

**Report to the Pennsylvania General Assembly
on the Research and Development (R&D)
Tax Credit**



The Pennsylvania Department of Revenue
Bureau of Research

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The Pennsylvania R&D Tax Credit Statute

On May 7, 1997, Act 7 of 1997 created the Pennsylvania research and 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 expense.¹

For R&D tax credits awarded between December 1997 and December 2003, Act 7 of 1997 authorized the Department of Revenue (Department) to approve up to \$15 million in total tax credits per fiscal year. Additionally, \$3 million of the \$15 million was set aside for “small” businesses, where a “small business” is 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).”

Over the years, several changes have been made to the R&D tax credit statute. Table 1 lists all of the acts that have changed the R&D tax credit statute, along with the applicable award years, the overall tax credit cap and the “small” business set aside.

**Table 1. Pennsylvania Research & Development Tax Credit Program
History of R&D Tax Credit Legislation**

Legislation	Award Years	Total Tax Credit Cap	Small Business Set Aside
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 ²	2011 - 2016	\$55.0 million	\$11.0 million
Act 85 of 2012 ³	Sunset Date Repealed	Unchanged	Unchanged
Act 85 of 2016 ⁴	Sunset Date Repealed	Unchanged	Unchanged

One of the more noteworthy features of the R&D tax credit program is the ability for R&D tax credit recipients to sell unused tax credits to other taxpayers. Act 46 of 2003 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

¹ Public Law 99-514, 26 U.S.C. § 41.

² The prior sunset date was established by Act 116 of 2006.

³ Act 85 of 2012 repealed the sunset date for the R&D tax credit in Section 1712-B, but left Section 1707-B unchanged.

⁴ Act 85 of 2016 repealed the sunset date for the R&D tax credit in Section 1707-B.

the credit. According to Act 48 of 2009, for R&D tax credits awarded in December 2009 and forward, the one year holding period is no longer in effect; credits awarded in 2009 and forward can be sold immediately. The purchaser or assignee must still 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 percent 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.

The R&D tax credit may be claimed against the following taxes: the capital stock and franchise tax (CSFT)⁵, the corporate net income tax (CNIT) and the personal income tax (PIT). Taxpayers claiming the credit against any of these taxes could not reduce their tax liability for taxable years 2004 and earlier by more than 50 percent. Act 46 of 2003 eliminated this provision starting with tax year 2005; a taxpayer is able to use the awarded R&D tax credit to reduce a given tax liability by up to 100 percent. Taxpayers awarded R&D tax credits by the Department may carry over and apply any unused tax credit for up to fifteen (15) succeeding taxable years.

The Pennsylvania R&D tax credit, which is calculated using the increase over the taxpayer's base year research expenses for qualified R&D conducted within Pennsylvania, originally generated a tentative credit at the rate of 10 percent. However, Act 116 of 2006 increased the rate at which the tentative R&D tax credit is calculated to 20 percent for small businesses only beginning with the credit awarded in December 2006 and forward.

Taxpayers must submit an application to the Department by September 15th 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 December 15th to notify taxpayers of their approved tax credit amount.

Act 85 of 2012 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 of 2016 repealed the reference to the sunset date in Section 1707-B.

Act 46 of 2003 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 and for each year thereafter. Appendix A at the end of this report lists the name of each taxpayer receiving the R&D tax credit from the Department in December 2015, 2016 and 2017, along with the amount of credit received and utilized. In an effort to control the size of the document, this report will only list the names of taxpayers who have received the R&D tax credit in the current year and the two preceding years. Reports from earlier years will still be available that retain information on earlier years.

The other major change in the R&D tax credit program made by Act 46 of 2003 was the creation of the R&D Tax Credit Assignment Program. The program, which is primarily administered by DCED, permits taxpayers with unused R&D tax credits to sell them for cash to other taxpayers who can use them. The goal of the program is to "assist the growth and development of technology-oriented businesses, particularly small start-up technology businesses."⁶ These small start-up firms, which often do not have significant tax liabilities in their early years, receive cash for their unused R&D tax credits.⁷ The purchasers of the unused R&D tax credits are then able to partially offset their own tax liabilities with the unused credits.

⁵ The R&D tax credit can no longer be used against the CSFT; the CSFT was eliminated for tax year 2016 and forward.

⁶ "Research and Development Tax Credit Assignment Program Guidelines," DCED, September 2004.

⁷ "Unused R&D tax credits" means that the taxpayer has not applied the tax credits against a specific tax year liability. Further, the taxpayer cannot sell the tax credit if it has any unpaid liabilities against which the tax credit could be used.

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 percent of a qualified tax liability in a tax year. The buyer cannot carry forward, carry back, get a refund for 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 R&D tax credit.

An R&D tax credit will be considered to be unused and, therefore, available for sale as long as it is not applied against a specific tax year liability and the taxpayer does not have a collectible tax liability. As of February 2018, \$109.6 million of the \$563.0 million R&D tax credit awarded between December 2003 and December 2016 (i.e., 19.5 percent of the \$563.0 million) has been sold or assigned. Purchasers of those unused tax credits have paid \$102.3 million for them in total, or 93.5 percent of the value of the unused tax credits.

The complete statistics on sold or assigned unused tax credits by award year are shown in Table 2.

**Table 2. Pennsylvania Research & Development Tax Credit Program
Complete Statistics on the Sale or Assignment of Unused R&D Tax Credits**

(Millions)

Credit Awarded In	R&D Credit Awarded	Amount of Unused Tax Credits Sold/Assigned	Number of Taxpayers Selling/Assigning Unused Credit	Amount of Unused Tax Credits Sold For	Percent of Value Unused Tax Credits Sold For
Dec 2003	\$15.0	\$ 1.3	18	\$ 1.2	91.4%
Dec 2004	\$30.0	\$ 3.7	44	\$ 3.3	90.1%
Dec 2005	\$30.0	\$ 9.2	51	\$ 8.6	93.3%
Dec 2006	\$40.0	\$ 8.7	76	\$ 8.2	93.9%
Dec 2007	\$40.0	\$ 9.2	94	\$ 8.8	95.7%
Dec 2008	\$40.0	\$11.0	125	\$10.4	95.2%
Dec 2009	\$20.0	\$ 5.2	111	\$ 4.8	93.5%
Dec 2010	\$18.0	\$ 2.9	109	\$ 2.7	93.7%
Dec 2011	\$55.0	\$13.6	124	\$12.6	93.0%
Dec 2012	\$55.0	\$ 5.0	123	\$ 4.6	92.0%
Dec 2013	\$55.0	\$ 8.7	159	\$ 8.0	92.9%
Dec 2014	\$55.0	\$11.9	185	\$11.0	92.5%
Dec 2015	\$55.0	\$13.1	190	\$12.2	92.9%
Dec 2016	\$55.0	\$ 6.2	134	\$ 5.9	94.7%
TOTAL	\$563.0	\$109.6		\$102.3	93.5%

Tax credit sales are often arranged by a broker, who provides a service by bringing together sellers and buyers of credits, and in return takes a portion of the tax credit as their fee. The Department does not have complete data about these arrangements. However, DCED staff has stated that the level of broker fees can vary widely, but the average broker fee is in the range of 5 to 6 percent of the value of the credit.

R&D Tax Credit Claimed and Awarded in Pennsylvania for December 2017

Table 3 shows the amount of R&D tax credit awarded by the Department in 2017 for qualified research expenditures made by taxpayers in Pennsylvania in taxable year 2016. Without the \$55 million cap, \$108.1 million in credit would have been awarded to 1,126 taxpayers. 83.3 percent of approved taxpayers received an R&D tax credit of less than \$50,000, receiving 21.5 percent of the total amount of approved credit. Taxpayers with an approved R&D tax credit of \$50,000 or more claimed 78.5 percent of the approved credit amount. The 188 taxpayers receiving \$50,000 or more in credit represented 16.7 percent of the total number of applicants.

**Table 3. Pennsylvania Research & Development Tax Credit Program
Tentative and Actual Credit for Tax Year 2017⁸**

Actual Credit Range	Number of Applicants	Percent of Applicants	Tentative Credit Amount	Actual Credit Amount	Percent of Actual Credit
\$1 - \$4,999	296	26.3%	\$1,316,251	\$652,626	1.2%
\$5,000 - \$19,999	436	38.7%	\$9,602,358	\$4,773,018	8.7%
\$20,000 - \$49,999	206	18.3%	\$12,696,132	\$6,386,104	11.6%
\$50,000 - \$99,999	87	7.7%	\$12,320,866	\$6,217,255	11.3%
\$100,000 - \$499,999	82	7.3%	\$29,872,686	\$15,117,132	27.5%
\$500,000 - \$999,999	14	1.2%	\$18,397,093	\$9,594,829	17.4%
\$1,000,000 & greater	5	0.4%	\$23,847,617	\$12,259,036	22.3%
TOTAL	1,126	100%	\$108,053,003	\$55,000,000	100%

Table 4 details the tentative amount of R&D tax credit awarded by the Department for each year through December 2017.

**Table 4. Pennsylvania Research and Development Tax Credit Program
Total Tentative Tax Credit Awarded By Year, 1997-2017**

Credit Awarded In	Number of Applicants	Tentative Credit Amount	Credit Awarded In	Number of Applicants	Tentative Credit Amount
Dec 1997	292	\$66,371,038	Dec 2007	439	\$94,732,918
Dec 1998	270	\$56,572,339	Dec 2008	466	\$90,712,865
Dec 1999	275	\$53,456,489	Dec 2009	507	\$80,208,000
Dec 2000	284	\$59,207,493	Dec 2010	488	\$94,419,561
Dec 2001	293	\$71,407,604	Dec 2011	537	\$130,551,357
Dec 2002	254	\$74,255,800	Dec 2012	569	\$106,966,882
Dec 2003	242	\$70,191,922	Dec 2013	631	\$94,468,310
Dec 2004	274	\$70,932,913	Dec 2014	765	\$87,511,431
Dec 2005	291	\$65,806,128	Dec 2015	790	\$84,110,535
Dec 2006	379	\$78,640,025	Dec 2016	948	\$85,484,955
			Dec 2017	1,126	\$108,053,003

From its inception through December 2017, the R&D tax credit program has awarded a total of \$708 million in tax credit to 3,145 different taxpayers. In December 2017, 1,126 taxpayers were awarded the R&D tax credit,

⁸ Detail may not add up due to rounding; 216 other applicants were rejected and did not receive any credit.

the highest number of applicants awarded the tax credit in one year in the history of the program. Without any caps on annual awards, \$1,724.1 million in R&D tax credit would have been awarded to the 3,145 taxpayers. Over the years, the varying annual credit caps have reduced the amount of R&D tax credit that would have been awarded to 41.1 percent of what was requested.

Table 5 presents the R&D tax credit awarded in December 2017 by business type.

**Table 5. Pennsylvania Research and Development Tax Credit Program
Actual Credits by Business Type in 2017**

Business Type	Number of Taxpayers	Percent of Taxpayers	Actual Credit Amount	Percent of Actual Credit
Manufacturing	491	43.6%	\$29,546,491	53.7%
Services	432	38.4%	\$19,623,545	35.7%
Misc. ⁹	203	18.0%	\$5,829,964	10.6%
TOTAL	1,126	100%	\$55,000,000	100%

Manufacturers represented 43.6 percent of the taxpayers receiving the tax credit in 2017, claiming 53.7 percent of the total amount of approved credit. Pharmaceutical manufacturers continue to claim the largest single share for manufacturers receiving the R&D tax credit; 33 pharmaceutical manufacturers requesting credit were awarded \$14.7 million in credit. In the Services sector, the largest number of credit recipients were designers of computer systems and related services, with 118 recipients receiving \$4.4 million in credit. Also in the Services sector, the largest amount of credit went to companies in data and information services; 65 such companies received \$7.2 million in credit in December 2017. In the Misc. sector, there was not one particular type of business among tax credit recipients that was more prevalent.

Table 6 provides a breakdown of the R&D tax credit claimed by “small” and “not small” businesses in December 2017. As noted earlier, “small” businesses are those with net book assets of less than \$5 million.

**Table 6. Pennsylvania Research and Development Tax Credit Program
Small and Not Small Businesses in 2017**

Business Size	Number of Applicants	Percent of Applicants	Tentative Credit Amount	Actual Credit Amount	Percent of Actual Credit
Small	531	47.2	\$22,756,521	\$11,000,000	20.0
Not Small	595	52.8	\$85,926,482	\$44,000,000	80.0
TOTAL	1,126	100%	\$108,053,003	\$55,000,000	100%

In December 2017, “small” businesses filed for awards totaling more than the \$11.0 million in R&D tax credit set aside for them, hence their awards had to be pro-rated. The \$44.0 million program cap reduced the amount of credit approved for the “not small” businesses to 51.6 percent of the requested amount in December of 2017. Last year, the “not small” businesses received 65.8 percent of the amount of credit they requested in December 2016.

Table 7 shows the history of the R&D tax credit for the “small” business set aside awarded by the Department for each year through December 2017.

⁹ Misc. business type includes business activities associated with individuals or corporations with North American Industry Classification System (NAICS) codes for the agriculture, construction, mining, wholesale trade, retail trade, and financial sectors.

**Table 7. Pennsylvania Research and Development Tax Credit Program
Small Business Set Aside By Year, 1997-2017**

Credit Awarded In	Number of Applicants	Tentative Credit Amount	Actual Credit Amount
Dec 1997	67	\$889,054	\$889,054
Dec 1998	85	\$1,821,354	\$1,821,354
Dec 1999	82	\$3,001,986	\$3,000,000
Dec 2000	83	\$1,545,359	\$1,545,359
Dec 2001	75	\$1,373,382	\$1,373,382
Dec 2002	79	\$1,615,602	\$1,615,602
Dec 2003	81	\$1,082,263	\$1,082,263
Dec 2004	94	\$1,419,845	\$1,419,845
Dec 2005	108	\$2,268,046	\$2,268,046
Dec 2006	173	\$7,081,079	\$7,081,079
Dec 2007	193	\$6,845,879	\$6,845,879
Dec 2008	205	\$8,052,975	\$8,000,000
Dec 2009	211	\$8,688,383	\$4,000,000
Dec 2010	213	\$8,487,767	\$3,600,000
Dec 2011	217	\$7,632,711	\$7,632,711
Dec 2012	242	\$7,085,229	\$7,085,229
Dec 2013	276	\$9,405,048	\$9,405,048
Dec 2014	332	\$10,801,901	\$10,801,094
Dec 2015	348	\$11,512,830	\$11,000,000
Dec 2016	432	\$18,610,980	\$11,000,000
Dec 2017	531	\$22,756,521	\$11,000,000

“Small businesses” have been awarded \$112.5 million of the \$142.0 million in R&D tax credits that they have applied for since the inception of the R&D tax credit program; they have received 79.2 percent of the total amount of tax credits for which they applied. A total of \$141.6 million in tax credit was set aside for them over this period.

Seven times in the history of the R&D tax credit program the “small” business set aside has been awarded in total: 1999, 2008, 2009, 2010, 2015, 2016 and 2017. Most years, the “small businesses” have received the total amount of tax credit for which they applied. When “small” businesses claim less than the R&D credit set aside for them, the “not small” businesses receive a pro-rated amount of the excess R&D tax credit not claimed by the “small” businesses.

Table 8 shows the amount of R&D tax credit that has been applied against the CNIT, CSFT and PIT for taxable years 1997 through 2015. The data in Table 8 are for taxpayers that have directly received the tax credit from the Department, as well as those taxpayers that have purchased unused R&D tax credits.

The first taxable year against which the credit could be used was 1997. 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 February 2018.

Table 8 shows the distribution of the R&D tax credits that have been applied to specific tax years. As of February 2018, \$485.2 million, or 81.1 percent of the \$598.0 million in R&D tax credit that has been awarded for 1997 through 2015, has been applied to specific tax periods. Of the applied credits, 38.8 percent has been applied against the CSFT; 55.0 percent has been applied against the CNIT; 6.2 percent has been applied against the PIT. 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 assessment or the application of other credits.

**Table 8. Pennsylvania Research and Development Tax Credit Program
Application by Tax Type and Taxable Year, 1997-2015**

Taxable Year	Corporate Net Income Tax	Number of Taxpayers	Capital Stock & Franchise Tax	Number of Taxpayers	Personal Income Tax	Number of Taxpayers
1997	\$ 4,808,403	93	\$ 3,654,425	192	\$187,863	91
1998	\$ 2,669,951	84	\$ 5,262,915	199	\$791,636	195
1999	\$ 3,129,320	91	\$ 6,317,818	233	\$439,671	162
2000	\$ 4,495,931	77	\$ 6,465,943	213	\$523,087	201
2001	\$ 6,364,344	82	\$ 7,141,332	217	\$534,126	173
2002	\$ 7,925,753	49	\$ 5,313,965	220	\$487,586	169
2003	\$ 8,733,454	62	\$ 8,086,269	217	\$337,985	154
2004	\$14,874,207	67	\$ 8,387,866	263	\$721,801	171
2005	\$12,630,586	66	\$13,164,167	291	\$ 1,389,912	179
2006	\$16,262,792	95	\$15,888,858	326	\$ 2,679,623	235
2007	\$15,221,106	104	\$12,720,361	356	\$ 1,799,924	236
2008	\$18,151,421	103	\$11,792,443	407	\$ 1,327,515	306
2009	\$ 8,414,374	91	\$12,364,902	480	\$ 1,460,930	211
2010	\$20,594,531	110	\$12,878,861	505	\$ 1,334,225	187
2011	\$19,747,901	108	\$20,988,923	537	\$ 1,888,433	256
2012	\$16,423,206	145	\$14,487,977	532	\$ 2,966,287	325
2013	\$34,096,095	159	\$ 7,361,657	578	\$ 3,073,282	429
2014	\$30,552,963	173	\$10,355,257	671	\$ 3,771,972	546
2015	\$21,694,000	149	\$ 5,889,584	723	\$ 4,188,447	626
TOTAL	\$266,790,336		\$188,523,522		\$29,904,305	

It should be noted that it is possible that some portion of the R&D tax credit awarded by the Department might never be used against a tax year liability, particularly those credits not affected by the provisions of Act 46 of 2003.

R&D tax credits awarded in December 1997, the first credits awarded under the program, have expired and cannot be used beyond tax year 2012. As of February 2018, of the \$15.0 million awarded to 292 taxpayers in December 1997, approximately \$225,00 has not been used. This amounts to 1.5 percent of the total amount of R&D tax credits awarded in 1997.

R&D tax credits awarded in December 1998 have expired and cannot be used beyond tax year 2013. As of February 2018, of the \$15.0 million awarded to 270 taxpayers in December 1998, approximately \$309,000 has not been used. This amounts to 2.1 percent of the total amount of R&D tax credits awarded in 1998.

R&D tax credits awarded in December 1999 have expired and cannot be used beyond tax year 2014. As of February 2018, of the \$15.0 million awarded to 275 taxpayers in December 1999, approximately \$462,000 has not been used. This amounts to 3.1 percent of the total amount of R&D tax credits awarded in 1999.

It is still possible that these expired tax credits could be used if certain past tax liabilities for those taxpayers were to change, but those tax credits cannot be sold or used against any future tax years.

One possible reason for non-use of the tax credit is a reorganization in which a taxpayer claiming the credit goes out of existence or merges with another business before applying the credit against a tax liability. Another observation about usage of the tax credit is that, for taxable years prior to 2005, the amount of credit a taxpayer could claim against a tax type in one tax year was limited to 50 percent of the tax liability. This provision had ensured that a taxpayer could not totally eliminate a tax liability using only the R&D tax credit. However, Act 46 of 2003 eliminated the 50 percent limit. This fact, combined with the 15-year carryover, should allow taxpayers to receive most, if not all, of the tax benefit of the credit. Further, the provision in Act 46 of 2003 allowing the sale or assignment of any unused R&D tax credit awarded in December 2003 and after should minimize how much R&D tax credit is not utilized.

As of January 1, 2016, the CSFT has been eliminated, and the R&D tax credit can no longer be claimed against it for tax year 2016 and forward. This is important for S corporations and LLCs that are not subject to the CNIT. S corporations and LLCs may pass the tax credit through to shareholders who can claim it against their PIT. Therefore, S corporations and LLCs, in order to use the R&D tax credit after 2016, will have to either apply it against PIT or sell their unused tax credits. They will be able to carry it forward for up to 15 taxable years.

Taxes Paid by R&D Tax Credit Recipients

Table 9 shows the CNIT and CSFT liabilities for taxable year 2015 (the latest year for which reports are available for all taxpayers) for taxpayers receiving the R&D tax credit in 2017. Table 9 and Table 5 have a similar structure in order to provide comparability. Please note that taxpayers claiming the credit against the personal income tax are not included in these data. Also, taxpayers who purchased unused R&D tax credit are not included in these data.

**Table 9. Pennsylvania Research and Development Tax Credit Program
Taxable Year 2015 Tax Liabilities by Business Type**

Business Type	2015 CSFT Liability	2015 CNIT Liability
Manufacturing	\$ 2,623,867	\$39,685,883
Services	\$ 1,539,208	\$52,618,988
Misc.	\$ 2,288,662	\$52,270,411
TOTAL	\$ 6,451,737	\$144,575,282

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 2017 to the total tax year 2015 self-assessed CNIT and CSFT liabilities.¹⁰ Of the 1,126 taxpayers receiving the R&D tax credit in 2017 that are subject to the CNIT or CSFT, their total self-assessed 2015 tax year CNIT and CSFT liabilities totaled \$151.0 million. Though there are obviously varied ratios per individual taxpayer, the \$55.0 million in tax credit awarded in 2017 represented 36.4 percent of the total self-assessed tax amount for tax year 2015, while the \$108.1 million in tax credit requested represented 71.5 percent of the total self-assessed tax amount for tax year 2015.

The total 2015 CSFT liability for the 182 S corporations and LLCs receiving the R&D tax credit in 2017 was \$0.3 million. Out of the 182 Pennsylvania S corporations or LLCs, 55 had a CSFT liability of zero for 2015. The total 2015 CSFT liability for the 944 C corporations receiving the R&D tax credit in 2017 was \$6.2 million. Out of the 944 C corporations, 360 had a CSFT liability of zero for 2015.

