERKADIA COMMERCIAL MORTGAGE LLC	71,674

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERRED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
GSI HEALTH LLC	71,623
MKSD LLC	71,091
FENIX GROUP INTERNATIONAL LLC	70,933
FQT HOLDING COMPANY LLC	69,956
B & H INDUSTRIES INC	69,343
7 SOUTH HOLDING COMPANY INC	68,354
COMPU CRAFT FABRICATORS INC	67,905
DURA METAL PRODUCTS CORP	67,641
WEB TALENT LLC	67,506
OVERLY DOOR COMPANY	66,239
ENERGY MANAGEMENT SYSTEMS INC	65,614
M&S CENTERLESS GRINDING	65,535
D GILLETTE INDUSTRIAL SERVICES INC	63,974
PJTC HOLDINGS INC	62,523
CORE BUSINESS SOLUTIONS INC	62,490
AMERISCEND LLC	61,710
DIGSAU ARCHITECTURE PC	59,924
HEALTH UNION LLC	58,424
FORMCRAFT INTERIORS INC	58,369
TRINITY AUTOMATED SOLUTIONS INC	57,088
BORE TECH INC	57,028
JOCKEL ENTERPRISES	56,481
GP ENERGY PRODUCTS LLC	56,325
ENTECH ENGINEERING INC	56,214
SAMTEC INC	55,809
RIVER POINT TECHNOLOGY LLC	55,645
RJP CONSULTING GROUP LLC	54,000
FIRST QUALITY BABY PRODUCTS LLC	53,872
ALTAIR INTEGRATED SERVICES LLC	53,676
ARCCA LLC	53,245
CURRY SUPPLY HOLDINGS INC	52,958
GOLDEN BROTHERS INC	52,106
AUDIAINTERNATIONALINC SUBS	51,903
JOB OB INVESTMENTS INC	51,626
ARCHER & BUCHANAN ARCHITECTURE LTD	51,380
APPLIED CONTROL ENGINEERING INC	51,372
GWYNEDD MANUFACTURING INC	51,092
MAC SAFETY INC	50,961
XYNTEK INCORPORATED	50,157
ROBOTWITS LLC	48,375
RRR REUNION LLC	46,269
EKL MACHINE INC	45,526
COMPREHENSIVE FIRE TECHNOLOGIES INC	44,547
INDEPENDENCE STEEL INC	44,363
LIQUID FILLING SOLUTIONS LLC	43,955
I B ABEL INC	43,401
GLOBAL FIRE PROTECTION GROUP LLC	43,215
PNEU DART INC	42,551
EDTELL LLC	42,252
BRIO DESIGN PARTNERS LLC	41,445
ACUTECH PRECISION AEROSPACE INC	41,421

