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## **Greenfield Tap & Die: Economic and Historical Analysis**

**By**

**Rebecca Ducharme**

Greenfield, Massachusetts is located in Franklin County in the northwest part of the state. Founded in 1763, with 365 residents, the town grew quickly due to its strategic location at the junction of the Deerfield and Connecticut rivers.<sup>1</sup> Growth was fostered by these rivers that supplied the necessary water power for the various manufacturing plants that were founded in Greenfield. In 1872, Northampton resident John J. Grant moved to Greenfield with plans for a new die that would make a better screw.<sup>2</sup> This die was patented in 1871 as the “two pieced die” and revolutionized the way that dies were made. Prior to the creation of this invention, nuts and bolts were crushed into shape with little chance of a perfect fit. The new two pieced die cut the metal rather than compressing it to shape in the old manner. Grant’s two pieced die removed all imperfections and guaranteed a perfect fit every time. The two pieced die was in high demand in 1912 when Greenfield Tap and Die (GTD) was formed. Over the years GTD manufactured 25 different types of cutting tools, including gauges and drill bits.<sup>3</sup> This article will analyze the environmental and economic effects of the Greenfield Tap

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<sup>1</sup> Albert Weeks, “The History of Greenfield, From Its Founding to the Present,” website <http://users.crocker.com/greenfield/history.html>. March 30, 2004.

<sup>2</sup> Pamphlet, *Greenfield Tap and Die 100<sup>th</sup> Anniversary, United-Greenfield Division of TRW, Inc., 1872-1972: Beginning Our 2<sup>nd</sup> Century of Leadership*, 2.

<sup>3</sup> Adam Orth, “Say Good-bye to Plant 1,” *The Recorder*, October 10, 2003.

and Die Plant 1 site. To do so, the history of GTD's role in the community and later effects on environment will be considered. The benefits and costs of having the GTD company in Greenfield will also be analyzed.

Plant 1 of the GTD company is located on Meridian Street, next to the Green River. Route 5 is accessible from Meridian Street by a cement bridge built by GTD in 1917. The land slopes upward from the river and the plant is on a fairly level area cut into the hillside. Upstream from the plant there is a dam, constructed of wood and cement, that was built to harness water power for the mill. A canal runs under Plant 1 to a set of turbines that once generated power for the entire building. The canal, made of concrete and wood, has water control gates at either end where it meets the Green River.<sup>4</sup>

Plant 1 consists of thirteen buildings of various shapes and sizes located on approximately ten acres. The buildings have a total area of 145,000 square feet.<sup>5</sup> The oldest building on the site dates back to the late 1800s. The majority of the older buildings on the site were constructed of wooden timbers and bricks. The most modern building on the site was the five story cement mill, built in 1921. This mill was built in response to the demand for taps and dies. A tap is a rod with an external thread that cuts the internal threads in a nut, while a die is a plate with an internal thread that cuts the threads on a bolt. A federal grant provided the necessary funding for the construction of this building. The most distinguishing structure on the Plant 1 site was the smokestack, circa 1930, that rose high above the river. Twelve feet in diameter and 50 feet tall, the smokestack was the only structure on the site that was constructed of yellow clay tile.<sup>6</sup>

The century-old buildings and the smokestack made Plant 1 a distinctive and historic site. In 2000, the property was eligible for listing in the National Register of Historic Places.<sup>7</sup> The property was never

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<sup>4</sup> *Environmental Assessment for Reuse Feasibility of Former Greenfield Tap and Die Site* [henceforth referred to as ENSA], ENSA Environmental Services, Inc., and Leopold Berman & Associates, 8.

<sup>5</sup> "Brownfields Cleanup Revolving Loan Fund Pilot," website [www.epa.gov/brownfields/htm](http://www.epa.gov/brownfields/htm), May 1999.

<sup>6</sup> ENSA, 9.

<sup>7</sup> Town of Greenfield, *Requests for Redevelopment Proposals*, February 1, 2000.

listed due to the condition of the buildings and the indifference of the various owners.