The 944 C corporations receiving the tax credit in 2017 and subject to the CNIT had a total taxable year 2015 CNIT liability of \$144.4 million. Of these companies, 777 were C corporations with a taxable year 2015 CNIT liability equal to zero, due to negative net income in taxable year 2015. In most cases, the income of Pennsylvania S corporations and LLCs is passed through to the individual owners and subject to the personal income tax.

Federal R&D Tax Credit Program

The federal government first adopted the R&D tax credit as a temporary credit in 1981. The federal government does not cap the total credit amount that can be claimed in a taxable year. Since its enactment the credit was temporary and was routinely extended through legislation. On December 18, 2015, the credit was made permanent and enhanced with the enactment of the Protecting Americans from Tax Hikes (PATH) Act of 2015 (H.R. 2029; P.L. 114-113).

The public policy goal of the R&D tax credit is to encourage the private sector to increase R&D spending, which in turn serves as a catalyst to economic growth by increasing productivity through the utilization of new technology. The credit is justified in economic theory on the basis of market failure, which occurs because firms may under-invest in R&D when they tend to not recoup all associated costs of investing in R&D. Hence, less R&D occurs than would be economically optimal for the economy as a whole. The R&D tax credit is a method for lowering the cost of R&D to private firms and increasing the return on investment. By increasing the rate of return on investment, the R&D tax credit encourages more R&D than would occur if the credit did not exist.

R&D Expenditures in Pennsylvania and the United States

In 1995, according to the National Science Foundation (NSF), private industry in Pennsylvania spent \$5,331 million of its own funds on R&D expenditures. This was 4.0 percent of the total R&D expenditures by private industry in 1995 in the United States (\$132,103 million).

By 2015¹¹, the total amount of R&D expenditures in Pennsylvania by private industry had risen to \$10,354 million. This was an increase over the twenty year period of 94.2 percent. Over the same period, total R&D expenditures by private industry in the United States had risen by 161.4 percent to a level of \$345,317 million. For 2015, R&D expenditures in Pennsylvania by private industry were 3.0 percent of total R&D expenditures by private industry in the United States. Pennsylvania ranked 9th in the entire US in R&D spending by private industry in 2015.

The Pennsylvania R&D expenditures reported on the December 2016 tax credit applications for businesses receiving the R&D tax credit, which were based on research expenditures in 2015, totaled \$3,116.5

¹⁰ In some cases, the tax liability may have been self-assessed and settled.

¹¹ The most recent year for which estimated state-level R&D spending is available from the National Science Foundation is 2015.

million. This amount represented 33.4 percent of the total R&D performed in Pennsylvania by private industry as estimated by the NSF in 2015.

For comparison, the 1,126 R&D tax credit applicants in 2017 had total Pennsylvania R&D expenditures in 2016 of \$3,990.1 million. Not all R&D done by industry in Pennsylvania is performed by R&D tax credit applicants.

A study released in September 2011¹² by the R&D Credit Coalition, an organization of trade associations and companies dedicated to the permanent establishment of the federal R&D tax credit, examined the economic impact of the existing R&D tax credit and the potential impact of strengthening certain provisions of the R&D tax credit. The study found that the existing federal R&D tax credit “is estimated to have increased annual private research spending by \$10 billion in the short-term and by \$22 billion in the long-term.” It was noted that these annual figures compare very favorably with the \$6 to \$8 billion annual federal revenue loss attributed to the credit.

R&D Tax Credit Programs in Other States

A majority of states that have a corporate net income tax have sought to capture the potential benefits of encouraging R&D within their state by enacting an R&D tax credit. There are 42 states besides Pennsylvania that have provided for R&D tax credits in recent law, although, for a few of those states, the credits may have lapsed pending renewal. Most incorporate provisions of current or former R&D credits under the Internal Revenue Code.¹³

New Jersey’s R&D tax credit is like Pennsylvania’s in that it mirrors the federal R&D tax credit. However, New Jersey’s R&D tax credit statute does not cap the total amount of credit that can be awarded in a year. Like the Pennsylvania R&D tax credit prior to Act 46 of 2003, there is a 50 percent cap on the amount of credit that a taxpayer can apply against its tax year liability. In fiscal year 2017, \$80.0 million in R&D tax credit was claimed in New Jersey. Additionally, the New Jersey R&D tax credit statute allows certain biotech and emerging technology companies to sell unused R&D tax credits to any company paying the corporate net income tax.¹⁴ After Act 46 of 2003, all companies receiving the Pennsylvania R&D tax credit, regardless of their business sector, can sell or assign any unused R&D tax credits awarded beginning in December 2003.

Effectiveness of the Pennsylvania R&D Tax Credit Program

The time frame 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 in twenty years, 1997 through 2016. Although 1996 Pennsylvania research expenses were used to calculate the credit in 1997, the taxpayer’s R&D decisions could not have been affected by the credit prior to enactment of Act 7 in May 1997. Also, the changes made by Act 46 of 2003 altered several parameters of the program that could impact the effectiveness of the R&D tax credit. Some observations can be made about the effectiveness of the Pennsylvania R&D tax credit over the life of its existence.

The most recent economic recession did have an impact on R&D spending in Pennsylvania by private industry. Overall, R&D spending in Pennsylvania by industry fell by 13.2 percent in 2008 but recovered strongly in 2009 to grow by 13.7 percent according to NSF data.

Over the lifetime of the R&D tax credit program, 3,145 different taxpayers have been awarded some amount of the total \$708.0 million in tax credit awarded between 1997 and 2017. The number of taxpayers

¹² “The R&D Credit: An Effective Policy for Promoting Research Spending,” Prepared by Ernst and Young LLP for the R&D Credit Coalition, September 2011.

¹³ CCH Incorporated, Multistate Charts, ¶680-200 Credits for Investment/Research Activities.

¹⁴ Companies with 225 employees or less may sell unused R&D tax credits in New Jersey.

qualifying for the tax credit due to increased Pennsylvania research expenditures is still expanding, though there is some volatility from year to year regarding Pennsylvania research expenditure amounts.

Of the 1,126 taxpayers receiving the R&D tax credit in 2017, 182 were either Pennsylvania S corporations, LLCs, LLPs (limited liability partnerships) or individuals, and 944 were C corporations. The S corporations, LLCs, LLPs or individuals received \$4.3 million in R&D tax credit, while the C corporations received \$50.7 million.

The 1,126 taxpayers claiming the R&D tax credit in 2017 had total Pennsylvania research expenditures in taxable year 2016 of \$3,990.1 million. This was 17.2 percent increase compared to their total Pennsylvania research expenditures in taxable year 2015 of \$3,405.2 million.

While there is not a study measuring the effects of the R&D tax credit in Pennsylvania, a study released by the Milken Institute¹⁵ in December 2015 could be used to gauge the effectiveness of the R&D tax credit programs in a general sense. The study measures the impact of a proposal to double the existing rate of calculation in the California R&D tax credit from 15 percent to 30 percent of the increase in California R&D expenses over the base year. The report concluded that, in the tenth year after adopting the change, the \$700 million in additional R&D credits would stimulate between \$4.5 billion and \$6.8 billion in additional R&D activity in California, with a multiplier between 6.4 and 9.7. Further, the report found that that, in the tenth year after adopting the change, the gross domestic product (GDP) of California would be higher by between \$7.7 billion and \$10.5 billion. For comparison's sake, in 2014, California's GDP was \$2.31 trillion, so the additional growth of between \$7.7 billion and \$10.5 billion in ten years time would not be a significant share of the California economy. Even so, the report does conclude that while doubling the tax credit could be seen as an unfair tax giveaway, it concludes that the action is worth the cost. It is worth pointing out that Pennsylvania is a very different business environment than California, and it's unclear that the same conclusion can be drawn here.

Impact on Not Small Businesses

Out of the 1,126 taxpayers receiving the tax credit in 2017, 595 did not qualify as "small" businesses. Their total Pennsylvania research expenditures in taxable year 2016 were \$3,679.0 million, a 15.9 percent increase over their taxable year 2015 Pennsylvania research expenditures of \$3,173.5 million. They received \$44.0 million in R&D tax credit in December 2017.

Of the 595 "not small" businesses, 462 increased their Pennsylvania research expenditures in taxable year 2016 over taxable year 2015 by 22.7 percent in the aggregate. Their Pennsylvania research expenditures in taxable year 2016 rose to \$3,148.4 million from \$2,565.1 million in taxable year 2015. Only 133 of these businesses reduced their Pennsylvania research expenditures over the same period. Their Pennsylvania research expenditures in taxable year 2015 declined by 12.8 percent to \$530.6 million from \$608.4 million in taxable year 2015.

Impact on Small Businesses

Out of the 1,126 taxpayers receiving the tax credit in 2017, 531 were "small" businesses. Their total Pennsylvania research expenditures in taxable year 2016 were \$311.0 million, a 34.2 percent increase over their taxable year 2015 Pennsylvania research expenditures of \$231.7 million. The 531 "small" businesses received all of the \$11.0 million set aside for them in December 2017.

Of the 531 "small" businesses, 430 increased their Pennsylvania research expenditures in taxable year 2016 over taxable year 2015 by 50.9 percent in the aggregate. Their Pennsylvania research expenditures in taxable year 2016 rose to \$262.1 million from \$173.8 million in taxable year 2015. Only 101 "small" businesses reduced their Pennsylvania research expenditures over the same period. Their Pennsylvania research

¹⁵ "California's Innovation-Based Economy: Policies to Maintain and Enhance It," The Milken Institute, December 2015.

expenditures in taxable year 2016 declined by 15.6 percent to \$48.9 million from \$58.0 million in taxable year 2015.

Impact on First Time Claimants and New Companies

In 2017, 363 taxpayers were awarded the tax credit for the first time, claiming \$12.0 million in credit. Their Pennsylvania research expenditures totaled \$562.4 million for taxable year 2016. Conversely, 339 taxpayers that claimed the tax credit in 2016 did not receive any credit in 2017. These 339 taxpayers had Pennsylvania research expenditures in taxable year 2015 of \$1,204.1 million and claimed \$13.5 million in tax credit in 2016.

Of all the 1,126 taxpayers claiming the R&D tax credit in 2017, 662 were companies incorporated in Pennsylvania after the passage of Act 7 of 1997. It is possible that not all of these newly incorporated companies are start-ups, but may be newly formed subsidiaries of a parent corporation. These companies claimed \$36.9 million in tax credit in 2017 and had total Pennsylvania research expenditures in taxable year 2016 of \$1,903.3 million, a 26.6 percent increase from their Pennsylvania research expenditures in taxable year 2015 of \$1,503.4 million.

The 662 more recently incorporated companies had a total taxable year 2015 CSFT liability of \$1.9 million; 309 taxpayers had zero tax liability. The 662 companies had a total taxable year 2015 CNIT liability of \$35.1 million; 590 taxpayers had zero tax liability.

Impact on Established Companies

In order to provide more insight into the companies that regularly claim the R&D tax credit, this report will examine 201 taxpayers for which the Department has tracked Pennsylvania research expenditures for the last ten taxable years, from 2007 through 2016. This group of credit recipients has received \$163.7 million in total tax credit from 1997 through 2017, or 23.1 percent of the total \$708.0 million awarded over twenty one years. These 201 companies represent 68.8 percent of the number of companies that received the R&D tax credit in its first year, 1997. As a group, these taxpayers are a representative cross-section of the type of companies that have come to consistently claim the R&D tax credit.

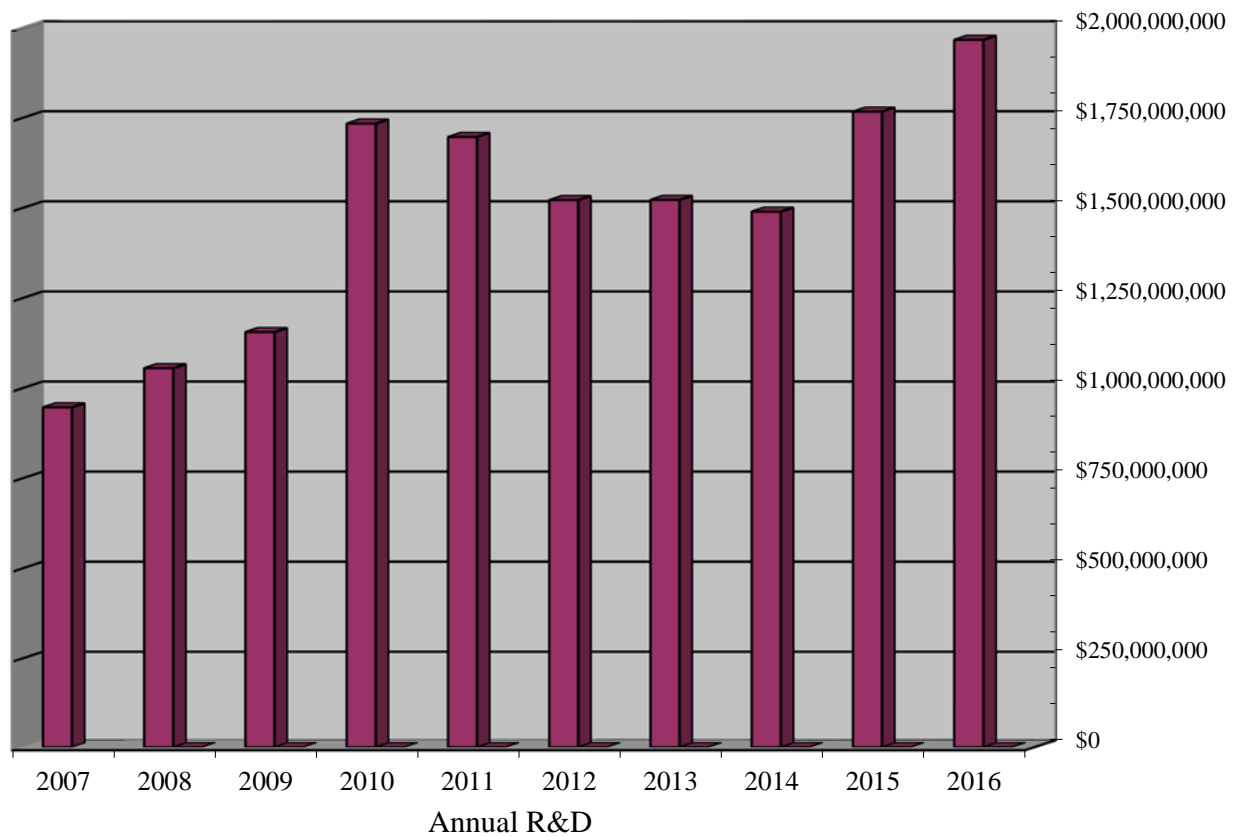
For these 201 taxpayers, their 2016 Pennsylvania R&D expenditures totaled \$1,967.8 million. This is an aggregate growth rate of 107.6 percent over their 2007 Pennsylvania R&D expenditures of \$947.9 million; between 2007 and 2016, the Pennsylvania R&D expenditures for these 201 taxpayers grew at a compound annual growth rate of 8.5 percent.

These 201 taxpayers were awarded \$18.5 million in R&D tax credit in 2017, 33.6 percent of the total amount of R&D tax credit awarded in December 2017. This credit amount was 0.9 percent of their total amount of Pennsylvania research expenditures in taxable year 2016. Overall, it is important to note that the R&D tax credit awarded remains relatively small when compared to the amount of money spent by the taxpayers to conduct their research activities in the Commonwealth.

The 201 established taxpayers had a total CSFT liability for taxable year 2015 of \$1.9 million and a total CNIT liability for taxable year 2015 of \$24.2 million.

Chart 1 graphically shows the Pennsylvania R&D expenditures for the 201 established taxpayers for the last ten taxable years, 2007 through 2016.

Chart 1. Pennsylvania R&D Expenditures by Year for 201 Established Companies With PA Expenditure Data Between 2007 and 2016



Small versus Not “Small”

Of the 201 taxpayers, 130 did not qualify as “small” businesses. They received \$151.2 million in tax credit over the twenty-one years of the program. Their 2016 Pennsylvania R&D expenditures totaled \$1,910.6 million. This is an aggregate growth rate of 103.6 percent over their 2007 Pennsylvania R&D expenditures of \$938.6 million; between 2007 and 2016, the Pennsylvania R&D expenditures for these 130 taxpayers grew at a compound annual growth rate of 8.2 percent.

Of the 201 taxpayers, there were 71 “small” businesses that received \$12.5 million in tax credit over the twenty-one years of the program. Their 2016 Pennsylvania R&D expenditures totaled \$57.2 million. This is an aggregate growth rate of 511.8 percent over their 2007 Pennsylvania R&D expenditures of \$9.4 million; between 2007 and 2016, the Pennsylvania R&D expenditures for these 71 taxpayers grew at a compound annual growth rate of 22.3 percent.

By Industry Type

Of the 201 taxpayers, 126 were classified as manufacturers. They received \$139.7 million in tax credit over the twenty-one years of the program. Their 2016 Pennsylvania R&D expenditures totaled \$1,738.3 million. This is an aggregate growth rate of 95.2 percent over their 2007 Pennsylvania R&D expenditures of \$890.4 million; between 2007 and 2016, the Pennsylvania R&D expenditures for these 126 taxpayers grew at a compound annual growth rate of 7.7 percent.

Of the 201 taxpayers, there were 75 non-manufacturing businesses that received \$24.0 million in tax credit over the twenty-one years of the program. Their 2016 Pennsylvania R&D expenditures totaled \$229.6 million. This is an aggregate growth rate of 298.8 percent over their 2007 Pennsylvania R&D expenditures of \$57.6

million; between 2007 and 2016, the Pennsylvania R&D expenditures for these 75 taxpayers grew at a compound annual growth rate of 16.6 percent.

Conclusions on the Impact of the R&D Tax Credit in Pennsylvania

When all 1,126 taxpayers receiving the R&D tax credit in 2017 were examined, “small” businesses increased their Pennsylvania research expenditures in taxable year 2016 more than “not small” businesses. However, the Pennsylvania research expenditures for “small” businesses were only 7.8 percent of the total Pennsylvania research expenditures in taxable year 2016 for all businesses receiving the tax credit. The overwhelming majority of Pennsylvania research expenditures continue to be made by taxpayers not classified as “small” businesses.

Of the 201 taxpayers examined for whom the Department has tracked Pennsylvania research expenditures for the last ten taxable years, for 2007 through 2016, manufacturers were the primary beneficiaries. Across all of the business types, the R&D tax credit remains a small percentage of Pennsylvania research expenditures. Hence, many other factors are likely to affect a company’s R&D spending decisions.

Report Conclusion

The R&D tax credit has existed in Pennsylvania for twenty-one years. Literature evaluating the effectiveness of the federal R&D tax credit and state R&D tax credits has shown mixed results regarding the effectiveness of the programs. Many factors other than the R&D tax credit influence a company’s R&D investment decisions. This report’s other observations can be summarized as:

- In December 2017, 1,126 companies were awarded credits, receiving the capped amount of \$55.0 million, or 50.9 percent of the amount requested.
- In the absence of a cap, \$108.1 million in tax credits would have been awarded.
- In 2016, the 1,126 companies awarded the R&D tax credit had total Pennsylvania research expenditures of \$3,990.1 million in 2016.
- Manufacturing firms, particularly pharmaceutical manufacturers, continue to be the primary beneficiaries of the R&D tax credit.
- “Small” businesses claimed all of the \$11.0 million in R&D tax credit set aside for them in December 2017.
- As of February 2018, a total of \$109.6 million in unused R&D tax credits have been sold or assigned from tax credits awarded from December 2003 through December 2016; \$102.3 million was paid for the unused credit, or 93.5 percent of the value of the unused credits.
- The R&D tax credit program has awarded a total of \$708.0 million in tax credit to 3,145 different taxpayers over the life of the program thus far. Without the caps on annual awards, a total of \$1,724.1 million in requested R&D tax credit would have been awarded. The effect of the annual cap on awards reduced the aggregate amount of R&D tax credits awarded to 41.1 percent of the requested amount.