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERRED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
CONTROL ASSOCIATES & MFG LLC	41,147
BTB GROUP LLC	40,807
GAP HOLDING COMPANY INC	40,765
ARCHITECTURAL POLYMERS INC	40,457
DIETZ & WATSON INC	39,887
SUBURBAN TOOL & DIE CO INC	39,392
ROBSHAW HOLDINGS INC	38,694
X-CARD HOLDINGS LLC	38,582
THE CLOUSER GROUP INC	38,567
PAK-IT DISPLAYS LLC	37,580
ARBUTUS BIOPHARMA INC	37,500
RIEKER INSTRUMENT COMPANY INC	36,469
COBBS CREEK HEALTHCARE LLC	36,266
DRV INC	36,211
MORGAN LEWIS AND BOCKIUS LLP	35,630
FLEXICON INC	35,259
FAZIO MECHANICAL SERVICES INC	34,881
BREEO LLC	34,614
MATHWAY LLC	34,493
HORIZON SIGNAL TECHNOLOGIES INC	33,787
ITR LLC	33,784
NATIONAL MEDICAL SERVICES INC	33,575
SUVODA LLC	33,074
ENERGYCAP LLC	33,034
GEMINI PLASTICS INC	32,877
LINDY PAVING INC	32,595
SAGE TECHNOLOGY SOLUTIONS INC	32,536
MANLEY HOLDINGS INC	32,517
TELEOSOFT INC	32,389
KINSLEY CONSTRUCTION LLC	32,102
PREMIER AUTOMATION HOLDINGS INC	31,186
ENERGY TRANSFER SOLUTIONS LLC	30,361
ADEPT GROUP HOLDINGS LLC	30,106
YORK BUILDING PRODUCTS CO INC	29,515
BORTON LAWSON HOLDING CO INC	29,315
BERNARDON PC	29,299
AMERICAN INTERNATIONAL RELOCATION SOLUTIONS LLC	29,208
AMERICAN MILLWORK & CABINETS INC	29,136
MEBIAS DISCOVERY LLC	28,768
AFP ADVANCED FOOD PRODUCTS LLC	28,748
SP ACQUISITION COMPANY LLC	28,639
GATEWAY TICKETING SYSTEMS INC	28,592
STEIN SEAL COMPANY	28,408
BRUNNER INDUSTRIAL GROUP INC	28,116
D L HOWELL & ASSOCIATES INC	27,904
MEDICAL PRODUCTS LABORATORIES	27,598
MORTGAGE CONNECT LP	27,556
DURAWOOD PRODUCTS INC	27,551
HEAT EXCHANGE & TRANSFER INC	27,400
BERK INTERNATIONAL LLC	27,172
PSENERGY LLC	26,983

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERRED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
ALLTURNA LLC	26,853
G E M MECHANICAL SERVICES INC	26,845
MSG HOLDING LLC	26,644
LAGOS INC	26,437
PHRG HOLDING INC	26,397
FOUR SEASONS PRODUCE INC	26,116
CLIMATECH HOLDING CO	25,837
VENANGO STEEL INC	25,826
PHONETICS INC	25,660
PRINT MAIL SOLUTIONS INC	25,479
RASER ACQUISITIONS LLC	25,461
SOLO LABORATORIES INC	24,827
FINISH TECH CORP	24,564
YORK PRECISION MACHINING AND HYDRAULICS	24,338
FIRST QUALITY PRODUCTS INC	24,312
INSTINCT SCIENCE LLC	24,203
INSTRUMENTATION INDUSTRIES INC	23,957
GNOME ARCHITECTS LLC	23,894
COME READY FOODS LLC	23,785
SYNERGY MEDIA GROUP LLC	23,734
INNOVATIVE FINANCING & CONSULTING GROUP LLC	23,534
HAROLD BECK & SONS INC	23,390
GREENWICH TERMINALS LLC	23,004
MID ATLANTIC TIMBERFRAMES LLC	22,887
TX3 SERVICES LLC	22,754
SENTINEL PROCESS SYSTEMS INC	22,611
REFRIGERATION DESIGN & SERVICE LLC	22,305
SITE DESIGN CONCEPTS INC	22,140
VEGAN TREATS INC	22,063
AMERICAN DENTAL DESIGNS INC	22,023
TRACEY MECHANICAL INC	21,668
DAVID WEBER CO INC	21,621
LEVANTE BREWING INC	21,364
THOMAS H CLINGAN ELECTRICAL SERVICE	21,344
THERM OMEGA TECH INC	21,242
J B KINTNER & SONS INC	21,170
DOBIL LABORATORIES INC	21,124
NURSING ABC INC	21,050
ARMOUR TECHNOLOGIES INC	20,996
CLAIR GLOBAL CORP	20,977
BQUIET LLC	20,794
LEHIGH DEFENSE LLC	20,770
SPECIALTY SEAL GROUP INC	20,654
LUCAS SYSTEMS INC	20,642
MESH INC	20,563
HAVPAK INC	20,561
ROBERT BOSCH LLC	20,515
RACESENG INCORPORATED	20,255
GARDNERS CANDIES INC	19,872
GILBERT ARCHITECTS INC	19,291
LOGISTICS PLUS INC	19,243