On April 2, 1912 the Greenfield Tap and Die Corporation was organized by Frank O. Wells and Frederick H. Payne.<sup>8</sup> GTD was the result of the consolidation of Wiley & Russell Manufacturing and The Wells Brothers Company. The merger is believed to have been suggested by Payne, who at the time was a banker in Boston. In 1912 Payne owned a controlling portion of Wiley & Russell stock. Wells, the owner of the Wells Brothers Company, recognized the possibilities of combining the interests of the various tap and die companies in the area. Wells consented and became president of the company, with Payne as the vice president.<sup>9</sup>

Greenfield Tap and Die manufactured taps and dies, or the tools that are used to make nuts and bolts, using the water power and labor force of the town of Greenfield. The Green River provided water power in the early GTD years and generated electricity in the later years.

The steel that was necessary for the manufacture of taps and dies was transported to Greenfield via the local railroad. Like many of the other industries in Greenfield, the raw materials and finished products were transported from the railroad station to the plant by horse and wagon. Any able-bodied person who owned or could rent a horse and wagon would be sure to find employment at GTD as a teamster. This created a demand of wagons and livery stables in Greenfield. In the mid 1900s, the horse and wagon were replaced by trucks and motorized cars. Over the years many town residents who did not have defined expertise worked for GTD hauling materials. The easy entry into this position led to the formation of a spin-off service industry. Competition between haulers became fierce, with arguments and damage to property being common.<sup>10</sup> Having local labor forces haul the raw and finished products between the plant and the railroad station helped minimize costs for GTD. The money that was paid out in wages to the teamsters helped support the local economy.

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<sup>8</sup> *Old Wood Working Machines*, Manufacturers Index: GTD courtesy of Albert Shane, [www.owwm.com/MfgIndex/details.asp?ID=402](http://www.owwm.com/MfgIndex/details.asp?ID=402), May 6, 2004.

<sup>9</sup> *Greenfield Tap and Die 100th Anniversary*, 2.

<sup>10</sup> *The Helix*, August 1919, 3.

The labor force that worked at GTD came from the town of Greenfield and the surrounding communities. The United Electrical, Radio and Machine Workers of America Local 274 represented the GTD workers since 1936.<sup>11</sup> United Electrical strove to protect the wages and benefits of its members. Strikes were common at GTD, though the strikes and their results were never published in the company newspaper. Many of the GTD employees kept a part-time job in case a strike lasted longer than their savings. Apparently, this was not uncommon. One record strike at GTD lasted 17 weeks.<sup>12</sup>

Between October of 1912 until 1944 GTD acquired numerous companies, buying out many of the local competitors. When a local company was purchased, the name and products not related to the thread cutting industry were discontinued.<sup>13</sup> Only the thread cutting and tool related manufacturing of the purchased companies were kept in operation.

GTD hired a wide array of professionals. People such as machinists, boiler tenders, electricians and engineers found employment in the shop. The offices at GTD employed salesmen, researchers, employment managers and metallurgists. The office staff also maintained the typical number of employees including payroll, clerks, production department, secretaries and office boys.<sup>14</sup> Other GTD positions included cooks, firemen and laundry personnel.

Each individual employee enjoyed a wide array of benefits and good pay during their employment.<sup>15</sup> GTD offered its workers generous benefits in the form of insurance, retirement and advice. One of the most popular types of advice came from the housing department, a branch of the employment department. From the housing department one could get information on rooms for rent, housing for workers, homes for sale and advice on buying a home. This department was responsible for the

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<sup>11</sup> Peter Knowlton (president of District 2), Letter on May 6, 2004, President of District 2, United Electrical, Radio and Machine Workers of America.

<sup>12</sup> Ibid.

<sup>13</sup> *Old Wood Working Machines* website.

<sup>14</sup> *The Helix*, March 1919, 3.

<sup>15</sup> *The Helix*, September 1919, 5.

purchase, renovation and upkeep of GTD-owned homes that were rented to employees.<sup>16</sup> The housing department willingly gave information on savings plans and retirement options. It also had housing plans available for workers who were interested in building their own home.