APPENDIX A

**Table 1. Pennsylvania Research & Development Tax Credit Program
Taxpayers Receiving Credit in December 2017, 2016 and 2015
Sorted by 2017 Credit Awarded (Largest to Smallest)**

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Janssen Research & Development, LLC	\$4,768,953	\$0	\$6,234,725	\$6,234,725
Uber Technologies, Inc.	\$3,114,884	\$0	\$0	\$0
Intel Americas, Inc.	\$1,767,995	\$0	\$86,811	\$86,811
Trevena, Inc.	\$1,494,073	\$0	\$1,702,596	\$707,861
Sanofi Pasteur, Inc.	\$1,113,133	\$0	\$671,544	\$671,544
SEI Global Services, Inc.	\$984,133	\$0	\$1,459,361	\$0
Cisco Systems, Inc.	\$931,093	\$0	\$1,640,631	\$368,692
Bayer Healthcare, LLC	\$851,306	\$0	\$996,149	\$0
Spark Therapeutics, LLC	\$790,740	\$0	\$0	\$0
Vitae Pharmaceuticals, Inc.	\$726,780	\$0	\$349,773	\$8,389
Janssen Biotech, Inc.	\$720,954	\$0	\$1,009,157	\$1,009,157
Novartis Pharmaceuticals Corporation	\$693,503	\$0	\$608,743	\$608,743
Windtree Therapeutics, Inc. (f/k/a Discovery Laboratories, Inc.)	\$600,846	\$0	\$429,252	\$429,252
Comcast Holdings Corporation	\$593,525	\$0	\$0	\$0
Google, Inc.	\$586,111	\$0	\$4,223,206	\$4,223,206
SAP America, Inc.	\$560,908	\$0	\$956,408	\$413,946
Holtec Manufacturing Division	\$530,132	\$0	\$142,979	\$14,820
Genus Lifesciences, Inc. (f/k/a Lehigh Valley Technologies, Inc.)	\$518,342	\$0	\$129,502	\$129,502
Merck, Sharp & Dohme Corp.	\$506,455	\$0	\$0	\$0
The Hershey Company	\$444,954	\$0	\$1,128,855	\$1,128,855
Armstrong Flooring, Inc.	\$437,952	\$0	\$0	\$0
Marinus Pharmaceuticals, Inc.	\$405,746	\$0	\$403,184	\$403,184
Dataworks Analytic, Inc.	\$398,554	\$0	\$0	\$0
BGFP GoogleDatacenter, Inc.	\$384,589	\$0	\$245,933	\$245,933
Philly Shipyard, Inc.	\$378,630	\$0	\$17,265	\$17,265
Optionality Digital Data Center, Inc.	\$364,493	\$0	\$235,733	\$235,733
WHLRC Electronic Option and Future Trading	\$357,634	\$0	\$228,735	\$228,735
Greene, Tweed & Co., Inc.	\$321,342	\$0	\$198,844	\$6,432
Knoll, Inc.	\$306,369	\$0	\$71,521	\$71,521
Lutron Electronics Co., Inc.	\$306,095	\$0	\$442,705	\$0
Accu Measurement Testing, Inc.	\$279,466	\$0	\$399,983	\$399,983
Lasko Products, Inc.	\$265,974	\$0	\$142,169	\$53,014
Arconic, Inc. (f/k/a Alcoa, Inc.)	\$265,650	\$0	\$721,819	\$5,604
eDigital Data Center, Inc.	\$262,545	\$0	\$376,717	\$376,717
eMoney Advisor Holdings, LLC	\$261,004	\$0	\$0	\$0
Aramark	\$260,609	\$0	\$0	\$0
Honeywell International, Inc.	\$260,152	\$0	\$0	\$0
York International Corporation	\$247,916	\$0	\$179,748	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Cutanea Life Sciences, Inc.	\$243,835	\$0	\$310,377	\$1,157
Cognizant Technology Solutions US Corporation	\$233,749	\$0	\$0	\$0
John Bean Technologies Corporation	\$228,625	\$0	\$385,783	\$174,762
Covestro, LLC (f/k/a Bayer MaterialScience, LLC)	\$213,160	\$0	\$53,229	\$53,229
Hamill Manufacturing Company	\$198,632	\$0	\$0	\$0
JLG Industries, Inc.	\$196,667	\$0	\$1,207,600	\$255,441
The Vanguard Group, Inc.	\$190,477	\$0	\$1,126,042	\$1,126,042
Optionbotic Algorithm System, Inc.	\$184,205	\$0	\$117,651	\$117,651
CVS Pharmacy, Inc.	\$183,455	\$0	\$0	\$0
Global Technology Enterprise	\$181,614	\$0	\$210,315	\$94,429
Eastman Chemical Resins, Inc.	\$179,339	\$0	\$0	\$0
DT Davis Enterprises, Ltd. Hovortech International	\$168,432	\$0	\$284,022	\$163,927
American Financial & Trading Research, Inc.	\$167,134	\$0	\$73,616	\$73,616
Aerzen USA Corporation	\$166,478	\$0	\$26,928	\$26,928
Scientific Software International	\$165,789	\$0	\$105,790	\$0
Globus Medical, Inc.	\$161,591	\$0	\$426,669	\$426,669
Shire Human Genetic Therapies, Inc.	\$160,094	\$0	\$203,846	\$203,846
Phoenix Technical Solutions, Inc.	\$158,698	\$0	\$121,008	\$121,008
Infinera Corporation	\$155,197	\$0	\$0	\$0
Trumbull Corporation	\$152,142	\$0	\$0	\$0
QVC, Inc.	\$150,943	\$0	\$869,132	\$869,132
PJ Dick Incorporated	\$150,514	\$0	\$0	\$0
Datacap Systems, Inc.	\$150,234	\$0	\$235,403	\$79,380
Cherry Pick, Inc.	\$148,262	\$0	\$94,335	\$94,335
SwapForMore, Inc.	\$147,364	\$0	\$94,335	\$94,335
InterDigital Communications, Inc.	\$145,147	\$0	\$158,506	\$158,506
Victaulic Company	\$142,773	\$0	\$963,893	\$549,201
Cerner Corporation	\$140,983	\$0	\$0	\$0
Zoll Manufacturing Corporation	\$137,520	\$0	\$423,069	\$0
Teva Pharmaceuticals USA, Inc.	\$137,235	\$0	\$0	\$0
International Business Machines Corporation	\$134,203	\$0	\$1,470,555	\$1,470,555
Nuix North America, Inc.	\$129,781	\$0	\$0	\$0
CSLB Holdings, Inc.	\$129,122	\$0	\$568,385	\$568,385
Intertek USA, Inc.	\$127,466	\$0	\$208,586	\$319
Fujirebio Diagnostics, Inc.	\$126,542	\$0	\$84,091	\$0
Johnson Matthey, Inc.	\$125,467	\$0	\$454,014	\$0
Hennecke, Inc.	\$125,184	\$0	\$0	\$0
FARO Technologies, Inc.	\$122,764	\$0	\$274,910	\$3,905
Abella, Inc.	\$117,471	\$0	\$155,056	\$155,056
Communications Test Design, Inc.	\$117,246	\$0	\$0	\$0
Online Store Builder, Inc.	\$116,912	\$0	\$143,682	\$139,630
Process Combustion Corporation	\$116,463	\$0	\$193,606	\$1,097
G&W Laboratories, Inc.	\$116,185	\$0	\$0	\$0
Orange Innovation, Inc.	\$115,094	\$0	\$145,428	\$145,428

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Primetals Technologies USA, LLC	\$112,706	\$0	\$0	\$0
Recro Pharma, Inc.	\$112,565	\$0	\$214,701	\$25,282
Radian Guaranty, Inc.	\$112,184	\$0	\$308,336	\$0
Gelest, Inc.	\$112,162	\$0	\$88,597	\$9,050
Minitab, Inc.	\$112,147	\$0	\$49,942	\$0
American Computing, Inc.	\$110,720	\$0	\$110,919	\$107,082
Ainsworth Pet Nutrition, LLC	\$110,693	\$0	\$53,863	\$0
Wampole Miller, Inc.	\$109,444	\$0	\$65,919	\$65,919
BAE Systems Land & Armaments, Inc.	\$108,890	\$0	\$0	\$0
SPD Electrical Systems, Inc.	\$107,845	\$0	\$43,061	\$43,061
Airolution, LLC	\$107,699	\$0	\$153,013	\$153,013
Dun & Bradstreet, Inc.	\$107,662	\$0	\$56,808	\$56,808
Just Play, LLC	\$106,763	\$0	\$110,471	\$0
American Measurement and Quantitative Method, Inc.	\$106,102	\$0	\$127,210	\$123,536
Solvay USA, Inc.	\$104,272	\$0	\$372,171	\$7,517
Fairchild Semiconductor Corporation	\$102,702	\$0	\$243,035	\$44
Lehigh Cement Company, LLC	\$101,269	\$0	\$517,932	\$19,650
TMNA Serivces, LLC	\$100,763	\$0	\$102,375	\$0
Matrix PDM Engineering, Inc.	\$100,680	\$0	\$12,159	\$0
RB Distribution, Inc.	\$98,547	\$0	\$228,706	\$132,693
X-Cell Tool & Mold, Inc.	\$98,509	\$0	\$0	\$0
NuTec Tooling Systems, Inc.	\$98,216	\$0	\$96,229	\$80
Advertising Specialty Institute, Inc.	\$96,825	\$0	\$0	\$0
Thorley Industries, LLC	\$94,762	\$0	\$303,906	\$132,534
Listrak, Inc.	\$94,722	\$0	\$136,441	\$136,441
Aclaris Therapeutics, Inc.	\$93,554	\$0	\$37,841	\$1,525
JD Eckman, Inc.	\$93,339	\$0	\$79,783	\$0
Tri-City Marble, LLC	\$93,218	\$0	\$433	\$392
Avery Dennison Corporation	\$91,668	\$0	\$0	\$0
Analytical Graphics, Inc.	\$91,503	\$0	\$90,337	\$2,992
American High Frequency Trading, Inc.	\$90,196	\$0	\$125,460	\$125,460
Gettle Incorporated	\$89,640	\$0	\$0	\$0
iPipeline, Inc.	\$87,425	\$0	\$133,843	\$0
Fire Engine Red, Inc.	\$87,349	\$0	\$119,080	\$116,293
Javan Engineering, Inc.	\$86,878	\$0	\$0	\$0
Cognition Therapeutics, Inc.	\$86,388	\$0	\$495,505	\$495,505
Quest Diagnostics of Pennsylvania Incorporated	\$86,251	\$0	\$89,832	\$89,832
Streamlight, Inc.	\$85,166	\$0	\$121,938	\$0
AT&T Services, Inc.	\$85,160	\$0	\$142,872	\$0
Sidcar Interactive, Inc.	\$85,058	\$0	\$177,160	\$107,620
ANSYS, Inc.	\$84,044	\$0	\$146,261	\$146,261
Immunome, Inc.	\$83,561	\$0	\$34,291	\$0
Verizon Services Corp.	\$83,393	\$0	\$69,183	\$0
Jazz Pharmaceuticals, Inc.	\$83,373	\$0	\$334,863	\$334,863
Plastek Industries, Inc.	\$80,871	\$0	\$163,245	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Advanced Technology Services Group, LLC	\$79,793	\$0	\$200,155	\$200,155
Coating and Converting Technologies Corporation	\$79,633	\$0	\$0	\$0
Lindy Paving, Inc.	\$78,012	\$0	\$15,786	\$15,770
Nabriva Therapeutics US, Inc.	\$76,664	\$0	\$0	\$0
Intact Vascular, Inc.	\$76,650	\$0	\$305,191	\$148,642
Kinsely Construction, Inc.	\$76,119	\$0	\$0	\$0
Algorithm Expert	\$74,998	\$0	\$97,698	\$95,098
Interactive Liquid, LLC	\$74,993	\$0	\$0	\$0
Savana, Inc.	\$74,869	\$0	\$84,011	\$0
Seegrid Corporation	\$74,805	\$0	\$0	\$0
Mascaro Construction Group, LP	\$74,582	\$0	\$0	\$0
Velicept Therapeutics, Inc.	\$73,834	\$0	\$0	\$0
Bentley Systems, Inc.	\$73,650	\$0	\$0	\$0
Printfly Corporation	\$72,963	\$0	\$0	\$0
Net Health Systems, Inc.	\$71,738	\$0	\$0	\$0
Sweet Street Desserts, Inc.	\$71,664	\$0	\$41,951	\$41,951
Fibrocell Science, Inc.	\$70,302	\$0	\$77,744	\$0
Automated Financial Systems, Inc.	\$69,533	\$0	\$0	\$0
The DIRECTV Group, Inc.	\$69,402	\$0	\$0	\$0
Heraeus Incorporated	\$68,007	\$0	\$190,604	\$96,973
Camber Spine Technologies, LLC	\$67,660	\$0	\$121,589	\$65,778
Sciquest, Inc.	\$67,235	\$0	\$170,332	\$1,281
Context Therapeutics, LLC	\$66,723	\$0	\$0	\$0
Advanced Cooling Technologies, Inc.	\$66,047	\$0	\$301,946	\$141,945
Liquent, Inc.	\$65,812	\$0	\$0	\$0
AIP/BI Holdings, Inc.	\$65,644	\$0	\$0	\$0
PhytogenX, Inc.	\$65,630	\$0	\$43,613	\$0
Express Dynamics, LLC	\$65,180	\$0	\$131,982	\$131,982
Follett Corporation	\$64,913	\$0	\$53,298	\$53,298
Sigmapharm Laboratories, LLC	\$64,835	\$0	\$0	\$0
CMW Holdco, Inc. (d/b/a Cross MediaWorks)	\$64,152	\$0	\$83,937	\$0
Fres-Co System USA, Inc.	\$63,096	\$0	\$22,102	\$22,102
Arrow International, Inc.	\$62,578	\$0	\$80,501	\$51,544
Integra York PA, Inc.	\$62,115	\$0	\$0	\$0
StelKast, Inc.	\$60,753	\$0	\$7,095	\$0
Teletracking Technologies, Inc.	\$59,957	\$0	\$7,068	\$7,068
Arc Applications, Inc.	\$59,475	\$0	\$0	\$0
Maguire Products, Inc.	\$59,143	\$0	\$81,649	\$2,317
WebpageFX, Inc.	\$58,340	\$0	\$125,231	\$61,313
BTG International, Inc.	\$58,134	\$0	\$0	\$0
Pharmaceutical Manufacturing Research Services, Inc.	\$57,912	\$0	\$163,999	\$94,130
General Dynamics Mission Systems, Inc.	\$57,447	\$0	\$0	\$0
Manley Holdings, Inc.	\$57,178	\$0	\$150,068	\$150,068
Conewago Enterprises, Inc.	\$56,657	\$0	\$7,414	\$0
Oncocotics, Inc.	\$56,411	\$0	\$29,601	\$29,601

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Innovu, LLC	\$56,065	\$0	\$0	\$0
Universal Electric Corporation	\$55,883	\$0	\$67,686	\$9,107
Dietz & Watson, Inc.	\$55,333	\$0	\$0	\$0
International Management Consultants, Inc.	\$55,190	\$0	\$0	\$0
NCC Automated Systems, Inc.	\$54,723	\$0	\$262,906	\$177,828
Dura-Bond Industries	\$54,347	\$0	\$0	\$0
Clutch Holdings, LLC	\$54,005	\$0	\$134,139	\$65,419
Conduit Technology, LLC	\$53,466	\$0	\$95,168	\$50,333
US Pipeline, Inc.	\$52,594	\$0	\$0	\$0
Mathway, LLC	\$52,333	\$0	\$0	\$0
Oberg Industries, Inc. and QSS	\$52,268	\$0	\$198,590	\$198,590
Bohler Engineering PA, LLC	\$52,096	\$0	\$0	\$0
Tonic Design Co.	\$52,018	\$0	\$124,465	\$66,252
3GTMS, Inc.	\$51,340	\$0	\$154,330	\$98,055
Dental Imaging Technologies Corp.	\$50,543	\$0	\$0	\$0
CloudMine, Inc.	\$50,197	\$0	\$0	\$0
Pentec Health, Inc.	\$49,020	\$0	\$0	\$0
Confluence Technologies, Inc.	\$48,837	\$0	\$0	\$0
Unilog Content Solutions, LLC	\$48,411	\$0	\$0	\$0
PPG Architectural Finishes, Inc.	\$48,393	\$0	\$0	\$0
Rondo-Pak, LLC	\$48,077	\$0	\$0	\$0
Management Science Associates, Inc.	\$47,841	\$0	\$0	\$0
Industrial Scientific Corporation	\$47,810	\$0	\$342,334	\$70,014
Advanced Plasma Solutions, Inc.	\$47,770	\$0	\$0	\$0
Therm-Omega-Tech, Inc.	\$47,376	\$0	\$0	\$0
Holtec International Power Division, Inc.	\$47,159	\$0	\$79,009	\$0
AcademyOne, Inc.	\$47,114	\$0	\$32,984	\$139
Larson Texts, Inc. (d/b/a Big Ideas Learning)	\$46,996	\$0	\$52,644	\$0
Lycera Corp.	\$46,692	\$0	\$0	\$0
Matthews International Corporation	\$46,618	\$0	\$11,251	\$0
HindlePower, Inc.	\$46,137	\$0	\$44,250	\$16,182
AFP Advanced Food Products, LLC	\$45,827	\$0	\$46,073	\$17,056
Cerner Health Services, Inc.	\$45,827	\$0	\$0	\$0
Wilson Legal Solutions, Inc.	\$45,741	\$0	\$29,064	\$0
IB Abel, Inc.	\$45,325	\$0	\$0	\$0
Xyntek Incorporated	\$44,940	\$0	\$0	\$0
VEKA, Inc.	\$44,259	\$0	\$75,352	\$0
Golden Proportions Marketing, Inc.	\$44,148	\$0	\$0	\$0
GE Healthcare IITS USA Corp.	\$43,118	\$0	\$47,305	\$47,305
Highwood USA, LLC	\$42,882	\$0	\$0	\$0
Ashley Holdings, Inc.	\$42,717	\$0	\$53,015	\$38,700
Pulse Technologies, Inc.	\$42,456	\$0	\$0	\$0
Molecular Devices, LLC	\$41,560	\$0	\$0	\$0
ADCT America, Inc.	\$41,465	\$0	\$0	\$0
SofterWare, Inc.	\$41,369	\$0	\$113,722	\$113,722
NVIDIA Corporation	\$41,361	\$0	\$16,540	\$81
Seco/Warwick Corporation	\$41,154	\$0	\$3,082	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Deacom, Inc.	\$40,695	\$0	\$0	\$0
Quest Diagnostics Clinical Laboratories	\$40,642	\$0	\$45,297	\$0
Inolex, Inc.	\$40,601	\$0	\$58,687	\$0
Momentum Dynamics Corporation, Inc.	\$40,370	\$0	\$57,097	\$57,097
Nutrisystem, Inc.	\$40,265	\$0	\$13,714	\$0
Lucas Systems, Inc.	\$40,227	\$0	\$22,569	\$6,020
Michelman Steel Enterprises, LLC	\$40,089	\$0	\$0	\$0
North American Hoganas Company (f/k/a North American Hoganas, Inc.)	\$40,071	\$0	\$128,024	\$68,931
AutoSoft, Inc.	\$39,889	\$0	\$8,909	\$0
Interstate Resources, Inc.	\$39,597	\$0	\$0	\$0
Aetna Life Insurance Company	\$39,026	\$0	\$87,702	\$0
Branding Brand, Inc.	\$38,995	\$0	\$115,017	\$57,988
Avere Systems, Inc.	\$38,930	\$0	\$150,309	\$23
Golden Brothers, Inc. (t/a Golden Technologies)	\$38,734	\$0	\$31,547	\$31,547
BartonPartners Architects Planners	\$38,357	\$0	\$61,330	\$15,756
Melior Discovery, Inc.	\$37,973	\$0	\$126,025	\$62,482
VECTR Research, LLC	\$37,521	\$0	\$12,923	\$0
National Magnetics Group, Inc.	\$37,486	\$0	\$70,397	\$39,017
Almac Clinical Technologies, LLC	\$37,445	\$0	\$233,773	\$4,503
Anholt Technologies, Inc.	\$37,284	\$0	\$82,301	\$53,420
IMG Midstream, LLC	\$37,087	\$0	\$22,460	\$0
Cellco Partnership	\$36,910	\$0	\$76,270	\$0
Lobar Associates, Inc.	\$36,867	\$0	\$29,127	\$22,127
Scrub Daddy, Inc.	\$36,566	\$0	\$0	\$0
TRS Ceramics, Inc.	\$36,511	\$0	\$0	\$0
Vesuvius USA Corporation	\$36,254	\$0	\$0	\$0
Andritz, Inc.	\$36,134	\$0	\$26,557	\$26,557
Pinnacle 21, LLC	\$35,772	\$0	\$0	\$0
Global Data Management Systems, LLC	\$35,673	\$0	\$105,266	\$47,416
Estenda Solutions, Inc.	\$35,637	\$0	\$0	\$0
Advent Design Corporation	\$34,974	\$0	\$0	\$0
Dataforma Incorporated	\$34,938	\$0	\$95,303	\$95,303
Biomeme, Inc.	\$34,367	\$0	\$49,407	\$0
Refrigeration Design & Service, Inc.	\$34,357	\$0	\$8,977	\$8,977
Leaf Pharmaceuticals, LLC	\$34,264	\$0	\$25,418	\$0
Vertex, Inc.	\$33,907	\$0	\$0	\$0
Web Talent, LLC	\$33,822	\$0	\$33,684	\$0
Siemens PLM Software, Inc.	\$33,665	\$0	\$42,116	\$0
Amphenol Thermometrics, Inc.	\$33,375	\$0	\$53,709	\$0
PhaseBio Pharmaceuticals, Inc.	\$33,168	\$0	\$13,903	\$0
Nalco Company, LLC	\$33,117	\$0	\$0	\$0
Leidos, Inc.	\$33,008	\$0	\$41,081	\$17,490
Ralexar Therapeutics, Inc.	\$32,989	\$0	\$191,889	\$0
Magnesita Refractories Company	\$32,875	\$0	\$123,877	\$123,877
Axalta Coating Systems, LLC	\$32,838	\$0	\$39,948	\$0