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERRED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
ENGINUITY LLC	19,192
TMNA SERVICES LLC	19,137
OLIN PARTNERSHIP LTD	19,090
P J DICK INCORPORATED	19,028
FLUITRON LLC	18,721
ERIE CUSTOM COMPUTER APPLICATIONS INC	18,504
TOWERSTAR PETS LLC	18,323
KSA & D INC	18,320
CUSTOM MOLDS PLASTICS INC	18,267
KMM GROUP LTD	18,127
CORRY MICRONICS INC	18,091
APPLIED ENERGY SYSTEMS INC	17,734
DOCUMENT SOLUTIONS GROUP INC	17,582
DYNAMIC ENERGY SOLUTIONS LLC	17,493
TUBE METHODS INC	17,342
KCF TECHNOLOGIES INC	17,215
KEYSTONE MACHINERY CORPORATION	17,086
SIGNATURE CUSTOM CABINETRY INC	16,452
CRICKET HOLDCO INC	16,358
ECTOBOX INC	16,319
TRUMBULL CORPORATION	16,137
PDM CONSTRUCTORS INC	16,083
TURN 14 DISTRIBUTION INC	15,767
FLINCHBAUGH COMPANY INC	15,370
CRAZY AARON ENTERPRISES INC	15,253
FRENCH CREEK HOLDINGS COMPANY	15,232
SPICES INC	15,185
SENSE TECHNOLOGY INC	15,118
1SEO TECHNOLOGIES INC	15,107
PHYTOGENX INC	15,009
QUALITY BRIDGE & FAB INC	15,008
GAMRY INSTRUMENTS INC	15,007
WAZOODLE FABRICS LLC	14,975
X-NAV TECHNOLOGIES LLC	14,845
SKIBO ENERGY SYSTEMS LLC	14,800
WIMER FUEL INJECTION & TURBO LLC	14,769
SHOEMAKER MFG SOLUTIONS INC	14,760
OZ COLLABORATIVE LLC	14,637
MARTINS FAMOUS PASTRY SHOPPE INC	14,567
FLEXIBLE COMPENSATORS INC	14,542
APTAGEN LLC	14,500
RJ LEE GROUP INC	14,467
ELK PARTNERS INC	14,345
SHADOWFAX INC & SUBSIDIARY	14,317
KAIER ENGINEERING INCORPORATED	14,245
SNAKE CREEK LASERS LLC	14,240
CONTROL ANALYTICS INC	14,036
PITTSBURGH PLASTICS MANUFACTURING INC	13,971
EASTWOOD HOLDCO LLC	13,924
CRABTREE ROHRBAUGH & ASSOCIATES INC	13,824
HARBOR BUSINESS COMPLIANCE CORPORATION	13,610