Workers were encouraged to save money and to try to better their standard of living. Financial counseling was available at no cost from the housing department to employees. A previous employee noted that GTD had “the best wages and benefits in the country.”<sup>17</sup> It was not uncommon for people to work for GTD for 30 years or more. One worker had an exceptionally long history with GTD, working there for 66 years. Often generations of families worked for the company, on the same or different shifts. Some couples were lucky enough to meet at GTD and then continue working there after getting married. It was well known that GTD was just “a great place to work.”<sup>18</sup>

With a firm as large as GTD was, it became increasingly difficult to keep all of the workers involved and informed of GTD’s activities. To resolve this problem and to encourage company loyalty, the office staff at GTD began a company newspaper. The main goal of this paper was to promote harmony between the GTD workers and staff, hopefully to reduce the amount of misunderstandings in the company and to increase company loyalty. In the early years the journal was printed in booklet form and was titled *The Helix*, since the path of a perfect screw thread is a true helix. Published monthly beginning in 1918, this catalogue served to keep the GTD workers informed on their company’s activities and upcoming events. Each month the cover showed several pictures of various parts of the GTD plants or had cartoons depicting scenes in and around GTD. A professional photographer named Everett M. Howard was hired as a full-time employee.<sup>19</sup> His daily duties required that he walk around the GTD plants and offices, taking pictures of the workers and buildings. One of the *Helix* magazines, published in March of 1919,

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<sup>16</sup> *The Helix*, October 1919, 6.

<sup>17</sup> Peter Munther, “Cutbacks Make Greenfield Tap and Die a Shadow of Its Former Self; Workers Recall Heady Days of Wartime Production,” *The Recorder*, April 10, 1992.

<sup>18</sup> Orth, “Say Good-bye...”

<sup>19</sup> *The Helix*, January 1919, 3.

tells of the GTD benefit dance held by the GTD Social and Recreation Committee. Other articles include notes from each department telling of births and deaths, the list of past GTD employees who were in the service and the news of the office bowling league. It even tells of the gifts given by departments to people who were getting married. *The Helix* had a special section dedicated to the poetry and drawings of its workers. *The Helix* clearly demonstrated GTD's strong effect on the Greenfield community.

Besides providing updates and highlights of the activities of the GTD workers, the paper also helped reduce plant rivalries. When the workers of a company identify with their fellow-workers and the people in the administration, the overall number of problems decrease. The newspaper served to inform the workers of the involvement of the GTD company in the community. Such involvement included radio programs, movies, educational events and an orchestra that performed at open air concerts. Other GTD sponsored events included picnics, parades, competitions and carnivals. Every year GTD hosted a field day as a day of merriment and relaxation for all of the workers. On the field day all of the GTD plants shut down at eleven o'clock to allow the workers time to head home and clean up. At noon the parade began, with floats designed by each department. The parade passed through town and ended at the attractive Greenfield fairgrounds by one o'clock. The rest of the day was filled with various types of activities to entertain and involve all of the workers and their families.

The GTD company prided itself in its ability to provide for its workers both in business and pleasure. Since GTD absorbed the cost of all of the services offered, it was able to render the services at no cost to its employees. GTD offered apprentice school to anyone interested in entering the machine industry. All GTD workers were welcome to attend library educational classes, which were designed to help employees improve their lives and further their education. Leisure time in Greenfield could be spent on the GTD baseball, bowling or tennis teams. Other activities that were common among workers included the Fish and Game Club and the Social Club. The company encouraged and endorsed the various clubs that were formed by the employees. Promoted by the company executives, the clubs could meet on the various GTD properties and were allowed free use of the GTD facilities.

The GTD employees organized an insurance board titled the GTD Benefit Association. In 1919, each worker who wished to be a member

paid dues of \$2 per year. The GTD Benefit Association gave sick or disabled workers pay of \$7 per week.<sup>20</sup> Death benefits were paid to any living relatives. The board of directors were annually elected by the members and all GTD employees were encouraged to run for election. The GTD Benefit Association was a success year after year.