Taxpayer Name	2017 Credit Awarded	2017 Credit Utilized¹	2016 & 2015 Credit Awarded	2016 & 2015 Credit Utilized¹
Techniserv, Inc.	\$32,806	\$0	\$118,238	\$118,238
Environmental Construction Services, Inc.	\$32,780	\$0	\$0	\$0
Il VI Incorporated	\$32,665	\$0	\$240,233	\$1,451
Reynolds & Reynolds Electronics, Inc.	\$32,608	\$0	\$31,911	\$31,911
East Penn Manufacturing Company	\$32,382	\$0	\$47,289	\$0
Schell Games, LLC	\$32,028	\$0	\$173,429	\$173,429
CytoVas, LLC	\$31,844	\$0	\$71,442	\$71,442
Eaglet US, Inc.	\$31,725	\$0	\$0	\$0
Pass and Seymour, Inc.	\$31,702	\$0	\$0	\$0
JWF Holdings, Inc.	\$31,676	\$0	\$47,628	\$0
KW, Inc.	\$31,615	\$0	\$53,198	\$52,068
Crescent Industries, Inc.	\$31,309	\$0	\$0	\$0
Suburban Tool & Die Co., Inc.	\$31,268	\$0	\$575	\$575
Turn 14 Distribution, Inc.	\$31,102	\$0	\$0	\$0
Wagman, Inc.	\$31,091	\$0	\$0	\$0
Professional Staffing Solutions, LLC	\$31,001	\$0	\$28,103	\$28,103
Identified Technologies Corporation	\$30,275	\$0	\$29,370	\$0
Qortek, Inc.	\$30,011	\$0	\$40,137	\$40,137
AeroTech, Inc.	\$29,990	\$0	\$75,198	\$19,277
Stitch, Inc. (f/k/a RJ Metrics, Inc.)	\$29,939	\$0	\$134,522	\$83,150
Dossier Systems, Inc.	\$29,792	\$0	\$13,787	\$13,787
Lamtec Corporation	\$29,740	\$0	\$92,425	\$47,772
Applied Systems Associates, Inc.	\$29,524	\$0	\$135,824	\$87,790
Power Conversion Technologies, Inc.	\$29,518	\$0	\$30,808	\$25,425
John R. Bromiley Company, Inc.	\$29,513	\$0	\$23,709	\$23,709
Infiana USA, Inc.	\$29,412	\$0	\$0	\$0
Quintiles, Inc.	\$29,393	\$0	\$0	\$0
Penn State Industries, Inc.	\$29,328	\$0	\$49,520	\$0
M.H. Eby, Inc.	\$29,032	\$0	\$11,396	\$11,396
MicroMold Co., Inc.	\$29,002	\$0	\$36,638	\$28,612
Havpak, Inc.	\$28,951	\$0	\$0	\$0
Sarris Candies, Inc.	\$28,937	\$0	\$68,132	\$31,365
KCF Technologies, Inc.	\$28,375	\$0	\$27,981	\$27,981
Langan Engineering Environmental Surveying and Landscape Architecture - DPC	\$28,315	\$0	\$0	\$0
DVSPORT, Inc.	\$28,235	\$0	\$0	\$0
Smithwise, Inc.	\$28,126	\$0	\$22,071	\$0
Corle Building Systems, Inc.	\$27,624	\$0	\$72,957	\$358
JB Kintner Sons	\$27,470	\$0	\$0	\$0
Complexa, Inc.	\$27,442	\$0	\$147,283	\$71,966
Legal Sifter, Inc.	\$27,417	\$0	\$0	\$0
Chelsea Building Products, Inc.	\$27,405	\$0	\$25,234	\$25,234
Neutronics, Inc.	\$27,390	\$0	\$54,247	\$0
Learning Sciences International, LLC	\$27,301	\$0	\$10,603	\$10,603
USA Technologies, Inc.	\$27,286	\$0	\$0	\$0
Tyndale Enterprises, Inc.	\$27,153	\$0	\$35,030	\$5,118
STP Investment Services, LLC	\$27,123	\$0	\$22,140	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Abbott Acquisition Company, LLC	\$27,003	\$0	\$0	\$0
Mine Vision Systems, Inc.	\$26,994	\$0	\$0	\$0
3FX, Inc.	\$26,954	\$0	\$0	\$0
Micromechatronics, Inc.	\$26,865	\$0	\$29,178	\$29,178
NewLink Genetics Corporation	\$26,749	\$0	\$111,774	\$2,319
EduLink, Inc.	\$26,738	\$0	\$5,407	\$0
AssetWorks, Inc.	\$26,681	\$0	\$41,339	\$0
Amuneal Manufacturing Corp.	\$26,602	\$0	\$140,010	\$23,179
Herbert Rowland & Grubic, Inc.	\$26,561	\$0	\$0	\$0
Accudyn Products, Inc.	\$26,535	\$0	\$31,575	\$0
International Chemical Company	\$26,522	\$0	\$0	\$0
DF Stauffer Biscuit Co., Inc.	\$26,158	\$0	\$23,354	\$23,354
Cargas Systems, Inc.	\$26,066	\$0	\$0	\$0
Controlled Molding, Inc.	\$25,769	\$0	\$26,490	\$0
Forge Life Sciences, LLC	\$25,740	\$0	\$26,329	\$26,329
LAN Connect, Inc.	\$25,724	\$0	\$0	\$0
Kwantera Incorporated	\$25,608	\$0	\$0	\$0
Rockland, Inc.	\$25,490	\$0	\$32,774	\$0
Finisar Corporation	\$25,438	\$0	\$173,631	\$13,550
First Insight, Inc.	\$25,336	\$0	\$236,420	\$236,420
GENEX Holdings, Inc.	\$25,144	\$0	\$0	\$0
Development Dimensions International, Inc.	\$25,060	\$0	\$0	\$0
Millenium Manufacturing, Inc.	\$24,997	\$0	\$0	\$0
Carnegie Robotics, LLC	\$24,755	\$0	\$0	\$0
EnerSys Delaware, Inc.	\$24,737	\$0	\$49,770	\$19,443
Berk Wiper International, LLC	\$24,606	\$0	\$0	\$0
St. Marys Tool and Die, Inc.	\$24,540	\$0	\$44,331	\$35,479
Acutec Precision Machining, Inc.	\$24,456	\$0	\$31,583	\$0
Industrial Resolution, LLC	\$23,875	\$0	\$0	\$0
PrimePay, LLC	\$23,866	\$0	\$45,860	\$10,769
Forms and Surfaces, Inc.	\$23,857	\$0	\$31,523	\$10,342
American International Forwarding, Inc.	\$23,837	\$0	\$46,252	\$20,699
Renick Brothers Construction Company	\$23,661	\$0	\$0	\$0
Predictive Solutions Corp.	\$23,429	\$0	\$38,785	\$8,045
Genesis Machinery Products, Inc.	\$23,269	\$0	\$74,753	\$0
Livegenic, Inc.	\$23,196	\$0	\$5,865	\$0
Forever, Inc.	\$23,187	\$0	\$0	\$0
US Specialty Formulations, LLC	\$23,166	\$0	\$10,569	\$0
Durawood Products, Inc.	\$22,997	\$0	\$51,839	\$12,161
Premier Dental Products Company	\$22,975	\$0	\$56,725	\$56,725
Crayola, LLC	\$22,964	\$0	\$72,255	\$8,354
Flexsys America, LP	\$22,909	\$0	\$0	\$0
Heeter Printing Company	\$22,885	\$0	\$41,223	\$0
Stoner, Inc.	\$22,880	\$0	\$76,708	\$30,106
VelocityNet Communications, Inc.	\$22,623	\$0	\$0	\$0
Five Eleven Pharma, Inc.	\$22,562	\$0	\$19,092	\$0
New Era Technology, Inc.	\$22,539	\$0	\$0	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Krando Metal Products, Inc.	\$22,531	\$0	\$0	\$0
Team Ten, LLC (American Eagle Paper Mills)	\$22,451	\$0	\$55,660	\$55,660
Galera Therapeutics, Inc.	\$22,392	\$0	\$40,626	\$2,447
Interstacks, Inc.	\$22,328	\$0	\$0	\$0
Track5Media, LLC	\$22,191	\$0	\$0	\$0
Comprehensive Fire Technologies	\$22,174	\$0	\$0	\$0
LIA Diagnostics, Inc.	\$22,168	\$0	\$0	\$0
Crosscurrent Business Analytics, LLC	\$22,142	\$0	\$0	\$0
BioMagnetic Solutions, LLC	\$22,089	\$0	\$25,535	\$25,535
IT Assist, LLC (d/b/a TeamLogic IT)	\$22,087	\$0	\$26,168	\$26,168
Bostock Company, Inc.	\$22,003	\$0	\$7,158	\$0
Matrix Operations, LLC (d/b/a Matrix Solutions)	\$21,877	\$0	\$5,305	\$0
IMET Corporation	\$21,858	\$0	\$16,856	\$0
The Dow Chemical Company	\$21,847	\$0	\$99,548	\$4,879
Guru Technologies, Inc.	\$21,803	\$0	\$19,970	\$0
Stantec Consulting Services, Inc.	\$21,567	\$0	\$21,473	\$21,473
CEWA Technologies, Inc.	\$21,546	\$0	\$82,887	\$82,887
Richter Precision, Inc.	\$21,531	\$0	\$79,622	\$34,626
AT&T Mobility Services, LLC	\$21,446	\$0	\$0	\$0
Audia International, Inc.	\$21,442	\$0	\$0	\$0
Machined Metals Manufacturing Group, Inc.	\$21,442	\$0	\$0	\$0
Gamry Instruments, Inc.	\$21,184	\$0	\$87,100	\$85,840
Havaco Technologies Incorporated	\$21,171	\$0	\$2,040	\$0
BioSpectra, Inc.	\$21,161	\$0	\$114,660	\$2,432
Philadelphia D&M, Inc.	\$21,084	\$0	\$0	\$0
Luxtech, LLC	\$21,000	\$0	\$30,367	\$11,826
Trigon, Inc.	\$20,967	\$0	\$49,066	\$21,807
Berry Plastics SP, Inc.	\$20,919	\$0	\$23,345	\$0
Inverse Paradox, LLC	\$20,797	\$0	\$0	\$0
WizeHive, Inc.	\$20,594	\$0	\$26,380	\$26,380
Pride Mobility Products Corporation	\$20,433	\$0	\$0	\$0
Amplifier Research Corp.	\$20,332	\$0	\$76,282	\$2,083
ChromaTan, Inc.	\$20,298	\$0	\$9,533	\$9,533
Akustica, Inc.	\$20,183	\$0	\$68,808	\$56,939
Minteq International, Inc.	\$20,103	\$0	\$38,934	\$38,934
Ecotech Marine, LLC	\$20,080	\$0	\$95,205	\$44,811
Competition Tire East, Inc.	\$20,080	\$0	\$67,562	\$70
Corry Manufacturing Company	\$19,988	\$0	\$32,634	\$0
Telefactor Robotics, LLC	\$19,917	\$0	\$0	\$0
Clark Associates, Inc.	\$19,677	\$0	\$21,049	\$0
VaxForm, LLC	\$19,624	\$0	\$23,271	\$0
Near-Miss Management, LLC	\$19,592	\$0	\$40,770	\$40,770
NoWait, Inc.	\$19,511	\$0	\$191,744	\$599
Trice Medical, Inc.	\$19,496	\$0	\$0	\$0
Keystone Compliance, LLC	\$19,434	\$0	\$73,087	\$34,085
Ocugen, Inc.	\$19,430	\$0	\$0	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
MePush, Inc.	\$19,262	\$0	\$0	\$0
PhotoSonix Medical, Inc.	\$19,214	\$0	\$0	\$0
Progeny Systems Corporation	\$19,167	\$0	\$37,782	\$2,286
Astellas Pharma Global Development, Inc.	\$19,037	\$0	\$0	\$0
Webber Smith Associates, Inc.	\$18,928	\$0	\$0	\$0
Phoenix Contact Development Manufacturing, Inc.	\$18,866	\$0	\$164,661	\$144,770
Herkules USA Corporation	\$18,812	\$0	\$0	\$0
Vastex International, Inc.	\$18,790	\$0	\$18,906	\$0
Keystone Machinery Corporation	\$18,747	\$0	\$66,241	\$41,148
Cook Myosite, Inc.	\$18,729	\$0	\$0	\$0
InnaVenture, LLC	\$18,679	\$0	\$0	\$0
Laboratory Testing, Inc.	\$18,551	\$0	\$30,854	\$13,723
Diamond Kinetics, Inc.	\$18,549	\$0	\$46,019	\$46,019
Skill Survey, Inc.	\$18,440	\$0	\$0	\$0
VolPstreet, Inc.	\$18,379	\$0	\$54,511	\$38,102
Adobe Systems Incorporated	\$18,265	\$0	\$50,111	\$29,220
Coinco, Inc.	\$18,260	\$0	\$0	\$0
Melior Pharmaceuticals I, Inc.	\$18,157	\$0	\$11,682	\$2,302
J.R. Peters, Inc.	\$18,095	\$0	\$33,183	\$25
WFE Holdings, LLC	\$18,038	\$0	\$71,828	\$35,249
Chant Engineering Co., Inc.	\$17,961	\$0	\$111,891	\$23,172
SSM Industries, Inc.	\$17,838	\$0	\$0	\$0
Graybill Machines, Inc.	\$17,801	\$0	\$0	\$0
Ultragentyx Pharmaceuticals, Inc.	\$17,789	\$0	\$0	\$0
Polysciences, Inc.	\$17,732	\$0	\$52,499	\$22,096
Readeeming Beauty, Inc. (d/b/a Beautyblender)	\$17,698	\$0	\$17,494	\$0
Hireku, Inc.	\$17,685	\$0	\$254,053	\$159,436
Neuro Kinetics, Inc.	\$17,635	\$0	\$72,066	\$42,964
Vocollect, Inc.	\$17,583	\$0	\$0	\$0
Oshkosh Corporation	\$17,564	\$0	\$0	\$0
Primbio Research Institute, LLC	\$17,562	\$0	\$19,095	\$19,095
Packaging Progressions, Inc.	\$17,557	\$0	\$64,884	\$64,884
Advanced Composite Products, Inc.	\$17,487	\$0	\$0	\$0
V T Graphics, Inc.	\$17,376	\$0	\$37,827	\$19,197
Global Metal Powders, LLC	\$17,289	\$0	\$41,048	\$41,048
Gecko Robotics, LLC	\$17,282	\$0	\$2,174	\$0
Watson Standard Company	\$17,097	\$0	\$0	\$0
Superior Plastic Products, Inc.	\$16,979	\$0	\$26,376	\$26,372
R.M. Palmer Company	\$16,911	\$0	\$8,595	\$0
Videon Central, Inc.	\$16,910	\$0	\$63,757	\$6,703
Wm J. Donovan Co.	\$16,898	\$0	\$0	\$0
FCI USA, LLC	\$16,867	\$0	\$0	\$0
NewAge Industries, Inc.	\$16,689	\$0	\$38,848	\$38,848
Parker White Metal Company	\$16,607	\$0	\$1,917	\$170
VeryApt, Inc.	\$16,575	\$0	\$14,159	\$14,159

Taxpayer Name	2017 Credit Awarded	2017 Credit Utilized¹	2016 & 2015 Credit Awarded	2016 & 2015 Credit Utilized¹
Savage Visual Effects, LLC	\$16,561	\$0	\$26,211	\$10,460
Meco Constructors, Inc.	\$16,555	\$0	\$0	\$0
Erie Custom Computer Applications	\$16,422	\$0	\$10,174	\$0
Harbor Business Compliance Corp.	\$16,417	\$0	\$7,843	\$0
SJ Consulting Group, Inc.	\$16,384	\$0	\$15,514	\$0
Metaphase Technologies, Inc.	\$16,280	\$0	\$81,945	\$16,935
John Rock, Inc.	\$16,235	\$0	\$0	\$0
ZSX Medical, LLC	\$16,113	\$0	\$81,753	\$78,078
ThreeRivers 3D, Inc.	\$16,049	\$0	\$40,792	\$246
Lubbering Corp.	\$16,044	\$0	\$0	\$0
Jeannette Shade and Novelty Company (d/b/a JSG Oceana)	\$15,924	\$0	\$8,602	\$8,602
Custom Laminating Corporation	\$15,820	\$0	\$43,338	\$14,285
Dagostino Electronic Services, Inc.	\$15,775	\$0	\$0	\$0
Gap Holding Company, Inc.	\$15,774	\$0	\$11,641	\$0
Weis Markets, Inc.	\$15,756	\$0	\$0	\$0
Timothy Haahs & Associates, Inc.	\$15,706	\$0	\$0	\$0
Sharp Edge Labs, Inc.	\$15,654	\$0	\$26,684	\$26,684
Edgemate, Inc.	\$15,575	\$0	\$11,055	\$11,055
1DA (1DigitalAgency)	\$15,563	\$0	\$14,102	\$11,123
Thrive Commerce, LLC	\$15,503	\$0	\$11,093	\$10,491
The Lackner Group, Inc.	\$15,473	\$0	\$34,359	\$20,128
Kemper Equipment, Inc.	\$15,462	\$0	\$0	\$0
The ExOne Company	\$15,445	\$0	\$218,973	\$218,973
SmartyPal, Inc.	\$15,375	\$0	\$9,264	\$0
Conestoga Wood Specialties Corporation	\$15,075	\$0	\$0	\$0
Advanced Research Systems, Inc.	\$15,054	\$0	\$346,663	\$346,663
Tech Molded Plastics, Inc.	\$15,001	\$0	\$100,229	\$40,385
Universal Industrial Gases, Inc.	\$14,993	\$0	\$13,550	\$13,550
Pyrotek Incorporated	\$14,951	\$0	\$0	\$0
Treatspace, Inc.	\$14,915	\$0	\$8,739	\$0
Accusource, LLC	\$14,894	\$0	\$10,702	\$0
JUDCO Management, Inc.	\$14,885	\$0	\$57,475	\$0
Cybersonics, Inc.	\$14,819	\$0	\$0	\$0
GolbeHealer, Inc.	\$14,797	\$0	\$0	\$0
E City Interactive, Inc.	\$14,592	\$0	\$0	\$0
Silvertip, Inc.	\$14,479	\$0	\$0	\$0
The Rainmaker Group Ventures, LLC	\$14,454	\$0	\$0	\$0
Ateeco, Inc.	\$14,449	\$0	\$7,132	\$0
Novelty Manufacturing Co.	\$14,432	\$0	\$0	\$0
Sea Pharmaceuticals, LLC	\$14,392	\$0	\$0	\$0
PTR Group, LP	\$14,358	\$0	\$1,363	\$705
Bosch Rexroth Corporation	\$14,355	\$0	\$4,501	\$53
Rajant Corporation	\$14,304	\$0	\$167,388	\$1,708
Reclamere, Inc.	\$14,260	\$0	\$29,441	\$29,356
Saturn Design Group, LLC (d/b/a ADDREXX)	\$14,242	\$0	\$18,645	\$18,645
American Millwork and Cabinetry, Inc.	\$14,227	\$0	\$0	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Powerex, Inc.	\$14,224	\$0	\$0	\$0
Verizon Business Network Services, Inc.	\$14,203	\$0	\$44,986	\$41,753
Quality Tool and Die, Inc.	\$14,197	\$0	\$0	\$0
Grudi Associates, Inc.	\$14,196	\$0	\$9,709	\$0
O3 World, LLC	\$14,194	\$0	\$24,253	\$22,936
Epic Web Studios	\$14,125	\$0	\$19,610	\$19,610
Penn-Air Hydraulics Corp.	\$14,105	\$0	\$0	\$0
Snowdon International Limited Co. Cafferata and Co.	\$14,102	\$0	\$31,425	\$14,430
A H Sportswear Co., Inc.	\$14,086	\$0	\$40,349	\$0
Penn Color, Inc.	\$14,074	\$0	\$23,987	\$17,566
Printmail Solutions, Inc.	\$14,037	\$0	\$48,741	\$23,088
Say Plastics, Inc.	\$14,010	\$0	\$0	\$0
Materion Brush, Inc.	\$13,990	\$0	\$11,094	\$198
Ingmar Medical Ltd.	\$13,939	\$0	\$0	\$0
RLC Electronic Systems, Inc.	\$13,905	\$0	\$14,899	\$0
Impact Applications, Inc.	\$13,899	\$0	\$7,605	\$7,605
Orthos Enterprises, Inc.	\$13,818	\$0	\$20,337	\$6,470
Airviz, Inc.	\$13,811	\$0	\$0	\$0
Jarus Technologies Incorporated	\$13,735	\$0	\$19,027	\$2,591
Barry Isett & Associates, Inc.	\$13,623	\$0	\$0	\$0
Laminators Incorporated	\$13,548	\$0	\$10,272	\$4,284
Lee Industries, Inc.	\$13,476	\$0	\$0	\$0
Essent Corporation	\$13,466	\$0	\$0	\$0
Ingredion Incorporated	\$13,459	\$0	\$0	\$0
Tech Tube, Inc.	\$13,418	\$0	\$0	\$0
Access Security Corp.	\$13,369	\$0	\$0	\$0
RDC Design Group, LLC	\$13,367	\$0	\$28,323	\$28,323
Architectural Precast Innovations, Inc.	\$13,365	\$0	\$0	\$0
Artskills, Inc.	\$13,335	\$0	\$40,293	\$1,304
Blue Ridge Pressure Castings, Inc.	\$13,306	\$0	\$10,129	\$3,197
J.B. Poindexter Co., Inc.	\$13,290	\$0	\$45,571	\$0
MiMedx Group, Inc.	\$13,289	\$0	\$0	\$0
Hanover Iron Works, Inc.	\$13,169	\$0	\$0	\$0
Honeywell Safety Products USA, Inc. (f/k/a Sperian Protection, Inc.)	\$13,165	\$0	\$0	\$0
Crystalplex Corporation	\$13,164	\$0	\$14,510	\$4,129
CIW Enterprises, Inc.	\$13,118	\$0	\$0	\$0
KickUp, Inc.	\$13,032	\$0	\$0	\$0
Drug Plastics & Glass Co., Inc.	\$13,022	\$0	\$0	\$0
Richmond Engineering Works, LLC	\$12,936	\$0	\$0	\$0
Houwzer, LLC	\$12,906	\$0	\$5,245	\$0
WEI Holding, Inc.	\$12,852	\$0	\$20,586	\$77
Corry Micronics, Inc.	\$12,819	\$0	\$0	\$0
Thompsons Candle Co.	\$12,810	\$0	\$21,687	\$6,093
Reading Alloys, Inc.	\$12,810	\$0	\$0	\$0
United Parcel Service, Inc.	\$12,779	\$0	\$0	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Hendrick Manufacturing Co.	\$12,731	\$0	\$24,366	\$0
Meeker Holding Company, Inc.	\$12,663	\$0	\$9,742	\$0
Stein Seal Company	\$12,650	\$0	\$17,830	\$182
SpiralGen, Inc.	\$12,620	\$0	\$51,757	\$51,757
EnergyCAP, Inc.	\$12,601	\$0	\$0	\$0
Straight Arrow Products, Inc.	\$12,546	\$0	\$42,918	\$42,918
Project Execution Network, LLC	\$12,520	\$0	\$18,425	\$8,337
Delta Information Systems, Inc.	\$12,431	\$0	\$16,540	\$0
TIW Technology, Inc.	\$12,323	\$0	\$8,632	\$8,632
Shaw Industries, Inc.	\$12,319	\$0	\$582	\$582
Penn Engineering and Manufacturing Corp.	\$12,310	\$0	\$15,289	\$0
Tracey Mechanical, Inc.	\$12,267	\$0	\$0	\$0
Phonetics, Inc. (d/b/a Sensaphone)	\$12,256	\$0	\$60,770	\$377
BillMeLater, Inc.	\$12,183	\$0	\$0	\$0
Port Erie Plastics, Inc.	\$12,097	\$0	\$18,624	\$18,624
Environmental Control Systems, Inc.	\$12,066	\$0	\$0	\$0
Godshalls Quality Meats, Inc.	\$12,043	\$0	\$22,796	\$22,796
Synergy Advanced Pharmaceuticals, Inc.	\$12,043	\$0	\$200,936	\$161,562
Irene's Bakery & Gourment Kitchen, Inc.	\$12,032	\$0	\$14,752	\$14,752
Human Motion Technologies, LLC	\$11,994	\$0	\$0	\$0
Aptagen, LLC	\$11,984	\$0	\$0	\$0
Positek RFID, LP	\$11,940	\$0	\$36,492	\$16,889
Innovative Systems, Inc.	\$11,927	\$0	\$5,475	\$0
Mainstream Swimsuits, Inc.	\$11,923	\$0	\$31,459	\$0
Flowmetric Diagnostics, Inc.	\$11,863	\$0	\$33,806	\$10,980
N. Harris Computer Corporation	\$11,783	\$0	\$0	\$0
VenatoRx Pharmaceuticals, Inc.	\$11,771	\$0	\$159,428	\$0
CMT Laboratories, Inc.	\$11,749	\$0	\$41,901	\$40,966
Best Building Systems, Inc.	\$11,744	\$0	\$0	\$0
Integrated Management Solutions, Inc.	\$11,737	\$0	\$0	\$0
L&W Apparel Company, Inc.	\$11,714	\$0	\$0	\$0
Sunbury Textile Mills, Inc.	\$11,676	\$0	\$30,345	\$30,345
Woodward McCoach, Inc.	\$11,631	\$0	\$16,435	\$16,435
Viper Network Systems, LLC	\$11,596	\$0	\$0	\$0
Advanced Powder Products, Inc.	\$11,585	\$0	\$0	\$0
Specialty Coated Products, Inc.	\$11,584	\$0	\$21,267	\$0
Robinson Fans, Inc.	\$11,581	\$0	\$28,960	\$5,227
B&B Desgined Systems, Inc.	\$11,567	\$0	\$0	\$0
CDC Software, LLC	\$11,567	\$0	\$0	\$0
Graybills Tool & Die, Inc.	\$11,547	\$0	\$61,584	\$50,913
Solar Innovations, Inc.	\$11,511	\$0	\$14,410	\$14,410
Boose at Cornwall, Inc.	\$11,503	\$0	\$5,831	\$0
eDocs Technologies	\$11,466	\$0	\$6,952	\$6,952
Marine Acquistion US Incorporated	\$11,465	\$0	\$23,824	\$0
Clair Bros. Audio Enterprises, Inc.	\$11,456	\$0	\$27,849	\$26,098
Drummond Scientific Company	\$11,401	\$0	\$0	\$0