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERRED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
MYSTIC ASSEMBLY & DECORATING CO INC	13,386
RAILROAD ASSOCIATES CORPORATION	13,299
TOK INVESTMENT PROPERTIES LLC	13,248
CREATIVE MULTIMEDIA SOLUTIONS LLC	13,213
ATKIN OLSHIN SCHADE ARCHITECTS INC	13,201
LA FRANCE CORP	13,196
COMTECH INDUSTRIES INC	13,125
LORNE G SEIFERT LLC	12,905
OMEGA SYSTEMS CONSULTANTS LLC	12,828
PRESCIENT WEATHER LTD	12,819
DEVELOPMENT DIMENSIONS INTERNATIONAL INC	12,812
EDU LINK INCORPORATED	12,786
HANOVER IRON WORKS INC	12,780
NICHOLSON KOVALCHICK ARCHITECTS PS INC	12,734
MAINSTREAM SWIMSUITS INC	12,733
ACOUSTICSHEEP LLC	12,698
L R COSTANZO CO INC	12,657
TAYLOR STRUCTURAL ENGINEERS INC	12,635
TUSICK & ASSOCIATES ARCHITECTS INC	12,457
JANDM FLUIDICS INC	12,349
SWANK ASSOCIATED COMPANIES INC	12,165
APEXDROP LLC	12,000
ATOPTIX INC	11,937
COMPLIANCE SERVICES LLC	11,888
TORVIAN INC	11,692
BIOHYBRID SOLUTIONS LLC	11,663
TIMBERLANE INC	11,567
NIVO1 LLC	11,351
ICETEC ENERGY SERVICES INC	11,229
B & D BUILDERS LLC	11,192
PRECISION MECHANICAL SERVICES LLC	11,163
BLATEK INDUSTRIES INC	11,104
ARROW ELECTRIC INC	11,053
COMPONENTONE ENTERPRISES LLC	10,854
GRIFF & ASSOCIATES LP	10,646
SPECIALTY COATED PRODUCTS INC	10,636
CENERO LLC	10,551
SJ CONSULTING GROUP INC	10,364
MECCO PARTNERS LLC	10,175
PRECISION PROFILES LLC	10,148
DENTECH INC	10,070
SOLAR TECHNOLOGY INC	10,063
PROCESS APPLICATIONS LIMITED	10,035
ALLEGHENY PETROLEUM PRODUCTS CO	10,011
FINISH THOMPSON INC	9,996
THE CONRAD COMPANY HOLDINGS LLC	9,973
AMERICAN TURNED PRODUCTS INC	9,919
PSYCHOLOGY SOFTWARE TOOLS INC	9,918
NEU DYNAMICS CORP	9,759
HYDRO PAC INC	9,693
CONCURRENT ELECTRONIC DESIGN AUTOMATION LLC	9,573

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERRED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
PLASTECH CONTAINER SYSTEMS INC	9,506
GFS HOLDING CORPORATION	9,483
DUTCH CLIPS LLC	9,346
ONCOURSE SYSTEMS FOR EDUCATION LLC	9,304
AKAS TEX LLC	9,273
PERFIDO WEISKOPF WAGSTAFF GOETTEL LLC	9,259
BUCKLEY FUTURES LLC	9,227
CENTURION CONSTRUCTION GROUP LLC	9,188
AIRR CONSULTING LLC	9,045
CUSTOM PROCESSING SERVICES INC	9,018
RLB VENTURES INC	9,017
SB GLOBAL FOODS INC	8,958
LAMINATORS INCORPORATED	8,883
GASBARRE PRODUCTS INC	8,869
GRUDI ASSOCIATES INC	8,771
CRYSTAL STEEL FABRICATORS INC	8,717
JAREX ENTERPRISES LLC	8,694
DATA MACHINE LLC	8,651
PHASE SHIFT CONSULTING LLC	8,625
SLOAN BROTHERS CO	8,623
FED REPORTING LLC	8,592
MILLENNIUM MANUFACTURING INC	8,572
PHL COLLECTIVE LLC	8,554
ACCUDYN PRODUCTS INC	8,488
LASER TOOL INC	8,414
OZ ENTERPRISES LLC	8,363
CIMA NETWORK INC	8,302
MPP HOLDINGS LLC	8,272
CORRY MANUFACTURING COMPANY	8,178
METAPHASE TECHNOLOGIES INC	8,153
FRONT STREET REFRIGERATED SERVICES LLC	8,019
NEXGEN AUTOMATION INC	7,958
HX COILS LLC	7,938
SCHILLER & HERSH ASSOCIATES INC	7,901
GEMINI MACHINING COMPANY INC	7,884
K S TOOLING INC	7,850
FORTRESS POWER LLC	7,721
H B FRAZER CO	7,717
CODY COMPUTER SERVICES INC	7,534
SOMERSET PLANNING & ENGINEERING SERVICES LLC	7,515
MARATHON STUDIOS INC	7,491
CORAZON INC	7,433
OCTECH LLC	7,380
GLOBAL PACKAGING INC	7,371
OLIVER SPRINKLER CO INC	7,091
ADVANCED MANUFACTURING TECHNOLOGIES INC	7,086
PVELLC	6,776
NATIONAL REFRIGERATION & AIR CONDITIONING PRODUCTS IN	6,672
MISCO PRODUCTS CORPORATION	6,598
EMEH INC	6,499
KADCO CERAMICS LLC	6,425

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERRED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
IEI GROUP LTD	6,383
SOLENOID SOLUTIONS INC	6,379
FRANKLIN FARMS EAST INC	6,291
PENN WELD INC	6,286
CONSTRUCTURAL DYNAMICS INC	6,282
WOLFGANG OPERATIONS LLC	6,277
PORTER CONSULTING ENGINEERS PC	6,243
C U E INC	6,194
WAMPOLE MILLER INC	6,164
HAMPTON HOURLY ADMINISTRATION LLC	6,122
MODERN INDUSTRIES INC	6,122
ARMADA PARTNERS LP	6,113
DOUBLE H PLASTICS INC	6,091
LIFE SUPPORT INTERNATIONAL INC	6,042
K'NEX BRANDS LP	6,031
HAMMEL COMPANIES INC	5,987
EXECUTIVEPULSE INC	5,962
WTW ARCHITECTS INC	5,936
K & H TECHNOLOGIES INC	5,929
MISSION CRITICAL PARTNERS INC	5,906
ZIPCORP INC	5,859
AGR INTERNATIONAL INC	5,818
BASELINE CONTRACTING INC	5,744
MAYVUE LLC	5,741
TURN 5 INC	5,719
NORTHEAST INDUSTRIAL MANUFACTURING INC	5,626
TECH TUBE INC	5,622
JOAO & BRADLEY CONSTRUCTION COMPANY INC	5,463
AREA TOOL & MANUFACTURING INC	5,402
B & G MANUFACTURING CO INC	5,371
PROFIVISION INC	5,242
INNOVATIVE SINTERED METALS INC	5,131
CIMA TECHNOLOGY INC	5,076
B J TERRONI CO INC	5,056
GEORGE KO INDUSTRIES INC	5,043
STONER INCORPORATED	5,017
VSI OF DELAWARE INC	4,946
PENN MANUFACTURING INDUSTRIES INC	4,933
E-TECH INDUSTRIAL CORP	4,927
GRUE BLEEN LLC	4,849
VALTECH CORPORATION	4,765
ALLOY 5 LLC	4,717
SAY PLASTICS INC	4,650
BLAIR IMAGE ELEMENTS INC	4,629
KERMITOOL ACQUISITION COMPANY INC	4,574
PHILLY AUTO LABOR SERVICES LLC	4,554
PRECISION CUT INDUSTRIES INC	4,517
NATL GLASS METAL CO INC	4,508
KEYSTONE SPORTING ARMS LLC	4,500
J BAUR MACHINING INC	4,493
V T GRAPHICS INCORPORATED	4,488