Taxpayer Name	2017 Credit Awarded	2017 Credit Utilized¹	2016 & 2015 Credit Awarded	2016 & 2015 Credit Utilized¹
Clinical Research Associates of Central PA, LLC	\$11,334	\$0	\$894	\$894
Core Design Group, LLC	\$11,262	\$0	\$0	\$0
Castle Mold and Tool, Inc.	\$11,190	\$0	\$17,358	\$8,198
Enclara Pharmacia (f/k/a ExcelleRx, Inc.)	\$11,185	\$0	\$22,943	\$0
Greenwich Terminals, LLC	\$11,165	\$0	\$1,931	\$0
Trademark Vision USA, LLC	\$11,138	\$0	\$0	\$0
Grouse Ridge Capital, LLC	\$11,131	\$0	\$0	\$0
Eminence Entertainment Enterprises, LLC	\$11,105	\$0	\$13,392	\$0
Griff & Associates, LP	\$11,088	\$0	\$15,971	\$0
Specialty Minerals, Inc.	\$10,975	\$0	\$11,031	\$0
Clean Earth, Inc.	\$10,932	\$0	\$0	\$0
Forney, LP	\$10,903	\$0	\$0	\$0
Stock, Garber and Associates, Inc.	\$10,888	\$0	\$19,654	\$11,045
Kuhn Tool & Die Co.	\$10,880	\$0	\$0	\$0
Philadelphia Tramrail Enterprises, Inc.	\$10,864	\$0	\$41,789	\$41,789
Solid State Ceramics, Inc.	\$10,841	\$0	\$10,475	\$6,827
RKI Apps, Inc.	\$10,835	\$0	\$7,056	\$0
Problem Solutions, LLC	\$10,800	\$0	\$21,854	\$583
Peterson Cartridge Co.	\$10,799	\$0	\$0	\$0
Edward Marc, Inc.	\$10,797	\$0	\$0	\$0
Qualaris Healthcare Solutions, Inc.	\$10,796	\$0	\$7,164	\$7,164
Neville Chemical Company	\$10,775	\$0	\$15,941	\$518
R D Coatings, Inc.	\$10,741	\$0	\$25,825	\$25,825
CryoConcepts, LP	\$10,705	\$0	\$49,230	\$49,230
Itrco, LP	\$10,625	\$0	\$43,517	\$31,976
Bettwy Electric, Inc.	\$10,597	\$0	\$26,734	\$26,734
EFS Networks, Inc.	\$10,588	\$0	\$0	\$0
Basic Carbide Corporation	\$10,576	\$0	\$32,301	\$7,604
Haller Enterprises , Inc.	\$10,549	\$0	\$7,692	\$0
Brio Design Partners, LLC (d/b/a Brio Solutions)	\$10,544	\$0	\$0	\$0
C&R Directional Boring, LLC	\$10,541	\$0	\$15,953	\$8,126
R.A. Walton & Co., Inc. (t/a Walton & Company)	\$10,538	\$0	\$0	\$0
CertainTeed Corporation	\$10,491	\$0	\$0	\$0
Triumph Controls, LLC	\$10,490	\$0	\$15,249	\$499
Mission Critical Partners, Inc.	\$10,391	\$0	\$0	\$0
Zephyr Aluminum, LLC	\$10,349	\$0	\$2,790	\$0
Innovative Sintered Metals, Inc.	\$10,304	\$0	\$15,920	\$15,920
Instrumentation Industries, Inc.	\$10,298	\$0	\$4,380	\$4,380
The Lane Construction Corporation	\$10,271	\$0	\$6,209	\$2,364
Yards Brewing Company, LLC	\$10,228	\$0	\$0	\$0
AP Exhaust Holdings, LLC	\$10,212	\$0	\$0	\$0
ProMinent Fluid Controls, Inc.	\$10,164	\$0	\$12,493	\$12,493
Custom Processing Services, LLC	\$10,144	\$0	\$16,777	\$11,322
Graphene Frontiers, LLC	\$10,131	\$0	\$28,303	\$28,303

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
EFE Laboratories, Inc.	\$10,089	\$0	\$0	\$0
TBJ Incorporated	\$9,985	\$0	\$0	\$0
ARCCA Incorporated	\$9,983	\$0	\$56,308	\$56,308
Jako Enterprises, Ltd.	\$9,978	\$0	\$33,556	\$0
Zipcorp, Inc.	\$9,922	\$0	\$0	\$0
Vistacom, Inc.	\$9,905	\$0	\$0	\$0
Specialty Seal Group, Inc.	\$9,839	\$0	\$0	\$0
Talbar, Inc.	\$9,831	\$0	\$0	\$0
QuadGen Wireless Solutions	\$9,754	\$0	\$10,689	\$10,689
Connection Energy, LLC	\$9,749	\$0	\$15,727	\$15,727
InvestEdge, Inc.	\$9,741	\$0	\$46,654	\$28,735
Stahl Sheaffer Engineering, LLC	\$9,702	\$0	\$0	\$0
StubHub, Inc.	\$9,642	\$0	\$0	\$0
Environmental Energy Solutions, LLC	\$9,596	\$0	\$8,977	\$0
Go Green APU, LLC	\$9,537	\$0	\$24,213	\$24,213
O'Neal Industries, Inc.	\$9,510	\$0	\$29,563	\$0
Novotech Construction, Inc.	\$9,496	\$0	\$14,741	\$9,947
AutoMap, LLC	\$9,475	\$0	\$0	\$0
Kore Mart Limited	\$9,430	\$0	\$0	\$0
Northway Industries, Inc.	\$9,429	\$0	\$22,299	\$0
Stewart & Tate, Inc.	\$9,388	\$0	\$0	\$0
TSE, Inc.	\$9,307	\$0	\$39,585	\$15,572
X-Card Holdings Co., LLC	\$9,242	\$0	\$0	\$0
Center Hardwood, LLC	\$9,236	\$0	\$23,580	\$23,580
Integral Life Sciences Corporation	\$9,211	\$0	\$0	\$0
Longevity Biotech, Inc.	\$9,186	\$0	\$37,917	\$0
Hubert C. Jasinski Dental Lab, Inc.	\$9,129	\$0	\$0	\$0
Quire, LLC	\$9,086	\$0	\$0	\$0
Sumitomo Cryogenics of America	\$9,068	\$0	\$0	\$0
Go2Power, LLC	\$9,061	\$0	\$0	\$0
General Dynamics SATCOM Technologies, Inc.	\$9,046	\$0	\$10,393	\$0
R-V Industries, Inc.	\$8,988	\$0	\$11,373	\$11,373
Akzo Nobel Coatings, Inc.	\$8,987	\$0	\$34,282	\$22,096
Dynamic Energy Solutions, LLC	\$8,905	\$0	\$0	\$0
Robert Bosch, LLC	\$8,897	\$0	\$1,208	\$1,208
MPP Holdings, LLC	\$8,893	\$0	\$0	\$0
Reading Precast, Inc.	\$8,857	\$0	\$16,361	\$3,775
NanoVision Diagnostics, Inc.	\$8,832	\$0	\$24,829	\$0
Solar Technology, Inc.	\$8,802	\$0	\$30,672	\$16,993
Connexus Technology, LLC	\$8,775	\$0	\$0	\$0
ElectoTech Systems, Inc.	\$8,731	\$0	\$0	\$0
CRC Industries, Inc.	\$8,722	\$0	\$18,497	\$18,497
Cook, Inc.	\$8,702	\$0	\$24,902	\$0
McAdoo & Allen, Inc.	\$8,691	\$0	\$4,602	\$4,602
P-O Subsidiary, Inc.	\$8,537	\$0	\$0	\$0
Perficient, Inc.	\$8,524	\$0	\$32,153	\$32,153
Clear-Coat Holding Company	\$8,518	\$0	\$0	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
MilkCrate, LLC	\$8,499	\$0	\$0	\$0
Braskem America, Inc.	\$8,464	\$0	\$404,865	\$155,651
IOP Holdings, LLC	\$8,441	\$0	\$0	\$0
Superior Tire Rubber Corp.	\$8,432	\$0	\$50,489	\$0
LSC Design, Inc.	\$8,411	\$0	\$0	\$0
Vertical Screen, Inc.	\$8,404	\$0	\$0	\$0
Weaver Companies, Inc.	\$8,365	\$0	\$32,881	\$7,200
AKAS Tex, LLC	\$8,360	\$0	\$5,804	\$5,804
PDM Constructors, LLC	\$8,335	\$0	\$0	\$0
Bio Med Sciences, Inc.	\$8,334	\$0	\$13,921	\$13,921
The Milnes Co., Inc.	\$8,318	\$0	\$0	\$0
L3 Technologies, Inc. (f/k/a L-3 Communications Corporation	\$8,241	\$0	\$0	\$0
Arrow Electric, Inc.	\$8,240	\$0	\$0	\$0
InspiraFS, Inc.	\$8,223	\$0	\$13,705	\$13,705
Red Nucleus Solutions, LLC	\$8,163	\$0	\$0	\$0
Optimus Technologies, LLC	\$8,133	\$0	\$12,839	\$9,693
Medical Products Laboratories, Inc.	\$8,119	\$0	\$22,712	\$537
Sussex Wire, Inc.	\$8,107	\$0	\$18,415	\$2,400
Health Sciences Construction Group Ltd.	\$7,998	\$0	\$7,726	\$7,726
Horizon Signal Technologies, Inc.	\$7,989	\$0	\$41,107	\$27,819
InfoMC, Inc.	\$7,987	\$0	\$115,725	\$0
Pulse Anatomical Model Company, Inc.	\$7,984	\$0	\$0	\$0
AquaPhoenix Scientific, Inc.	\$7,970	\$0	\$7,824	\$0
H.B. Frazer Company - Pennsylvania	\$7,894	\$0	\$166,878	\$0
Harry Miller Corporation	\$7,891	\$0	\$34,346	\$0
Glenn O. Hawbaker, Inc.	\$7,882	\$0	\$14,844	\$0
Pilot Air Freight Corp.	\$7,877	\$0	\$5,167	\$5,167
Luzerne Farm, LLC	\$7,872	\$0	\$8,713	\$0
Lincoln Contracting & Equipment Co., Inc.	\$7,852	\$0	\$37,647	\$1,734
Diamondback Automotive Accessories	\$7,769	\$0	\$0	\$0
TechKnowServ Corporation	\$7,662	\$0	\$4,326	\$4,326
SpinWorks International Corporation	\$7,658	\$0	\$5,265	\$0
Nascent Devices, LLC	\$7,591	\$0	\$12,006	\$12,006
Future POS, Inc.	\$7,566	\$0	\$184,699	\$131,370
Forest Devices, Inc.	\$7,527	\$0	\$0	\$0
Liberty Fox Technologies, LLC	\$7,518	\$0	\$25,731	\$0
MCC International, Inc.	\$7,499	\$0	\$0	\$0
Right Reason Technologies, LLC	\$7,489	\$0	\$4,475	\$0
Kadco Ceramics, LLC	\$7,478	\$0	\$0	\$0
York Imperial Plastics, Inc.	\$7,466	\$0	\$0	\$0
RendrFX, Inc.	\$7,437	\$0	\$0	\$0
Actco Tool & Manufacturing Company, Inc.	\$7,433	\$0	\$0	\$0
Capsen Robotics, Inc.	\$7,382	\$0	\$0	\$0
Innovative Supply Solutions, LLC	\$7,374	\$0	\$14,796	\$0
Avantar Performance Materials Holdings, Inc.	\$7,373	\$0	\$0	\$0
Medidata Solutions, Inc.	\$7,365	\$0	\$27,631	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
KS Tooling, Inc.	\$7,304	\$0	\$0	\$0
Armstrong Utilities, Inc.	\$7,237	\$0	\$27,626	\$8,685
Embedded Energy Technology, LLC	\$7,192	\$0	\$9,715	\$6,665
Radius Corporation	\$7,171	\$0	\$65,580	\$65,169
Penn State Construction J&D, LLC	\$7,126	\$0	\$10,244	\$10,244
Rochling Machined Plastics, LP	\$7,085	\$0	\$8,100	\$8,100
Spartan Motors USA, Inc.	\$7,070	\$0	\$0	\$0
E.A. Fischione Instruments, Inc.	\$7,064	\$0	\$46,523	\$25,989
Cagent Vascular, LLC	\$7,053	\$0	\$0	\$0
Indian Ridge Provisions, Inc.	\$7,049	\$0	\$0	\$0
Magnetic Windings Co., Inc.	\$7,013	\$0	\$93,509	\$63,628
Return Logic, Inc.	\$6,998	\$0	\$4,351	\$0
State of the Arc Welding and Fabricating, LLC	\$6,995	\$0	\$0	\$0
Apperson Labs, LLC	\$6,957	\$0	\$0	\$0
Kieran Timberlake, LLC	\$6,890	\$0	\$14,673	\$3,279
LunaMetrics, LLC	\$6,888	\$0	\$0	\$0
SFS Group USA, Inc.	\$6,839	\$0	\$0	\$0
Two Mitts, Inc. (f/k/a Fabri-Kal Corporation)	\$6,815	\$0	\$0	\$0
DR Martin Fabricating	\$6,732	\$0	\$0	\$0
PledgePlatform, LLC	\$6,730	\$0	\$0	\$0
Pyrotechnics Management, Inc.	\$6,654	\$0	\$0	\$0
Bliley Technologies Incorporated (Bliley Electric Corporation)	\$6,653	\$0	\$14,968	\$17
ChargeltSpot, LLC	\$6,652	\$0	\$0	\$0
Baldwin Publishing, Inc.	\$6,643	\$0	\$10,837	\$7,319
MXL Industries, Inc.	\$6,609	\$0	\$0	\$0
Artsana USA, Inc.	\$6,607	\$0	\$11,492	\$11,492
Nielsen-Kellerman, Co.	\$6,583	\$0	\$31,983	\$0
Penn State Mechanical Contractors, Inc.	\$6,565	\$0	\$4,307	\$0
M-Mech Defense, Inc.	\$6,494	\$0	\$20,695	\$20,695
Onex, Inc.	\$6,484	\$0	\$0	\$0
Meco Demolition, Inc.	\$6,453	\$0	\$0	\$0
NEU Dynamics Corp.	\$6,443	\$0	\$0	\$0
R&B Laboratory, Inc.	\$6,442	\$0	\$0	\$0
Crompco, LLC	\$6,428	\$0	\$7,973	\$0
Truck-Lite Co., LLC	\$6,428	\$0	\$0	\$0
Sinterfire, Inc.	\$6,413	\$0	\$18,620	\$8,406
Diversified Traffic Products, Inc. Mercury Electronics	\$6,410	\$0	\$0	\$0
Charles Beseler Company	\$6,397	\$0	\$0	\$0
Ira G. Steffy & Son, Inc.	\$6,390	\$0	\$0	\$0
Wazoodle Fabrics, LLC	\$6,389	\$0	\$4,255	\$0
Rettew Associates, Inc.	\$6,386	\$0	\$26,857	\$26,857
Miria Systems, Inc.	\$6,384	\$0	\$25,066	\$25,066
Intuidex, Inc.	\$6,355	\$0	\$0	\$0
Apter Industries, Inc.	\$6,277	\$0	\$0	\$0
LCR Embedded Systems, Inc.	\$6,237	\$0	\$5,142	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
GlobalPOPS, Inc.	\$6,227	\$0	\$37,283	\$37,251
Multi-Color Corporation	\$6,215	\$0	\$0	\$0
Astrorobotic Technology, Inc.	\$6,214	\$0	\$134,559	\$134,559
Maxx Orthopedics, Inc.	\$6,145	\$0	\$12,866	\$0
Covey, LLC	\$6,141	\$0	\$5,361	\$0
Eagle Metals, Inc.	\$6,102	\$0	\$24,460	\$24,460
Gift Card Granny, LLC	\$6,078	\$0	\$0	\$0
Montgomery Bros. Plumbing & Heating, LLC	\$6,065	\$0	\$5,869	\$5,869
Dawar Technologies, Inc.	\$6,058	\$0	\$8,434	\$0
NetBeez, Inc.	\$6,026	\$0	\$7,986	\$7,891
The Stork IB2C, Inc.	\$6,022	\$0	\$18,281	\$18,281
TLC North, LLC	\$6,015	\$0	\$9,700	\$9,700
PBM, Inc.	\$6,002	\$0	\$35,389	\$35,389
Diversified Coatings, Inc.	\$5,978	\$0	\$66,733	\$15,072
RobotWits, LLC	\$5,974	\$0	\$0	\$0
Hefner Machine & Tool, Inc.	\$5,960	\$0	\$0	\$0
Safran Publishing Company	\$5,958	\$0	\$15,439	\$0
Level Interactive, Inc.	\$5,937	\$0	\$0	\$0
Biochem Insights, Inc.	\$5,935	\$0	\$11,191	\$11,191
ON Semiconductor Corporation	\$5,900	\$0	\$0	\$0
Carbon Freight Company	\$5,875	\$0	\$0	\$0
Bore Tech, Inc.	\$5,848	\$0	\$47,586	\$3,600
Doutt Tool, Inc.	\$5,823	\$0	\$28,581	\$28,581
Shanks Extracts, Inc.	\$5,788	\$0	\$0	\$0
weCreate, LLC	\$5,787	\$0	\$2,221	\$2,221
ASI Technologies, Inc.	\$5,784	\$0	\$71,497	\$580
Plastech Container Systems, Inc.	\$5,719	\$0	\$0	\$0
MESH, Inc.	\$5,696	\$0	\$15,828	\$0
NovaTech, LLC	\$5,656	\$0	\$0	\$0
Asset-Map, LLC	\$5,639	\$0	\$0	\$0
Alpine Sales & Rental Corp.	\$5,628	\$0	\$0	\$0
Saucon Technologies	\$5,572	\$0	\$9,952	\$9,952
Johnston Mechanical	\$5,501	\$0	\$0	\$0
Rubitection, Inc.	\$5,490	\$0	\$3,795	\$3,795
Deibler Machining, LLC	\$5,471	\$0	\$6,492	\$6,492
Communication Systems, Inc.	\$5,446	\$0	\$0	\$0
PHL Collective, LLC	\$5,420	\$0	\$0	\$0
Datto, Inc.	\$5,418	\$0	\$5,944	\$1,145
Richards Energy Group, Inc.	\$5,411	\$0	\$0	\$0
Michels Bakery, Inc.	\$5,403	\$0	\$0	\$0
Finish Thompson, Inc.	\$5,391	\$0	\$15,061	\$12,110
Duolingo, Inc.	\$5,372	\$0	\$239,570	\$73,845
AP Thermoforming, LLC	\$5,360	\$0	\$7,524	\$0
M&S Centerless Grinding	\$5,341	\$0	\$0	\$0
ShowClix, Inc.	\$5,327	\$0	\$18,080	\$18,080
Boose Aluminum Foundry Co., Inc.	\$5,282	\$0	\$10,524	\$28
CJ Robinson Company	\$5,277	\$0	\$5,629	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Guardian Protection Services, Inc.	\$5,269	\$0	\$30,456	\$49
Beaver Steel Services, Inc.	\$5,268	\$0	\$25,443	\$15,940
Erdman Anthony Associates, Inc.	\$5,249	\$0	\$4,962	\$4,962
Deeplocal, Inc.	\$5,239	\$0	\$8,556	\$972
Fragrance Manufacturing, Inc.	\$5,211	\$0	\$0	\$0
Henry Molded Products, Inc.	\$5,209	\$0	\$13,637	\$1,120
DGNY, LLC Co. Govberg Jewelers	\$5,195	\$0	\$5,829	\$0
QSI Management, LLC	\$5,186	\$0	\$57,453	\$9,020
Southwark Metal Manufacturing Company, Inc.	\$5,139	\$0	\$0	\$0
Scheerer Bearing Corporation	\$5,123	\$0	\$45,253	\$25,295
uCompli, LLC	\$5,122	\$0	\$0	\$0
Sweet Note Bakery, Inc.	\$5,117	\$0	\$10,550	\$10,550
Contec Systems Industrial Corp.	\$5,107	\$0	\$13,501	\$12,980
Carrier Class Green Infrastructure, LLC	\$5,078	\$0	\$0	\$0
Advanced Textile Composites, Inc.	\$5,046	\$0	\$28,957	\$17,187
Siberline Manufacturing Co., Inc.	\$5,045	\$0	\$0	\$0
Good Ideas, Inc.	\$4,932	\$0	\$0	\$0
Mighty Holdings, Inc.	\$4,904	\$0	\$0	\$0
ANRO, Inc.	\$4,883	\$0	\$13,721	\$13,721
Touchtown, Inc.	\$4,828	\$0	\$72,379	\$66,812
Srvd, Inc.	\$4,814	\$0	\$0	\$0
BirdBrain Technologies, LLC	\$4,807	\$0	\$9,284	\$4,785
PRL Industries, Inc.	\$4,737	\$0	\$10,053	\$1,000
Digital Dream Labs, LLC	\$4,725	\$0	\$0	\$0
Science Applications International Corporation	\$4,722	\$0	\$0	\$0
Grue & Bleen, LLC	\$4,716	\$0	\$0	\$0
New Metro Design, LLC	\$4,701	\$0	\$9,790	\$9,790
Orbweaver Sourcing, LLC	\$4,693	\$0	\$28,464	\$28,464
J. Baur Machining, Inc.	\$4,673	\$0	\$0	\$0
Preferred Security Components, Inc. (d/b/a Preferred Technologies Group)	\$4,597	\$0	\$8,926	\$8,926
OCTech, LLC	\$4,592	\$0	\$2,095	\$0
Joseph Barbato Associates, LLC	\$4,590	\$0	\$0	\$0
Fabricated Components, Inc.	\$4,574	\$0	\$3,853	\$0
Paul B. Zimmerman, Inc.	\$4,540	\$0	\$10,011	\$10,011
Gluzdovcom, Inc.	\$4,509	\$0	\$0	\$0
Sealstrip Corporation	\$4,472	\$0	\$7,230	\$2,885
LTL Wholesale, Inc.	\$4,469	\$0	\$6,809	\$3,014
Veyko, Inc.	\$4,468	\$0	\$0	\$0
Integrated Power Designs, Inc.	\$4,461	\$0	\$0	\$0
Uni-Tec Consulting Engineers, Inc.	\$4,450	\$0	\$33,764	\$33,764
Bald Eagle Precision, LLC	\$4,437	\$0	\$2,170	\$2,170
Technotects, Inc.	\$4,408	\$0	\$0	\$0
Levolta Pharmaceuticals, Inc.	\$4,361	\$0	\$5,257	\$0
Jay Fulkroad and Sons, Inc.	\$4,354	\$0	\$16,172	\$8,261
Universal Atlantic Systems, Inc.	\$4,353	\$0	\$0	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Yavi, LLC	\$4,325	\$0	\$0	\$0
Wheeler Bros., Inc.	\$4,322	\$0	\$3,677	\$3,677
Bosch Security Systems, Inc.	\$4,305	\$0	\$8,071	\$4,035
Videojet Technologies, Inc.	\$4,300	\$0	\$0	\$0
Highpoint Tool and Machine, Inc.	\$4,296	\$0	\$66,760	\$33,744
T-Mobile USA, Inc.	\$4,177	\$0	\$0	\$0
UM Technologies, LLC	\$4,152	\$0	\$0	\$0
SB Global Foods, Inc.	\$4,140	\$0	\$0	\$0
Bazooka Jane, Inc. (d/b/a Trusst Lingerie)	\$4,113	\$0	\$0	\$0
Custom Processing Services, Inc.	\$4,099	\$0	\$17,606	\$12,570
Burkhardt Sheet Metal Company, Inc.	\$4,064	\$0	\$0	\$0
Toaster Creations, LLC	\$4,038	\$0	\$0	\$0
School Gate Guardian, Inc.	\$3,967	\$0	\$9,863	\$5,800
Defiance Metal Products of PA, Inc.	\$3,957	\$0	\$1,293	\$0
Lobar Site Development Corporation	\$3,930	\$0	\$5,939	\$623
PHRQL, Inc.	\$3,879	\$0	\$12,765	\$12,765
Cummins-Allison Corp.	\$3,874	\$0	\$41,168	\$41,168
Lehigh Defense, LLC	\$3,845	\$0	\$0	\$0
Ross Technology Corporation	\$3,843	\$0	\$0	\$0
PHOTONIS USA Pennsylvania, Inc.	\$3,827	\$0	\$0	\$0
T&M Associates	\$3,804	\$0	\$16,199	\$16,199
Oat Foundry, LLC	\$3,788	\$0	\$0	\$0
Chemcut Holdings, LLC	\$3,765	\$0	\$10,795	\$10,795
Load Rite Corp.	\$3,742	\$0	\$0	\$0
Athena Global Advisors, Inc.	\$3,738	\$0	\$0	\$0
Dyco, Inc.	\$3,730	\$0	\$22,207	\$8,077
Grant Street Group, Inc.	\$3,727	\$0	\$0	\$0
Z-Axis Connector Company	\$3,722	\$0	\$2,827	\$2,827
Try Tek Machine Works Incorporated	\$3,706	\$0	\$4,723	\$0
PSNergy, LLC	\$3,636	\$0	\$0	\$0
Wiggins Shredding, Inc.	\$3,634	\$0	\$5,320	\$0
Torvian, Inc.	\$3,633	\$0	\$8,060	\$0
Littlestown Foundry, Inc.	\$3,613	\$0	\$0	\$0
Ben Peoples Industries	\$3,569	\$0	\$0	\$0
Hillside Acquisition Group, LLC and Subs	\$3,568	\$0	\$0	\$0
Papetti Hygrade Egg Products, Inc.	\$3,560	\$0	\$0	\$0
Raceseng Design, Inc.	\$3,553	\$0	\$0	\$0
Belden, Inc.	\$3,550	\$0	\$0	\$0
K-Fab, Inc.	\$3,508	\$0	\$86,029	\$86,029
Atrin Pharmaceuticals, LLC	\$3,505	\$0	\$23,205	\$252
Blair Companies	\$3,466	\$0	\$12,311	\$12,311
Chromalox, Inc.	\$3,448	\$0	\$27,811	\$0
Rorus, Inc.	\$3,446	\$0	\$1,759	\$0
Pequea Machining, Inc.	\$3,421	\$0	\$0	\$0
Vitrius Technologies, LLC	\$3,398	\$0	\$8,000	\$8,000
Girton Manufacturing, Inc.	\$3,396	\$0	\$0	\$0
White Oak Mills, Inc.	\$3,384	\$0	\$2,785	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
VascularStrategies, LLC	\$3,325	\$0	\$8,881	\$246
Pennlake Corporation (d/b/a R Conrader Company)	\$3,322	\$0	\$10,199	\$9,355
Carpenter Powder Products, Inc.	\$3,319	\$0	\$4,258	\$0
Winter Gardens Quality Foods, Inc.	\$3,303	\$0	\$0	\$0
Blair Strip Steel Co.	\$3,284	\$0	\$16,679	\$2,890
Quad Graphics Marketing, LLC	\$3,269	\$0	\$0	\$0
Otreva, LLC	\$3,242	\$0	\$0	\$0
Macron Dynamics, Inc.	\$3,196	\$0	\$0	\$0
Proxicast, LLC	\$3,176	\$0	\$6,915	\$3,265
Patriot Sensors and Controls Corporation	\$3,145	\$0	\$0	\$0
Custom Metal Fabricating, Inc.	\$3,125	\$0	\$0	\$0
Schlouch Incorporated	\$3,069	\$0	\$18,837	\$7,037
Cardinal Systems, Inc.	\$3,063	\$0	\$0	\$0
Hermance Strouse, Inc.	\$3,040	\$0	\$15,694	\$6,219
Kunzler & Company, Inc.	\$2,984	\$0	\$0	\$0
Jonas Software USA, LLC	\$2,953	\$0	\$3,747	\$935
Boyesen, Inc.	\$2,943	\$0	\$11,522	\$11,010
Keystone Manufacturing, Inc.	\$2,934	\$0	\$0	\$0
Specialty Fabrication and Powder Co.	\$2,932	\$0	\$7,228	\$7,228
Jordan Acquisition Group, LLC (d/b/a American Auto Matrix)	\$2,916	\$0	\$0	\$0
Solenoid Solutions, Inc.	\$2,888	\$0	\$23,033	\$15,714
Nuventive, LLC	\$2,881	\$0	\$10,252	\$0
Oliver-Tolas Healthcare Packaging, Inc.	\$2,874	\$0	\$5,463	\$5,463
Crystal, Inc. - PMC	\$2,874	\$0	\$2,128	\$2,128
Tyrone Milling	\$2,857	\$0	\$7,045	\$6,678
Viking Tool & Gage, Inc.	\$2,848	\$0	\$7,371	\$1,918
FishUSA, LLC	\$2,841	\$0	\$0	\$0
Robert P. Lepley Electrical Contractor, Inc.	\$2,837	\$0	\$0	\$0
Newman & Company, Inc.	\$2,788	\$0	\$4,394	\$0
CDG Environmental, LLC	\$2,777	\$0	\$3,850	\$3,641
MCS Industries, Inc.	\$2,756	\$0	\$4,306	\$4,306
Security Risk Advisors, Inc.	\$2,746	\$0	\$0	\$0
Social Media Information, LLC	\$2,745	\$0	\$18,041	\$18,041
Martin Energy Group Services, LLC	\$2,702	\$0	\$0	\$0
Quinn & Associates, Inc.	\$2,695	\$0	\$0	\$0
In The Stix Broadband, LLC	\$2,693	\$0	\$3,556	\$1,347
Havis, Inc.	\$2,690	\$0	\$23,608	\$5,336
Infrascan, Inc.	\$2,662	\$0	\$7,574	\$0
Matric Limited	\$2,644	\$0	\$15,537	\$2,956
Gardners Candies, Inc.	\$2,637	\$0	\$2,724	\$2,724
Armstrong Accuspec, LLC	\$2,612	\$0	\$8,231	\$0
Nicholson Construction Company	\$2,611	\$0	\$0	\$0
ParaCoat Technologies, Inc.	\$2,608	\$0	\$4,015	\$4,015
AgileSwitch, LLC	\$2,595	\$0	\$0	\$0
French Creek Production, Inc.	\$2,588	\$0	\$16,711	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Carel USA, LLC	\$2,581	\$0	\$0	\$0
Analytical Design Solutions, Inc. ADSI	\$2,572	\$0	\$0	\$0
St. Marys Box Company	\$2,559	\$0	\$8,729	\$5,527
Siemens Medical Solutions USA, Inc.	\$2,545	\$0	\$0	\$0
Ranbar Electrical Materials, Inc.	\$2,531	\$0	\$0	\$0
Thread International PBC, Inc.	\$2,504	\$0	\$0	\$0
Easthill Group, Inc.	\$2,493	\$0	\$0	\$0
Richardson Cooling Packages, LLC	\$2,475	\$0	\$7,423	\$0
Industrial Vision Systems, Inc.	\$2,463	\$0	\$0	\$0
II VI Optical Systems, Inc.	\$2,455	\$0	\$0	\$0
American Manufacturing & Engineering Corporation	\$2,436	\$0	\$7,806	\$1,183
Applied Educational Systems, Inc.	\$2,354	\$0	\$1,155	\$0
HCC/KPM, LLC	\$2,351	\$0	\$0	\$0
Mason Jars Company	\$2,308	\$0	\$6,458	\$4,331
MoreFrames Animation, LLC	\$2,227	\$0	\$0	\$0
Northpoint Distribution, LLC	\$2,211	\$0	\$539	\$532
Lancaster Oil Company	\$2,211	\$0	\$12,601	\$8,233
York Ice Co., Inc.	\$2,195	\$0	\$0	\$0
Wright Labs, Inc.	\$2,183	\$0	\$0	\$0
Wise Telemetry, LLC (f/k/a Breathwide, LLC)	\$2,162	\$0	\$0	\$0
Aldus Brewing Company	\$2,139	\$0	\$0	\$0
Warners Innovations Solutions	\$2,083	\$0	\$11,794	\$11,794
Snyder Distribution, Inc.	\$2,072	\$0	\$0	\$0
Flowserve US, Inc.	\$2,064	\$0	\$9,836	\$9,836
Sokolis Transportation Group, Inc.	\$2,061	\$0	\$2,952	\$2,952
Aberdeen Road Company	\$2,057	\$0	\$8,702	\$4,875
Refrigeration & Mechanical	\$2,050	\$0	\$0	\$0
JetNet Corporation	\$2,049	\$0	\$0	\$0
Curotec, LLC	\$2,048	\$0	\$2,978	\$0
NE Foods, Inc.	\$2,047	\$0	\$3,761	\$333
American Textile Company, Inc.	\$2,025	\$0	\$21,200	\$5,810
Lumaclean, LLC	\$2,022	\$0	\$0	\$0
General Transervice, Inc.	\$2,018	\$0	\$8,849	\$4,569
Coatingtech, LLC	\$2,014	\$0	\$0	\$0
WorkDesq, LLC	\$1,991	\$0	\$0	\$0
Modern Industries, Inc.	\$1,978	\$0	\$27,779	\$0
Xyvid, Inc.	\$1,977	\$0	\$0	\$0
Benchmark Construction Co., Inc.	\$1,937	\$0	\$0	\$0
Tube Methods, Inc.	\$1,937	\$0	\$0	\$0
SAS Institute, Inc.	\$1,933	\$0	\$35,182	\$11,091
Acker Drill Company, Inc.	\$1,927	\$0	\$0	\$0
Creative Bending Systems, Inc.	\$1,923	\$0	\$13,002	\$13,002
Weaver Industries, Inc.	\$1,899	\$0	\$3,895	\$55
Modern Cabinet and Construction, Inc.	\$1,896	\$0	\$4,820	\$4,820
Qmac - Quality Machining, Inc.	\$1,856	\$0	\$9,458	\$9,458
Bulk Chemicals, Inc.	\$1,853	\$0	\$7,646	\$6,137