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERRED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
SOVEREIGN COMMERCIAL SERVICES INC	4,445
AMERICAN MANUFACTURING & ENGINEERING CO	4,411
R A WALTON & CO INC	4,391
SWEETGUMINC	4,349
R S MOWERY & SONS INC	4,194
ADVANCED POWDER PRODUCTS INC	4,168
THREERIVERS 3D INC	4,008
GREYSIGNAL INC	3,844
J D ECKMAN INC	3,805
HETRAN B INC	3,797
ETA INDUSTRIES INC	3,756
F & S TOOL INC	3,707
CONTROL CONCEPTS & COMPONENTS INC CFN	3,674
MCADOO & ALLEN INC	3,664
K12SYSTEMS INC	3,605
ALCOM PRINTING GROUP INC	3,579
ACME CORRUGATED BOX CO	3,568
DYER QUARRY INC	3,562
TARGET PRECISION LLC	3,551
HEALTHPLANCRM LLC	3,478
VERTICAL SCREEN INC	3,477
ROBERT MAZZA INC	3,474
SHAW INDUSTRIES INC	3,465
SHERPA SOFTWARE LLC	3,463
STARGAZER CAST IRON LLC	3,422
DELSERRO ENGINEERING SOLUTIONS INC	3,418
LOST TAVERN BREWING LLC	3,340
HANNA TRANSFER COMPANY NORTH	3,335
EDON COMPOSITES LLC	3,252
VANZYVERDEN INC	3,252
PULSE TECHNOLOGIES INC	3,217
PLASTIKOS INC	3,206
REXMET CORPORATION	3,194
NEW STANDARD CORPORATION	3,148
ARCHITECTURAL PRECAST INNOVATIONS INC	3,107
WORLD ELECTRONICS SALES & SERVICE INC	3,085
ECOTECHINC	3,023
SUPERIOR TIRE & RUBBER CORP	3,014
MARY CORNELL	2,986
COLUMNTEK LLC	2,954
IMPULSE TECHNOLOGY LLC	2,899
PHB INC	2,885
ZURA INC	2,883
WOLF TECHNOLOGIES LLC	2,845
GO2POWER LLC	2,784
CAHAN INVESTMENT COMPANY	2,717
DYNAMIC MANUFACTURING LLC	2,712
INDUSTRIAL VISION SYSTEMS INC	2,698
IEI ARCHITECTS INC	2,655
MESSICK FARM EQUIPMENT INC	2,648
PROCONEX ACQUISITION INC	2,610

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERRED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
PORT ERIE PLASTICS INC	2,589
JAMES J ANDERSON CONSTRUCTION COMPANY INC	2,519
PARTRIDGE VENTURE ENGINEERING PC	2,457
CERAMIC SHOP LLC	2,431
HRANEC SHEET METAL INC	2,379
M3 MEDIA GROUP INC	2,330
STORMLOOP TECHNOLOGIES LLC	2,274
WHITE OAK MILLS INC	2,248
SPECIALTY FABRICATION & POWDER COATING LLC	2,227
RGS PRODUCTS INC	2,222
STRONG INDUSTRIES INC	2,216
DIVERSIFIED MACHINE INC	2,205
BACKFLIPS INC	2,157
ELECTRON ENERGY CORP	2,121
BULK CHEMICALS INC	2,063
AP THERMOFORMING LLC	2,050
STATE OF THE ART INC	1,987
FACIOMETRICS LLC	1,945
CONTROLLED MOLDING INC	1,937
MATREYA LLC	1,871
LSC DESIGN INC	1,861
GREEN LAWN FERTILIZING LLC	1,849
DIVERSIFIED COATINGS INC	1,790
TRIGON HOLDING INC	1,729
OROURKE & SONS INC	1,577
ENGAGED PROSPECT LLC	1,550
CYBERSONICS INC	1,515
COLORFIN LLC	1,486
QMAC-QUALITY MACHINING INC	1,434
KALINOWSKI MACHINE LLC	1,431
BIRDBRAIN TECHNOLOGIES LLC	1,416
HILLSIDE ACQUISITION GROUP LLC	1,307
CHICKIES CREEK FARM LLC	1,302
WIEGEL MACHINE INC	1,296
CUSTOM LAMINATING CORPORATION	1,282
FOX SPECIALTIES INC	1,276
NEW HEIGHTS LLC	1,267
PENNLAKE CORPORATION	1,266
LOZIER CORPORATION	1,266
REMEDY SIMULATION GROUP INC	1,190
NEWMAN & COMPANY INC	1,168
PITTSBURGH AFRICA VENTURE PARTNERS LLC	1,056
BURKHARDT SHEET METAL COMPANY INC	1,049
HENDRICK MANUFACTURING COMPANY	1,026
CANTO TOOL CORPORATION	1,024
JOSEPH BARBATO ASSOCIATES LLC	1,016
VICTAULIC FIRE SAFTEY CO	1,011
ONEUP APP LLC	994
MCCOURT LABEL CABINET COMPANY	930
PROUD DEVELOPMENT	840
EAGLE METALS INC	792