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
The Adept Corporation	\$1,814	\$0	\$0	\$0
Penn Wood Products, Inc.	\$1,794	\$0	\$15,388	\$8,433
BoardBookit, Inc.	\$1,772	\$0	\$13,264	\$13,264
Genus Technologies, LLC	\$1,766	\$0	\$0	\$0
PittMoss, LLC	\$1,733	\$0	\$0	\$0
NCA Technologies, Inc.	\$1,705	\$0	\$21,106	\$5,613
Netzsch USA Holdings, Inc.	\$1,704	\$0	\$15,490	\$15,490
Epidarus Therapeutics	\$1,700	\$0	\$733	\$0
Ckjk, LLC	\$1,674	\$0	\$998	\$998
X-F Enterprises, Inc.	\$1,652	\$0	\$9,684	\$3,970
Composite Panels Innovations, LLC	\$1,630	\$0	\$898	\$898
United Parcel Service General Services Co.	\$1,577	\$0	\$0	\$0
National Glass and Metal Co., Inc.	\$1,533	\$0	\$0	\$0
Light Tool & Machine, Inc.	\$1,523	\$0	\$0	\$0
L.F. Lambert Spawn Company, Inc.	\$1,520	\$0	\$5,402	\$653
Robar Industries, Inc.	\$1,517	\$0	\$0	\$0
Nova 6, LLC	\$1,516	\$0	\$0	\$0
Delserro Engineering Solutions, Inc.	\$1,490	\$0	\$5,050	\$3,317
ExH, Inc.	\$1,476	\$0	\$0	\$0
SKC, Inc.	\$1,472	\$0	\$25,685	\$11,081
TravelWits, LLC	\$1,467	\$0	\$0	\$0
PMC Organometallix, Inc.	\$1,460	\$0	\$0	\$0
Spring City Electrical Mfg. Co.	\$1,431	\$0	\$6,086	\$4,969
Diversified Packaging Concepts, Inc. (d/b/a North Atlantic Specialty Bag)	\$1,427	\$0	\$0	\$0
Pocket Expert, LLC	\$1,387	\$0	\$0	\$0
ExecutivePulse, Inc.	\$1,378	\$0	\$24,965	\$11,762
S&W Race Cars & Components, Inc.	\$1,374	\$0	\$0	\$0
Premier Automation Holdings, Inc.	\$1,365	\$0	\$0	\$0
Brayman Holding Company, Inc.	\$1,365	\$0	\$0	\$0
Brayman Precast Solutions, LLC	\$1,365	\$0	\$0	\$0
DMLogic, LLC	\$1,339	\$0	\$11,534	\$0
Dental Design Labs, Inc.	\$1,297	\$0	\$10,462	\$10,462
Signature Vacuum Systems, Inc.	\$1,294	\$0	\$0	\$0
Blackbaud, Inc.	\$1,279	\$0	\$0	\$0
Griffith Brothers Whitetail Ridge, Inc.	\$1,277	\$0	\$0	\$0
Spark Cures, LLC	\$1,226	\$0	\$0	\$0
Project Vive, LLC	\$1,198	\$0	\$0	\$0
Hanna Transfer Company North	\$1,170	\$0	\$6,244	\$3,629
ERP Essentials, LLC	\$1,157	\$0	\$0	\$0
Circadiance, LLC	\$1,151	\$0	\$4,193	\$0
AES Asset Acquisition Corporation	\$1,139	\$0	\$0	\$0
Trimetric Enterprises, Inc.	\$1,126	\$0	\$0	\$0
Warrior Strength, LLC	\$1,117	\$0	\$0	\$0
SP Acquisition Company (d/b/a Reitech Corporation)	\$1,113	\$0	\$0	\$0
Lord Corporation	\$1,107	\$0	\$756,474	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
EEme, LLC	\$1,105	\$0	\$0	\$0
ASI Business Solutions, Inc. (f/k/a Automated Systems, Inc.)	\$1,084	\$0	\$0	\$0
United Chemical Technologies, Inc.	\$1,081	\$0	\$0	\$0
VASCOR, Inc.	\$1,063	\$0	\$22,124	\$22,124
DVCC, Inc.	\$1,045	\$0	\$17,951	\$0
Strahman Valves, Inc.	\$1,026	\$0	\$0	\$0
Hydro-Spray Wash Systems, Inc.	\$1,002	\$0	\$16,556	\$7,733
Rosenberger USA Corp (f/k/a Rosenberger Hochfrequenztechnik GMBH)	\$980	\$0	\$0	\$0
Beiler Hydraulics, Inc.	\$980	\$0	\$35,666	\$5,434
PennFleet Corp.	\$975	\$0	\$0	\$0
Online Stores, LLC	\$946	\$0	\$1,521	\$0
Motors Drives & Controls, Inc.	\$938	\$0	\$28,918	\$0
Environmental Monitoring Technical	\$933	\$0	\$1,644	\$1,644
Hamilton Precision Metals, Inc.	\$884	\$0	\$0	\$0
Leech Industries, Inc.	\$876	\$0	\$449	\$449
Stoltz Mfg., LLC	\$844	\$0	\$0	\$0
Train Control Systems, Inc.	\$843	\$0	\$10,330	\$0
HEBI Robotics, Inc.	\$837	\$0	\$0	\$0
Industry Weapon, Inc.	\$830	\$0	\$39,031	\$4,105
Diamond MT, Inc.	\$819	\$0	\$9,050	\$3,772
Atoptix, LLC	\$817	\$0	\$0	\$0
Greenleaf Corporation	\$799	\$0	\$30,110	\$0
Hosler Corp.	\$798	\$0	\$6,120	\$6,120
Caledonian Dye Works, Inc.	\$782	\$0	\$2,416	\$0
Evol Science, LLC	\$745	\$0	\$0	\$0
Crows Head Outfitters, LLC	\$721	\$0	\$0	\$0
GJRPH, LP	\$721	\$0	\$5,909	\$0
Cocalico Distribution, LLC	\$702	\$0	\$1,882	\$0
JCR Sales Mfg., LLC	\$694	\$0	\$2,889	\$2,889
Sekisui Polymer Innovations, LLC	\$686	\$0	\$46,800	\$4,855
Milton Steel Company	\$685	\$0	\$0	\$0
C.U.E., Inc.	\$662	\$0	\$25,859	\$25,859
Rapid Reaction, Inc.	\$660	\$0	\$3,498	\$1,533
turnKey Taxes, Inc.	\$657	\$0	\$2,608	\$2,608
HGSI Investment Software, LLC	\$625	\$0	\$0	\$0
Royse Green Technologies, Inc.	\$622	\$0	\$0	\$0
Waffatopia, LLC	\$606	\$0	\$0	\$0
Cronan Sheet Metal, Inc.	\$593	\$0	\$512	\$0
Fortna, Inc.	\$552	\$0	\$44,424	\$0
Jacob A. Weaver Company	\$532	\$0	\$1,507	\$0
NovaProbe Incorporated	\$527	\$0	\$6,426	\$6,020
Misco Products Corporation	\$509	\$0	\$0	\$0
Glen Carbide, Inc.	\$493	\$0	\$1,418	\$1,418
Harbor Steel, Inc.	\$488	\$0	\$0	\$0
Shift Collaborative, LLC	\$487	\$0	\$150	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Backflips, Inc.	\$484	\$0	\$6,400	\$1,355
Regal Cast, Inc.	\$484	\$0	\$10,161	\$9,538
Edge Robotics, Inc.	\$476	\$0	\$4,192	\$83
Northeast Industrial Manufacturing, Inc.	\$467	\$0	\$0	\$0
Commerce Services, LLC	\$429	\$0	\$0	\$0
Expil, Inc.	\$402	\$0	\$19,607	\$0
Valley Instrument Co., Inc.	\$399	\$0	\$1,065	\$0
Lifestyle Foods, Inc.	\$398	\$0	\$3,124	\$0
Fluitron, Inc.	\$383	\$0	\$10,350	\$116
S&S X-Ray Products, Inc.	\$372	\$0	\$249	\$66
Destination Known, LLC Out of the Grey Coffee	\$358	\$0	\$0	\$0
Hach Company	\$350	\$0	\$0	\$0
Atomic Design, Inc.	\$321	\$0	\$20,618	\$0
Sinking Valley Woodworks, LLC	\$288	\$0	\$0	\$0
Adiaon, LLC	\$280	\$0	\$196	\$196
Mashup Technologies, LLC	\$272	\$0	\$1,710	\$1,686
Air Management Technology, Inc.	\$258	\$0	\$0	\$0
Wesanda Design, Inc.	\$252	\$0	\$521	\$383
Panther Learning Systems, Inc.	\$251	\$0	\$0	\$0
Erie Bearings Co.	\$248	\$0	\$0	\$0
General Machine Products Co., Inc.	\$243	\$0	\$0	\$0
Robert Mazza, Inc.	\$236	\$0	\$536	\$0
Sentient Investment Corporation	\$218	\$0	\$21,295	\$16,161
Conidio Tec, LLC	\$214	\$0	\$0	\$0
Newage Testing Instruments, Inc.	\$202	\$0	\$1,443	\$1,443
Integrated Fabrication & Machine, Inc.	\$181	\$0	\$11,134	\$11,134
Robinson Vacuum Tanks, Inc.	\$181	\$0	\$0	\$0
Keystone Abrasives Co.	\$180	\$0	\$596	\$292
J.A.C.K. Wood Products, LLC	\$154	\$0	\$0	\$0
Beckman Coulter, Inc.	\$149	\$0	\$12,825	\$12,825
Hillside Equity, Inc.	\$120	\$0	\$0	\$0
LCM Technologies, Inc.	\$118	\$0	\$0	\$0
Tait Farm Foods, Inc.	\$113	\$0	\$0	\$0
Quantum Software Solutions, Inc.	\$113	\$0	\$0	\$0
Railroad City Brewing Company	\$106	\$0	\$0	\$0
Qrono, Inc.	\$80	\$0	\$4,052	\$3,994
Great Lakes Automation Services, Inc.	\$76	\$0	\$4,774	\$0
TekResults Ltd.	\$29	\$0	\$3,256	\$2,120
Custom Milling & Consulting, Inc.	\$29	\$0	\$0	\$0
A&A Construction Co., Inc.	\$0	\$0	\$35,969	\$35,968
ABEC, Inc.	\$0	\$0	\$203,752	\$203,752
AbiliLife, Inc.	\$0	\$0	\$3,329	\$0
Accel Diagnostics, LLC	\$0	\$0	\$5,911	\$5,911
Acme Corrugated Box Co., Inc.	\$0	\$0	\$2,302	\$0
Acopian Technical Company	\$0	\$0	\$28,247	\$8,445
ActivAided Orthotics, LLC	\$0	\$0	\$4,920	\$4,874

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Advanced Cast Products	\$0	\$0	\$4,532	\$0
Advanced Controls & Distribution, LLC	\$0	\$0	\$118	\$118
Advanced Design, LLC	\$0	\$0	\$467	\$0
Advanced Fabrication Services, Inc.	\$0	\$0	\$673	\$0
Advanced Manufacturing Technologies	\$0	\$0	\$11,835	\$4,800
Aero Tech Designs, Inc.	\$0	\$0	\$6,649	\$0
Aesynt, Inc.	\$0	\$0	\$29,359	\$29,359
Aethon, Inc.	\$0	\$0	\$9,324	\$17
AGC Chemicals Americas, Inc.	\$0	\$0	\$32,168	\$32,168
Aggregates Equipment, Inc.	\$0	\$0	\$12,871	\$12,172
Akzo Nobel Services, Inc.	\$0	\$0	\$1,846	\$1,846
Allan Myers, Inc.	\$0	\$0	\$181,442	\$120,550
AlIFill, Inc.	\$0	\$0	\$5,441	\$91
Alpha Aromatics, Inc.	\$0	\$0	\$24,957	\$24,957
Altoona Roofing & Sheet Metal, Inc.	\$0	\$0	\$3,174	\$3,174
American Bridge Company	\$0	\$0	\$47,270	\$10,644
American Made, LLC	\$0	\$0	\$63,267	\$19,739
American Refining Group, Inc.	\$0	\$0	\$17,648	\$0
AMETEK Technical and Industrial Products, Inc.	\$0	\$0	\$22,281	\$22,281
AMETEK, Inc.	\$0	\$0	\$1,398	\$0
Amity Industries, Inc.	\$0	\$0	\$9,023	\$9,023
Amphenol Intercon Systems, Inc.	\$0	\$0	\$115,512	\$14,864
Ansaldo STS USA, Inc.	\$0	\$0	\$16,414	\$16,414
Appcove, Inc.	\$0	\$0	\$10,133	\$10,133
Apple, Inc.	\$0	\$0	\$107,576	\$0
Applied Energy Systems, Inc.	\$0	\$0	\$57,130	\$0
Aqua ChemPacs, LLC	\$0	\$0	\$11,453	\$0
Aquion Energy, Inc.	\$0	\$0	\$325,743	\$154,558
Architectural Polymers, Inc.	\$0	\$0	\$3,195	\$0
Area Tool & Manufacturing, Inc.	\$0	\$0	\$91,431	\$0
Armstrong World Industries, Inc.	\$0	\$0	\$161,434	\$0
Array Architects, Inc.	\$0	\$0	\$12,182	\$9,600
ARRIS Global Services, Inc.	\$0	\$0	\$46,584	\$0
ARRIS Technology, Inc. (f/k/a General Instrument Corporation)	\$0	\$0	\$1,694,651	\$1,694,651
Ascent Bio-Nano Technologies, Inc.	\$0	\$0	\$22,187	\$8,423
Ashland Foundry Machine Works, Inc.	\$0	\$0	\$4,805	\$0
Aspire Bariatrics, Inc.	\$0	\$0	\$13,293	\$0
ATI Operating Holdings, LLC	\$0	\$0	\$259,793	\$0
Audience Partners, LLC	\$0	\$0	\$77,130	\$389
Autodesk, Inc.	\$0	\$0	\$60,322	\$3,773
Auxilium Pharmaceuticals, Inc.	\$0	\$0	\$66,990	\$22
Babcock Power Environmental, Inc.	\$0	\$0	\$113	\$0
BASF Corporation	\$0	\$0	\$37,504	\$0
BCL Manufacturing, Inc.	\$0	\$0	\$21,064	\$21,064
Bellefield Systems, LLC	\$0	\$0	\$27,960	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Berwind Corp.	\$0	\$0	\$16,021	\$7,963
Better Bowls, LLC	\$0	\$0	\$7,870	\$7,870
Bettwy Systems, Inc.	\$0	\$0	\$18,589	\$9,681
Big B Manufacturing, Inc.	\$0	\$0	\$8,819	\$0
Biocoat, Inc.	\$0	\$0	\$15,479	\$15,479
Birdbrain Labs, LLC	\$0	\$0	\$7,186	\$7,186
Bitronics, LLC	\$0	\$0	\$13,644	\$13,644
Blade Diagnostics Corporation	\$0	\$0	\$16,940	\$2,871
Blair Roofing, Inc.	\$0	\$0	\$30,801	\$27,147
Blue Belt Technologies, Inc.	\$0	\$0	\$187,349	\$0
Boulden Energy Systems, Inc.	\$0	\$0	\$4,152	\$15
Bracalentes Manufacturing Co., Inc.	\$0	\$0	\$23,893	\$9,044
Branch Medical Group, LLC	\$0	\$0	\$23,034	\$23,034
Breen Energy Solutions, LLC	\$0	\$0	\$13,532	\$0
Brentwood Industries, Inc.	\$0	\$0	\$49,510	\$11,536
Briar Valley Vineyards and Winery, Inc.	\$0	\$0	\$2,801	\$2,801
Brookville Equipment Corporation	\$0	\$0	\$9,999	\$9,999
BSC Technologies, Inc.	\$0	\$0	\$2,262	\$113
Burrell Group, Inc.	\$0	\$0	\$1,316	\$0
Burrell Scientific, LLC	\$0	\$0	\$1,729	\$12
Caliber Therapeutics, Inc.	\$0	\$0	\$31,780	\$0
Camco Manufacturing, Inc.	\$0	\$0	\$64,273	\$54,186
Campus Door Holdings, Inc.	\$0	\$0	\$136	\$136
Canto Tool Corporation	\$0	\$0	\$891	\$0
Carnegie Learning, Inc.	\$0	\$0	\$30,331	\$0
Carpenter Technology Corporation	\$0	\$0	\$1,290,084	\$1,290,084
Casual Living Unlimited, LLC	\$0	\$0	\$18,008	\$0
Caterpillar Global Mining America, LLC	\$0	\$0	\$345,262	\$0
Caterpillar, Inc.	\$0	\$0	\$146,151	\$0
Cavanaugh Marketing Network, Inc. (d/b/a Cavanaugh)	\$0	\$0	\$3,527	\$3,527
CDC Integrated Technologies, LLC	\$0	\$0	\$3,653	\$65
CDM Smith, Inc.	\$0	\$0	\$16,900	\$16,900
CE Citycom, Inc.	\$0	\$0	\$324,143	\$324,143
Cellular Tracking Technologies, LLC	\$0	\$0	\$33,262	\$18,099
Central Hydraulics, Inc.	\$0	\$0	\$19,343	\$19,343
Centroid Corporation	\$0	\$0	\$32,549	\$32,549
Cernostics, Inc.	\$0	\$0	\$142,070	\$142,070
CESO, Inc. (f/k/a Civil Engineers of Southwest Ohio, Inc.)	\$0	\$0	\$1,673	\$0
Channellock, Inc.	\$0	\$0	\$35,285	\$557
ChemImage Corporation	\$0	\$0	\$11,715	\$0
Chick Workholding Solutions, Inc.	\$0	\$0	\$860	\$76
Clair Global Corporation (d/b/a Showco)	\$0	\$0	\$5,911	\$310
Clayton H. Landis Company, Inc. (c/o James D. Landis)	\$0	\$0	\$100,797	\$100,797
Clear-Coat, LLC	\$0	\$0	\$48,215	\$12,382

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Cleaversoft	\$0	\$0	\$10,747	\$10,747
Climatech Holding Company, Inc.	\$0	\$0	\$32,061	\$32,061
CloudMine, LLC	\$0	\$0	\$76,240	\$24,062
CM3 Building Solutions, Inc.	\$0	\$0	\$6,103	\$6,103
Cobham Advanced Electronic Solutions, Inc.	\$0	\$0	\$542,802	\$0
Coldlight Solutions, LLC	\$0	\$0	\$74,673	\$66,002
Collegiate Furnishing, Inc.	\$0	\$0	\$3,715	\$0
Columbia Northwest, Inc.	\$0	\$0	\$990	\$990
Combined Conditional Access Development	\$0	\$0	\$10,101	\$19
Community Elf, LLC	\$0	\$0	\$12,168	\$12,168
Community Light and Sound, Inc.	\$0	\$0	\$20,710	\$20,710
Compunetix, Inc.	\$0	\$0	\$17,911	\$17,911
Control Analytics, Inc.	\$0	\$0	\$52,304	\$582
Control Concepts Corporation	\$0	\$0	\$59,931	\$59,931
Conversant Labs, LLC	\$0	\$0	\$6,945	\$0
Corcept Therapeutics, Inc.	\$0	\$0	\$10,708	\$28
CorkGuru.com, LLC	\$0	\$0	\$8,625	\$4,333
Cornell Iron Works, Inc.	\$0	\$0	\$49,050	\$612
Cover Crop Solutions, LLC	\$0	\$0	\$13,378	\$13,378
CoyoteLight, Inc.	\$0	\$0	\$1,003	\$0
Crestline Software, LLC	\$0	\$0	\$20,985	\$17,325
Crestwood Membranes, Inc.	\$0	\$0	\$69,615	\$0
CS Trucking, LLC	\$0	\$0	\$1,408	\$1,392
CSD Engineers, LLC	\$0	\$0	\$76,842	\$76,842
CSE Corporation	\$0	\$0	\$23,144	\$763
CSL Behring, LLC	\$0	\$0	\$202,318	\$0
Curry Rail Services, Inc.	\$0	\$0	\$30,651	\$30,651
Curry Supply Co.	\$0	\$0	\$70,154	\$70,154
CWE, Inc.	\$0	\$0	\$1,314	\$0
Daniel F Young, Inc.	\$0	\$0	\$2,235	\$2,235
Dart Container Corporation of Pennsylvania	\$0	\$0	\$134,663	\$0
Datagrove, Inc.	\$0	\$0	\$4,562	\$83
David Horn, LLC	\$0	\$0	\$15,867	\$0
David Michael Co., Inc.	\$0	\$0	\$909	\$909
DBI Holding, LLC	\$0	\$0	\$8,472	\$0
DecisionPro, Inc.	\$0	\$0	\$2,653	\$2,653
DecisionVis, LLC	\$0	\$0	\$3,824	\$3,824
Decora Industries, Inc. (t/a Data Display Systems)	\$0	\$0	\$13,593	\$13,593
Delmont Laboratories, Inc.	\$0	\$0	\$7,364	\$0
DelphX, LLC	\$0	\$0	\$28,914	\$28,914
Delta Health Technologies, LLC	\$0	\$0	\$66,957	\$66,957
Dew Fresh, Inc.	\$0	\$0	\$2,258	\$2,258
DGI-Menard, Inc. (d/b/a Menard)	\$0	\$0	\$198,537	\$91,857
Diamond Drinks, Inc.	\$0	\$0	\$6,516	\$0
Dick's Sporting Goods, Inc.	\$0	\$0	\$241,339	\$202,688
Die-Tech, Inc.	\$0	\$0	\$26,623	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Directworks, Inc.	\$0	\$0	\$51,835	\$0
Dixie Consumer Products, LLC	\$0	\$0	\$60,610	\$0
DmgCtrl	\$0	\$0	\$7,652	\$7,652
DNP Imagingcomm America Corporation F K	\$0	\$0	\$19,550	\$19,550
Document Solutions Group, Inc.	\$0	\$0	\$34,974	\$0
Domtar Corporation	\$0	\$0	\$345,780	\$345,780
Dontech, Inc.	\$0	\$0	\$35,918	\$11,621
Double H Plastics, Inc.	\$0	\$0	\$14,011	\$0
Draeger Medical Systems, Inc.	\$0	\$0	\$35,619	\$0
DynAccess Ltd.	\$0	\$0	\$705	\$705
Dynamic Concepts Manufacturing, LLC	\$0	\$0	\$6,800	\$6,800
Dynamic Manufacturing, LLC	\$0	\$0	\$5,743	\$0
E.K. Bare & Sons, Inc.	\$0	\$0	\$21,462	\$21,462
EAM-Mosca Corporation	\$0	\$0	\$3,012	\$3,012
East Coast Erosion Blankets, LLC (d/b/a East Coast Erosion Control)	\$0	\$0	\$4,997	\$0
Eastern Manufacturing, LLC	\$0	\$0	\$15,162	\$3,270
Easthill Specialty, Inc.	\$0	\$0	\$3,240	\$1,693
Ecore International, Inc.	\$0	\$0	\$12,790	\$0
Effort Enterprises, Inc.	\$0	\$0	\$25,482	\$13,682
Effort Foundry, Inc.	\$0	\$0	\$45,661	\$0
Eisai, Inc.	\$0	\$0	\$144,716	\$0
Electro Soft, Inc.	\$0	\$0	\$10,108	\$0
Ellwood Investment Corp.	\$0	\$0	\$275,277	\$75,997
Emphasys Technologies	\$0	\$0	\$37,318	\$25,258
Endo Pharmaceuticals, Inc.	\$0	\$0	\$1,170,852	\$0
EnerSys Advanced Systems, Inc.	\$0	\$0	\$84,610	\$42,578
Ensinger, Inc.	\$0	\$0	\$13,974	\$13,974
Entech Engineering, Inc.	\$0	\$0	\$65,169	\$65,169
Epiphany Solar Water Systems, LLC	\$0	\$0	\$63,914	\$51,346
Eriez Manufacturing Co.	\$0	\$0	\$21,198	\$14,873
Ernst Biomass, LLC	\$0	\$0	\$8,621	\$8,621
Ernst Conservation Seeds, Inc.	\$0	\$0	\$4,894	\$4,894
Essential Medical, Inc.	\$0	\$0	\$52,672	\$52,672
EthosGen, LLC	\$0	\$0	\$26,263	\$0
EUS Labs, Inc.	\$0	\$0	\$7,453	\$7,453
Euthanex Corp.	\$0	\$0	\$12,854	\$12,854
EZ Facility, Inc.	\$0	\$0	\$1,486	\$1,486
EzeFlow USA, Inc.	\$0	\$0	\$20,342	\$103
FacioMetrics, LLC	\$0	\$0	\$2,057	\$0
Fairmount Foundry, Inc.	\$0	\$0	\$18,307	\$12,253
Fidelity Flight Simulation Incorporated	\$0	\$0	\$277,232	\$276,694
FIS Data Systems, Inc. (f/k/a Sungard Data Systems, Inc.)	\$0	\$0	\$133,389	\$0
FITBIT, Inc.	\$0	\$0	\$1,943	\$1,943
Fleetwood Industries, Inc.	\$0	\$0	\$164,497	\$31,462
Flexcut Tool Co., Inc.	\$0	\$0	\$529	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Flexible Compensators, Inc. (t/a Flex Com)	\$0	\$0	\$8,731	\$8,731
Flexicon Corporation	\$0	\$0	\$127,199	\$71,136
Flight Systems Automotive Group, LLC	\$0	\$0	\$14,131	\$215
FMC Technologies, Inc.	\$0	\$0	\$99,007	\$5,928
Frewmill Die Crafts, Inc.	\$0	\$0	\$4,245	\$4,245
Frog Switch & Manufacturing Company, Inc.	\$0	\$0	\$4,669	\$0
Frontier Research Ltd.	\$0	\$0	\$5,999	\$5,999
Frontline Fabrics, Inc.	\$0	\$0	\$13,471	\$1,318
Frontline Technologies Group, LLC	\$0	\$0	\$140,002	\$0
Frontline Technologies, Inc.	\$0	\$0	\$48,318	\$0
FTS Holding Corporation	\$0	\$0	\$37,405	\$23,486
FusionMarx, Inc.	\$0	\$0	\$841	\$841
Future Foam, Inc.	\$0	\$0	\$2,094	\$2,094
G and B Specialties, Inc.	\$0	\$0	\$3,283	\$3,283
Gateway Ticketing Systems, Inc.	\$0	\$0	\$16,753	\$0
Gautier Steel, Ltd.	\$0	\$0	\$30,266	\$0
GE Betz, Inc.	\$0	\$0	\$8,497	\$0
GE Energy Power Conversion USA, Inc. (f/k/a Converteam, Inc.)	\$0	\$0	\$121,671	\$3,006
Genco Distribution System, Inc.	\$0	\$0	\$39,992	\$0
General Carbide Corporation	\$0	\$0	\$16,617	\$16,617
General Electric Company	\$0	\$0	\$2,478,966	\$33,432
General Nutrition Corporation	\$0	\$0	\$10,187	\$0
General Polymeric Corporation	\$0	\$0	\$21,425	\$21,425
Genossis, LLC	\$0	\$0	\$8,454	\$8,454
Georgeko Industries, Inc.	\$0	\$0	\$20,274	\$19,173
Georgia Pacific Corrugated, LLC	\$0	\$0	\$2,894	\$0
Giorgio Foods, Inc.	\$0	\$0	\$944	\$0
GlaxoSmithKline, LLC	\$0	\$0	\$2,269,398	\$598,726
Global Tellink Corporation	\$0	\$0	\$47,368	\$47,368
GlobalSubmit, Inc.	\$0	\$0	\$112,993	\$52,222
Go Carlson, Inc.	\$0	\$0	\$68,407	\$679
Go Green IT, Inc.	\$0	\$0	\$1,770	\$0
Gonnella Baking Company	\$0	\$0	\$9,511	\$9,511
Graham Packaging Holdings Company, LLP	\$0	\$0	\$5,355	\$0
Grantek Systems Integration Corp.	\$0	\$0	\$1,824	\$0
Gray Skies Blue, LLC	\$0	\$0	\$12,428	\$12,428
Graymont Dolime (OH), Inc.	\$0	\$0	\$678	\$678
Green Harvest One Corporation	\$0	\$0	\$4,667	\$0
Greener Days, LLC	\$0	\$0	\$5,573	\$5,270
Hadco Metal Trading Co., LLC	\$0	\$0	\$35,004	\$5,536
Harold Beck & Sons, Inc.	\$0	\$0	\$20,976	\$30
Henkel Corporation	\$0	\$0	\$247	\$247
Henwil Corporation	\$0	\$0	\$796	\$0
Hessian Co., Ltd.	\$0	\$0	\$14,306	\$0
Himes Diversified, LLC	\$0	\$0	\$14,818	\$11,224
Houghton International, Inc.	\$0	\$0	\$58,619	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Huntingdon Fiberglass Products, LLC	\$0	\$0	\$2,422	\$1,329
Huston, Inc.	\$0	\$0	\$28,048	\$28,048
Iagnosis, Inc.	\$0	\$0	\$26,152	\$10,850
IDL Worlwide, Inc.	\$0	\$0	\$68,029	\$0
Indeck Keystone Energy, LLC	\$0	\$0	\$7,102	\$7,102
Inno-Pak, LLC	\$0	\$0	\$3,207	\$243
Innovative Control Systems, Inc.	\$0	\$0	\$25,777	\$18,968
Innovative Office Products, LLC	\$0	\$0	\$19,388	\$0
Innovative Solutions and Support, Inc.	\$0	\$0	\$291,803	\$291,803
Innovesca, LLC	\$0	\$0	\$1,842	\$0
InnovForm Therapeutics, LLC	\$0	\$0	\$1,411	\$1,411
Instamour, Inc.	\$0	\$0	\$2,676	\$2,676
Institute for Musculoskeletal Science and Education, LLC	\$0	\$0	\$31,343	\$31,343
Institute of Consultative Bioethics	\$0	\$0	\$2,822	\$430
Interstate Building Materials, Inc.	\$0	\$0	\$623	\$34
Interstate Holding, Inc.	\$0	\$0	\$167,487	\$76,247
Intuitive Surgical Operations, Inc.	\$0	\$0	\$15,151	\$0
J&R Acquisition Corp.	\$0	\$0	\$9,569	\$9,569
J. Computing, Inc. (d/b/a Juola & Associates)	\$0	\$0	\$12,766	\$0
JK Tool, Inc. (f/k/a JK Tool & Die, Inc.)	\$0	\$0	\$17,871	\$29
JMG Systems, LLC	\$0	\$0	\$2,191	\$2,191
Johnstown Tube Laser, LLC (d/b/a Environmental Tank & Container)	\$0	\$0	\$21,282	\$21,282
Just Born, Inc.	\$0	\$0	\$7,870	\$0
K&H Technologies, Inc.	\$0	\$0	\$25,731	\$25,306
Kane Innovations, Inc.	\$0	\$0	\$5,211	\$0
Kenco Corporation	\$0	\$0	\$4,062	\$138
Kennametal, Inc.	\$0	\$0	\$530,042	\$530,042
Kermitool Acquisition Company, Inc.	\$0	\$0	\$17,443	\$10,762
Kiewit Engineering & Design Co.	\$0	\$0	\$547	\$0
K'NEX Brands, LP	\$0	\$0	\$104,128	\$0
Knopp Biosciences, LLC	\$0	\$0	\$284,753	\$284,753
Komatsu Mining Corp. (f/k/a Joy Global, Inc.)	\$0	\$0	\$302,022	\$0
Koppers, Inc.	\$0	\$0	\$13,382	\$0
Kovatch Mobile Equipment Corp.	\$0	\$0	\$4,571	\$4,012
Kurt J. Lesker Company	\$0	\$0	\$100,748	\$28,520
Lake Tool, Inc.	\$0	\$0	\$19,352	\$20
Laminar Flow, Inc.	\$0	\$0	\$18,754	\$11
Laminated Materials Corporation	\$0	\$0	\$191,584	\$57,606
Language Services Associates, Inc.	\$0	\$0	\$123,366	\$89,251
Laser Tool, Inc.	\$0	\$0	\$38,006	\$0
Latrobe Specialty Metals Company, LLC	\$0	\$0	\$10,775	\$0
Lebanon Tool Company, Inc.	\$0	\$0	\$25,960	\$17,504
Levan Machine Co., Inc.	\$0	\$0	\$769	\$611
LifeVest Health, Inc. (d/b/a Life.io)	\$0	\$0	\$6,517	\$0
Lighthouse Electric Company, Inc.	\$0	\$0	\$6,163	\$6,163