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX D - CREDITS TRANSFERRED IN 2023, BY AWARDEE

NAME	CREDIT TRANSFERRED
EVOLUTION MOLDING SOLUTIONS INC	791
GETTLE INCORPORATED	775
PITTMOSS LLC	746
D G YUENGLING & SON INCORPORATED	715
ERNST CONSERVATION SEEDS INC	704
RIVERSIDE MATERIALS INC	702
PRESSURE TECHNOLOGY INC	682
JLS AUTOMATION LLC	614
HENWIL CORPORATION	585
FEDERAL CARBIDE COMPANY	563
WILD MEADOW FARMS LLC	525
WCJ PILGRIM WIRE LLC	508
APPLIED SYSTEMS ASSOCS INC	468
CARDINAL SYSTEMS INC	450
VIKING TOOL & GAGE INCORPORATED	385
SUNNY DELL FOODS INC	377
VERTEX INC	365
RADIUS CORPORATION	303
INCLINATOR COMPANY OF AMERICA	274
SPRING CITY ELECTRICAL MANUFACTURING COMPANY	214
WOODWARD MCOACH INC	209
RAPID REACTION INC	188
PTR GROUP LP	144
WAWA INC	141
OLIVIER CHATEAU 2015	134
BASHLIN INDUSTRIES INC	128
ECOREMEDY LLC	127
LANCASTERERC HOLDINGS LLC	127
SWAIN AUSTRALIAN TOURS 2003 INC	103
BIOMETRIC IMAGING INC	97
S J A CONSTRUCTION INC	90
ALWARD TOOL	66
SENTINEL CAMERA SYSTEMS LLC	62
TESSY PLASTICS CORP	31
PREMIER DENTAL PRODUCTS COMPANY	29
FOOD MANAGEMENT SERVICES INC	22
J2 MEDICAL LP	22
PRECISION CUSTOM COMPONENTS LLC	19
TRIGON INCORPORATED	17
RIGHT REASON TECHNOLOGIES LLC	16
IRA G STEFFY & SON INC	13
KEMPER EQUIPMENT INC	7
PERSONNEL DATA SYSTEMS INC	5

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX E - CREDITS TRANSFERRED IN 2023, BY RECIPIENT (PASS-THROUGH ENTITIES OR INDIVIDUALS)

NAME	CREDIT TRANSFERRED
MERCK & CO INC	2,937,891
AMAZON.COM SALES INC	1,374,347
NEXTGEN HEALTHCARE INC	336,317
HEIDELBERG MATERIALS US INC	283,622
HYDRO HOLDING NORTH AMERICA INC	141,679
BLACK KNIGHT INFOSERV LLC	127,183
JEFFRIES FINANCIAL GROUP INC	67,655
GSI HEALTH HOLDINGS LLC	54,195
BOHLER ENGINEERING INC	50,675
CERTARA USA INC	44,549
ARBUTUS BIOPHARMA US HOLDINGS INC	37,500
REAL FRESH INC	28,748
ROSS TECHNOLOGY COMPANY	21,590
ROBERT BOSCH NORTH AMERICA CORP	20,515
MAGUIRE INSURANCE AGENCY INC	19,137
CRICKET HOLDCO INC	16,358
OMEGA SYSTEMS INTERMEDIATE HOLDINGS INC	12,828
APEX SOFTWARE CORPORATION	10,854
ROSEVILLE ROAD LIMITED PARTNERSHIP	10,795
RITTENHOUSE VENTURES II LP	10,616
PRIMETALS TECHNOLOGIES USA LLC	9,372
KIAN MEZZANINE PARTNERS II LP	9,104
ALPS ELECTRIC CO LTD	8,117
MPP INVESTMENT LLC	8,046
LLR V-SUVODA LLC	7,304
MCP ACQUISITION CORPORATION	5,906
ELJOBO INC	5,075
HAPPY PAPI INVESTMENTS LLC	4,981
SERENDIP HOLDINGS LLC	4,901
DERMA MEDICAL SYSTEMS INC	4,835
SCHOOLHOUSE LANE PARTNERS LLC	4,309
PORTER CONSULTING ENGINEERS PC	4,291
PARTRIDGE VENTURE ENGINEERING PC	4,236
GLEN ARDEN ASSOCIATES	4,051
RC EXECUTIVE PARTNERS LLC	4,019
ARMOUR TECHNOLOGIES INC	3,796
THE CONSILIO GROUP	3,239
RAMPOLLA FAMILY MARKETING COMPANY LLC	2,976
CAHAN INVESTMENT COMPANY	2,717
CROESUS XVI PARTNERS	2,645
HENDERSON BROTHERS INC	2,154
CAMDEN HILLS PROPERTIES LLC	1,812
BCS ENTERPRISE HOLDING LLC DISREGARDED	1,716
UPMC UNIVERSITY OF PITTSBURGH MEDICAL CENTER	1,380
ORGANIC GROWTH LLC	1,358
CHICKIES CREEK FARM LLC	1,302
LLR V LL-SUVODA LP	1,217
BRANDT TWERSKY PARTNERSHIP	1,132
EDI INTERNATIONAL INC	944
PRIDE MOBILITY PRODUCTS CORPORATION	859
PV GEOLOGY PC	830

PENNSYLVANIA RESEARCH & DEVELOPMENT TAX CREDIT - 2024 REPORT

APPENDIX E - CREDITS TRANSFERRED IN 2023, BY RECIPIENT (PASS-THROUGH ENTITIES OR INDIVIDUALS)

NAME	CREDIT TRANSFERRED
ASC LLC	768
STATE OF THE ART INC	744
RENFREW LLC	731
CARNEGIE MELLON UNIVERSITY	706
BEYOND STOWE LLC	703
LLR PARALLEL V-SUVODA LLC	485
WATSON KUNDA & SONS INC	484
BEN FRANKLIN TECHNOLOGY CENTER OF SOUTHEASTERN PA	449
LLR SPONSOR CO-INVEST V-SUVODA LP	360
MILLER WCO LLC	314
BEAVER COURT ASSOCIATES LP	308
DORSTENER WIRE DRAWING INC	284
INNOVATION WORKS INC	271
JEBL LLC	187
RPM3 LLC	187
PVE ENGINEERING PC	187
DFH LLC	187
CALICO VETERINARY LENDING LLC	152
JONES CAPITAL GROUP LLC	145
PTR MANAGEMENT CO LLC	144
STRATA TRUST COMPANY	101
R M M HOLDINGS INC	95
MCKEAN CONSOLIDATED CORPORATION	94
K NEX INDUSTRIES INC	79
MOSSY ROCK ROAD LLC	70
CCRCAD LLC	70
HM NANOMED LLC	66
COLORADO MEDICAL DEVICE CONSULTING	62
FLATLEY INVESTMENT PARTNERSHIP	51
BROWN MICHAELS	44
JRK ASSOCIATES INC IV	40
HALL-WISTER HOUSE LLC	34
MARSHALL ASSOCIATES INC	32
QADALYST LLC	22
DORMAN PRODUCTS INC	20
MCGPINC	4
SHAREHOLDERS, MEMBERS AND PARTNERS	12,973,534