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Liquid X Printed Metals, Inc.	\$0	\$0	\$10,274	\$0
Lockheed Martin Corporation	\$0	\$0	\$2,942,111	\$2,942,111
Lockhouse Network, Inc.	\$0	\$0	\$7,165	\$0
Logimax, Inc.	\$0	\$0	\$3,993	\$3,993
Lokadot, LLC	\$0	\$0	\$6,056	\$6,056
Lozier Corporation	\$0	\$0	\$528	\$0
Ludo Mechanica, LLC	\$0	\$0	\$1,243	\$0
Lunchtime Software, LLC	\$0	\$0	\$150	\$0
Mack Trucks, Inc.	\$0	\$0	\$2,104,672	\$681,707
Magnatech International, Inc.	\$0	\$0	\$3,133	\$3,133
MainLineDelivery.com	\$0	\$0	\$9,676	\$9,676
Map Decisions, LLC	\$0	\$0	\$3,100	\$3,100
Mapquest PA, Inc.	\$0	\$0	\$19,559	\$0
Marketing G2, LLC	\$0	\$0	\$18,405	\$0
Mars Fishcare NA, Inc.	\$0	\$0	\$36,502	\$135
Martins Famous Pastry Shoppe, Inc.	\$0	\$0	\$36,169	\$3,221
Matreya, LLC	\$0	\$0	\$1,065	\$596
Max Levy Autograph, Inc.	\$0	\$0	\$33,796	\$2,946
Medtrics Lab, LLC	\$0	\$0	\$2,759	\$2,759
MeetBall, LLC	\$0	\$0	\$20,758	\$20,758
MGS, Inc.	\$0	\$0	\$10,182	\$6,658
Microsemi SoC Corporation	\$0	\$0	\$213,698	\$38,619
Millenium Torque & Tensioning, Inc. (Mr. Richard Cunningham)	\$0	\$0	\$3,669	\$0
Miller Welding and Machine Company, Inc.	\$0	\$0	\$53,772	\$53,772
Milnes Engineering, Inc.	\$0	\$0	\$9,667	\$9,667
Minus 100, LLC	\$0	\$0	\$647	\$0
Mosebach Manufacturing Company	\$0	\$0	\$14,777	\$340
Motionway, Inc. (d/b/a Upstage Video)	\$0	\$0	\$13,361	\$12,635
Mouse Trap Design, LLC	\$0	\$0	\$5,810	\$5,810
MSA Safety Incorporated	\$0	\$0	\$79,944	\$79,944
Multi-Plastics Extrusion, Inc.	\$0	\$0	\$13,699	\$13,699
My Network, LLC	\$0	\$0	\$23,657	\$23,657
Namsco Plastics Industries, Inc.	\$0	\$0	\$4,329	\$4,329
NASDAQ, Inc. (f/k/a The NASDAQ OMX Group, Inc.)	\$0	\$0	\$63,462	\$63,462
National Medical Services, Inc.	\$0	\$0	\$60,721	\$60,721
Navarro & Wright Consulting Engineers, Inc.	\$0	\$0	\$27,564	\$14,750
NetApp, Inc.	\$0	\$0	\$1,150,418	\$189,284
Netronome Systems, Inc.	\$0	\$0	\$451,339	\$5,216
Neuro-Genetics Institute, LLC	\$0	\$0	\$1,124	\$0
New Era Orthopaedics, LLC	\$0	\$0	\$57,025	\$57,025
New Way Machine Components, Inc.	\$0	\$0	\$87,027	\$87,027
Next Gauge, Inc.	\$0	\$0	\$5,546	\$0
NH Laboratories, Inc.	\$0	\$0	\$362	\$0
Noble Medical, LLC	\$0	\$0	\$25,704	\$1,447
Novira Therapeutics, Inc.	\$0	\$0	\$73,815	\$250

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
NRG Controls, Inc.	\$0	\$0	\$11,052	\$11,052
NTVI Fed, LLC	\$0	\$0	\$58,569	\$1,748
O.F. Zurn Company	\$0	\$0	\$11,787	\$3,609
Oberon, Inc.	\$0	\$0	\$59,961	\$16,880
Odessa Technologies, Inc.	\$0	\$0	\$8,531	\$8,531
Office Basics, Inc.	\$0	\$0	\$17,093	\$0
Ohm Labs, Inc.	\$0	\$0	\$9,180	\$0
Olympic Steel, Inc.	\$0	\$0	\$25,886	\$2,783
Omega Flex, Inc.	\$0	\$0	\$14,579	\$14,579
Omnyx, LLC	\$0	\$0	\$828,763	\$828,763
O'Neal Steel, Inc.	\$0	\$0	\$15,315	\$20
Optinose US, Inc.	\$0	\$0	\$160,012	\$0
Optofluidics, Inc.	\$0	\$0	\$18,596	\$18,596
Orion Security LSP, LLC	\$0	\$0	\$2,954	\$2,071
Orthofix, Inc.	\$0	\$0	\$6,236	\$6,236
Panelshop.com, LLC	\$0	\$0	\$2,161	\$0
Parker Hannifin Corporation	\$0	\$0	\$32,715	\$0
Parsec Media, Inc. (p/k/a Sled, Inc.)	\$0	\$0	\$1,143	\$1,143
Pasco Tool & Plastics, Inc.	\$0	\$0	\$36,978	\$23,612
Payroll Command, LLC	\$0	\$0	\$263	\$0
PDC Machines, Inc.	\$0	\$0	\$29,596	\$0
PDQ Industries, Inc.	\$0	\$0	\$3,287	\$0
Peacock Laboratories	\$0	\$0	\$1,456	\$1,157
Pelletron Corporation	\$0	\$0	\$4,735	\$4,735
Penn Manufacturing Industries, Inc.	\$0	\$0	\$132,457	\$7,694
Penn-Century, Inc.	\$0	\$0	\$1,789	\$1,188
Pennoni Associates, Inc.	\$0	\$0	\$4,423	\$4,423
Pennsylvania Electric Company	\$0	\$0	\$23,344	\$0
Pennsylvania Power Company	\$0	\$0	\$23,343	\$0
PennTecQ, Inc.	\$0	\$0	\$49,027	\$350
PeopleLinx, Inc.	\$0	\$0	\$19,920	\$19,920
Pfizer, Inc.	\$0	\$0	\$237,427	\$0
Phoenix Laser Solutions, LLC	\$0	\$0	\$77,293	\$77,293
Piezo Energy, Inc.	\$0	\$0	\$14,489	\$14,489
Pine Hill Manufacturing, LLC	\$0	\$0	\$116,396	\$25,794
Piramal Critical Care, Inc.	\$0	\$0	\$1,147	\$0
Pittsburgh Technologies Group, Inc.	\$0	\$0	\$3,133	\$0
Plastikos, Inc.	\$0	\$0	\$12,522	\$12,522
Polytek Development Corp. Co. MPE Case Lab, Inc.	\$0	\$0	\$10,628	\$560
Powerlytics, Inc.	\$0	\$0	\$15,921	\$15,921
PPG Industries, Inc.	\$0	\$0	\$1,997,276	\$1,764,139
Precision Medical Products, Inc.	\$0	\$0	\$39,750	\$39,750
Premier Automation, LLC	\$0	\$0	\$2,366	\$0
Prescient Weather Ltd.	\$0	\$0	\$2,700	\$2,700
PRL, Inc.	\$0	\$0	\$9,636	\$9,636
Proconex Acquisition, Inc.	\$0	\$0	\$20,693	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Production Systems Technologies, Inc.	\$0	\$0	\$6,078	\$6,078
Propelics, Inc.	\$0	\$0	\$25,879	\$0
ProSoft Technologies, Inc.	\$0	\$0	\$20,233	\$0
PSG Controls, Inc.	\$0	\$0	\$5,123	\$24
PSI Pumping Solutions, Inc.	\$0	\$0	\$37,443	\$37,443
Psychology Software Tools, Inc.	\$0	\$0	\$47,559	\$42,421
Puratec, LLC	\$0	\$0	\$16,956	\$16,956
Pure Fishing, Inc.	\$0	\$0	\$10,241	\$1,530
Pyrotecnico Fireworks, Inc.	\$0	\$0	\$24,224	\$19,386
QBC Diagnostics, Inc.	\$0	\$0	\$35,480	\$35,480
QuadraMed Affinity Corporation	\$0	\$0	\$3,328	\$90
Quaker Sales Corporation	\$0	\$0	\$23,118	\$0
Quantum Vortex, Inc.	\$0	\$0	\$42,226	\$42,226
Quintech Electronics Communications, Inc.	\$0	\$0	\$23,495	\$1,161
R.G. Steel Corp.	\$0	\$0	\$6,281	\$6,281
Rapid TPC, LLC	\$0	\$0	\$5,074	\$0
Ratex Business Solutions	\$0	\$0	\$61,951	\$40,369
Raven Industries, Inc.	\$0	\$0	\$12,944	\$11,054
Raytheon Company	\$0	\$0	\$25,733	\$0
Reaction Technologies, LLC	\$0	\$0	\$212	\$0
Rearick Tooling, Inc.	\$0	\$0	\$2,941	\$2,940
Reaxis, Inc.	\$0	\$0	\$6,758	\$473
Rebco, Inc.	\$0	\$0	\$5,058	\$142
Receivers Unlimited, LLC	\$0	\$0	\$3,350	\$3,350
Red Lion Controls, Inc.	\$0	\$0	\$1,644	\$1,644
Renmatix, Inc.	\$0	\$0	\$244,282	\$244,282
Resco Products, Inc.	\$0	\$0	\$4,427	\$673
Respironics, Inc.	\$0	\$0	\$597,709	\$0
Rex Medical, LP	\$0	\$0	\$420,971	\$0
Rhiza Labs, LLC	\$0	\$0	\$98,087	\$27,888
Rieker, Inc.	\$0	\$0	\$127,816	\$0
Right Start Factory, LLC	\$0	\$0	\$12,441	\$12,441
RightCare Solutions, Inc.	\$0	\$0	\$46,027	\$272
Riley Power, Inc.	\$0	\$0	\$148	\$0
Robinson Fans Holdings, Inc.	\$0	\$0	\$14,657	\$0
Robomatter, Inc.	\$0	\$0	\$14,683	\$0
Rosenberger of North America, LLC	\$0	\$0	\$17,338	\$8,905
Runabout Media Group, LLC	\$0	\$0	\$1,286	\$0
Rushabh Instruments, LLC	\$0	\$0	\$11,246	\$6,228
S&S Processing, Inc.	\$0	\$0	\$9,265	\$9,265
Sabic Innovative Plastics US, LLC	\$0	\$0	\$73,350	\$6,321
Saladax Biomedical, Inc	\$0	\$0	\$53,127	\$46,457
Salar, Inc.	\$0	\$0	\$1,248	\$1,248
Salimetrics, LLC	\$0	\$0	\$33,580	\$33,580
Salsgiver, Inc.	\$0	\$0	\$1,203	\$1,203
Samtec, Inc.	\$0	\$0	\$28,032	\$607
Sapa Extrusions, Inc.	\$0	\$0	\$124,834	\$876

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
Schindler Elevator Corporation	\$0	\$0	\$20,945	\$1,931
Schneider, Inc.	\$0	\$0	\$9,882	\$9,346
Scientific Systems, Inc.	\$0	\$0	\$11,935	\$9,322
Seakeeper, Inc.	\$0	\$0	\$172,157	\$3,972
Seegrid Holding Corporation	\$0	\$0	\$29,075	\$0
Selas Heat Technology Company, LLC	\$0	\$0	\$2,815	\$0
Seneca Resources Corporation	\$0	\$0	\$768,903	\$768,903
Sentinel Holding, Inc.	\$0	\$0	\$14,143	\$4,418
Seraphim Software, LLC	\$0	\$0	\$3,388	\$3,388
Shaffer Technologies, Inc.	\$0	\$0	\$604	\$0
Shire Holdings US, AG	\$0	\$0	\$1,844,877	\$0
Shire ViroPharma, Inc.	\$0	\$0	\$398,390	\$398,390
Shoefitr, Inc.	\$0	\$0	\$36,195	\$36,195
Shopagogo, LLC	\$0	\$0	\$2,966	\$0
Shorts Tool and Manufacturing, Inc.	\$0	\$0	\$13,246	\$336
Sicom Systems, Inc.	\$0	\$0	\$97,245	\$59,531
Siemens Industry, Inc.	\$0	\$0	\$14,312	\$0
Skaffl, LLC	\$0	\$0	\$4,821	\$0
SKF USA, Inc.	\$0	\$0	\$68,217	\$68,217
Smith Provision Co., Inc.	\$0	\$0	\$1,414	\$1,337
Soft Genetics, LLC	\$0	\$0	\$46,151	\$12,913
Solo Laboratories, Inc.	\$0	\$0	\$19,947	\$17,359
Somerset Welding and Steel	\$0	\$0	\$7,397	\$0
Southco, Inc.	\$0	\$0	\$21,636	\$948
SparkNET Technologies, LLC	\$0	\$0	\$4,285	\$4,285
Specialty Tires of America - PA	\$0	\$0	\$17,214	\$0
Standard Steel Holdings, Inc.	\$0	\$0	\$190,529	\$0
Starlite Diversified, Inc.	\$0	\$0	\$30,094	\$30,094
State of the Art, Inc.	\$0	\$0	\$776	\$776
STMicroelectronics, Inc.	\$0	\$0	\$4,225	\$0
Strategic Development Solutions, LLC	\$0	\$0	\$58,669	\$58,669
Structural Services, Inc.	\$0	\$0	\$15,550	\$575
Sunny Dell Foods, Inc.	\$0	\$0	\$12,411	\$12,411
SunStream Earth, LLC	\$0	\$0	\$1,037	\$0
Suntex International, Inc.	\$0	\$0	\$22,869	\$22,869
Supelco, Inc.	\$0	\$0	\$17,786	\$1,238
Superior Forge & Steel Corporation	\$0	\$0	\$80,594	\$56,804
Supreme Mid-Atlantic Corp.	\$0	\$0	\$1,655	\$0
Swank Construction Company, LLC	\$0	\$0	\$103,740	\$8,816
Sylvin Technologies, Inc.	\$0	\$0	\$2,592	\$0
Synapse Print Management, LLC	\$0	\$0	\$48,334	\$0
Synchronoss Technologies, Inc.	\$0	\$0	\$293,741	\$29,739
Talencea Corporation	\$0	\$0	\$8,916	\$8,916
Target Precision, LLC	\$0	\$0	\$61,871	\$17,434
TB Biosciences, Inc.	\$0	\$0	\$21,648	\$21,648
TB Woods Incorporated	\$0	\$0	\$7,078	\$0
TE Connectivity Corporation	\$0	\$0	\$134,634	\$0

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
TEK Construction Services, LLC	\$0	\$0	\$37,129	\$37,129
TELA Bio, Inc.	\$0	\$0	\$164,989	\$89,024
Telex Metals, LLC	\$0	\$0	\$12,939	\$0
Terremark North America, LLC	\$0	\$0	\$2,846	\$0
Terry Miles Bald Eagle Precision	\$0	\$0	\$3,616	\$3,454
TetraLogic Pharmaceuticals Corporation	\$0	\$0	\$329,294	\$181,634
Tex Visions, LLC	\$0	\$0	\$28,012	\$0
The Beistle Company	\$0	\$0	\$1,046	\$1,046
The Boeing Company	\$0	\$0	\$629,922	\$307,175
The Dial Corporation	\$0	\$0	\$9,033	\$0
The Drucker Company, Inc.	\$0	\$0	\$9,568	\$2,453
The Proud Company	\$0	\$0	\$73,414	\$71,902
TherimuneX Pharmaceuticals, Inc.	\$0	\$0	\$20,077	\$0
Thermal Engineering International USA	\$0	\$0	\$277	\$0
Thermal Solutions Products, LLC	\$0	\$0	\$15,001	\$15,001
Think Through Learning, Inc.	\$0	\$0	\$100,829	\$0
Thomas Erie, Inc.	\$0	\$0	\$905	\$905
TicketLeap, Inc.	\$0	\$0	\$31,164	\$0
Tiger Optics, Inc.	\$0	\$0	\$180	\$180
Timac Agro USA, Inc.	\$0	\$0	\$6,215	\$0
Tipton Medical & Diagnostic Center	\$0	\$0	\$12,868	\$12,868
Tiversa Holding, Inc.	\$0	\$0	\$5,628	\$5,628
TLS Corp. Telos Systems	\$0	\$0	\$28,112	\$0
Toll Bros., Inc.	\$0	\$0	\$92,636	\$0
Torchlight Technology Group, LLC	\$0	\$0	\$13,540	\$2,010
TowerStar Pets, LLC	\$0	\$0	\$16,334	\$16,334
Trapeze Software Group, Inc.	\$0	\$0	\$5,921	\$5,921
Trifecta Technologies, Inc.	\$0	\$0	\$261,906	\$261,906
Trigon Plastics, LLC	\$0	\$0	\$11,827	\$0
Trinity Industries, Inc.	\$0	\$0	\$2,645	\$0
Tri-State Technology Proefessionals, Inc.	\$0	\$0	\$0	\$0
Triumph Interiors, LLC	\$0	\$0	\$3,173	\$1,018
Triumvirate Environmental, Inc.	\$0	\$0	\$22,518	\$0
Turn 5, Inc.	\$0	\$0	\$160,978	\$6,727
Turning Edge Solutions, LLC	\$0	\$0	\$3,073	\$3,073
Union Carbide Corporation	\$0	\$0	\$12,516	\$0
United States Steel Corporation	\$0	\$0	\$499,119	\$0
Universal Refractories, Inc.	\$0	\$0	\$10,248	\$533
US Boiler Company, Inc.	\$0	\$0	\$83,299	\$3
USSC Acquisition Corporation	\$0	\$0	\$89,474	\$0
USSC, LLC	\$0	\$0	\$117,915	\$5,531
UTZ Quality Foods, Inc.	\$0	\$0	\$30,560	\$0
Velano Vascular, Inc.	\$0	\$0	\$34,576	\$34,576
Verizon Data Services, LLC	\$0	\$0	\$163,840	\$1,203
Vestige Enterprises, Inc.	\$0	\$0	\$1,773	\$0
Viddler, Inc.	\$0	\$0	\$11,194	\$11,194
VideoRay, LLC	\$0	\$0	\$81,384	\$69,790

<i>Taxpayer Name</i>	<i>2017 Credit Awarded</i>	<i>2017 Credit Utilized¹</i>	<i>2016 & 2015 Credit Awarded</i>	<i>2016 & 2015 Credit Utilized¹</i>
VMWARE, Inc.	\$0	\$0	\$32,300	\$30,171
W.L. Gore & Associates, Inc.	\$0	\$0	\$65,639	\$0
W.W. Patterson Company	\$0	\$0	\$6,596	\$5,557
Wabtec Corporation	\$0	\$0	\$70,049	\$0
Wacker Chemical Corporation	\$0	\$0	\$102,991	\$102,991
Walking Thumbs, LLC	\$0	\$0	\$118,824	\$108,875
Warfel Construction Company	\$0	\$0	\$1,704	\$1,704
Wavefront Research, Inc.	\$0	\$0	\$17,004	\$17,004
WavesinSolids, LLC	\$0	\$0	\$2,595	\$0
WebKite, Inc.	\$0	\$0	\$5,277	\$5,277
Wenzlau Engineering, Inc.	\$0	\$0	\$407	\$66
West Pharmaceutical Services, Inc. (PA)	\$0	\$0	\$11,192	\$11,192
Wheatland Tube, Inc. (f/k/a John Maneely Company)	\$0	\$0	\$295,230	\$0
Wheelhouse Analytics, LLC	\$0	\$0	\$137,034	\$137,034
Whitford Corporation	\$0	\$0	\$17,108	\$7,533
Whitley East, LLC	\$0	\$0	\$11,257	\$0
Wolf Technologies, LLC	\$0	\$0	\$8,099	\$21
Woodward, Inc.	\$0	\$0	\$560	\$0
Worldwide Refractories, Inc.	\$0	\$0	\$1,606	\$0
X-NAV Technologies, LLC	\$0	\$0	\$24,287	\$0
YCC Holdings, Inc.	\$0	\$0	\$3,802	\$0
Youbill, Inc.	\$0	\$0	\$33,113	\$47
Z3 Concepts	\$0	\$0	\$764	\$0
Zausner Foods Corp and Subsidiaries, Inc.	\$0	\$0	\$10,519	\$10,519
ZBand Video, Inc.	\$0	\$0	\$5,490	\$0
ZBand, Inc.	\$0	\$0	\$6,168	\$6,168
Zeigler Bros., Inc.	\$0	\$0	\$13,357	\$0
Zentis Beteiligungsverwaltungs GmbH & Co. KG	\$0	\$0	\$25,189	\$0
Zivtech, LLC	\$0	\$0	\$8,001	\$0
TOTAL	\$55,000,000	\$0	\$110,000,000	\$58,746,455

Footnote:

¹ "Utilized" means that the tax credit has been applied in full or partial payment of a tax liability according to the records of the Department. If no tax liability exists for the tax and period where the credit has been applied or if previous tax credits exceed the tax liability, the utilized amount is shown as zero. Until a tax year has been closed, it is possible that the tax credits indicated as being utilized may still be transferred, sold or assigned at the option of the taxpayer. Pass through credits and unused credits that were sold or assigned are also included as utilized.