The GTD employees had the opportunity to influence the management of the company. Employees could be elected to one of the governmental positions of the Associates of the Legislature. For every 20 workers, one representative was elected by the GTD employees. Each plant had its own legislature that met on a regular basis, and the representatives submitted proposals or voiced concerns to the company President and Board of Directors. Modeled after the United States government, the Associates of Legislature was designed to allow for communication between the employees and the executives.

In 1917, more than 1/3 of GTD's taps and dies were exported to foreign countries.<sup>21</sup> A plant in Galt, Ontario, known as the Wells Brothers Company, Limited, was controlled by GTD and served the far north. Sales branches flourished in New York and Chicago, and sales representatives traveled to domestic and foreign cities on regular schedules to take orders for GTD. Prior to the First World War, GTD was an up and coming company that was quickly conquering its competitors. Wells recognized that there would soon be "a lack of sufficient gages for the production of munitions."<sup>22</sup> With the help of Frederick Payne, then Under-Secretary of War, the matter was presented to the proper governmental authorities. This foresight later helped GTD get the majority of available military contracts during the war. Manufacturing for the government kept the company in business during the hard times and encouraged the idea of patriotism in the town of Greenfield. As World War I caused an increase in demand for taps and dies, GTD grew rapidly. At the close of the war, GTD continued to operate smoothly.

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<sup>20</sup> *The Helix*, October 1919, 5.

<sup>21</sup> *1872-1918 Issued by Greenfield Tap and Die, Greenfield MA, On the Occasion of the Formal Opening of the Administration Building, March 5, 1918* (Hartford, CT: A Manternach Product, 1918), 11.

<sup>22</sup> *Ibid.*

The erection of the administration building on Sanderson Street, which later became a part of Plant 2, represented the consolidation of many small local companies into one large one. Included in this 1918 construction was an employee's building. In this building a modern kitchen was used to prepare three meals a day for hundreds of people. It was noted that the kitchen served "to furnish nourishing meals at cost" for all of the GTD workers.<sup>23</sup> The hot meals were delivered by truck to the other nearby plants, including Plant 1. By 1920, all of the plants had dining rooms for the staff and employees. Card tables and a piano were provided in all of the dining rooms, for the recreation of the workers during lunch. Oftentimes dancing and other competitions were held during the lunch hour.

GTD offered its workers recognition for faithful years of service. The Old Guard was a division of GTD that honored employees who had ten or more years of consecutive service. The Junior Guard was the division that honored employees who had five to ten years of service. Each year in January, the names of the employees who earned the position of being in the Old Guard and the Junior Guard were published in *The Helix*.<sup>24</sup> Short biographies of members of the Old Guard were featured in the company magazine every month.

In 1929, when the stock market crashed, the effect on GTD and the town of Greenfield was less than in most places. It is thought that Greenfield was less affected by the crash due to its diversified agricultural and industrial base.<sup>25</sup> A unique market niche due to the skilled workers and the worldwide market of GTD kept the company in business during the Great Depression. GTD continued production for the slowing market and managed to stay in business. By 1938, GTD had fully recovered from the hard economic times and was in full swing, preparing for future challenges.

It can easily be said that the Second World War era was the peak of GTD manufacturing.<sup>26</sup> During the war, GTD received funding from the

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<sup>23</sup> Ibid., 3.

<sup>24</sup> *The Helix*, December 1919.

<sup>25</sup> Weeks, website.

<sup>26</sup> Ibid.

federal government to assist in operational expenses.<sup>27</sup> The United States government hoped to standardize the threads of nuts and bolts across the nation.<sup>28</sup> The government therefore supported the work of GTD and other tap and die manufacturers that made standardized products. In 1940, GTD received one million dollars to build Plant 2 on Sanderson Street.<sup>29</sup> It was during this time that GTD could be recognized as a significant contributor to the local economy. GTD employed over 4000 people on 3 shifts and was the largest firm of its type in Greenfield.<sup>30</sup> GTD had 2000 new employees in training to work extra shifts and to replace the workers going into the service.<sup>31</sup> This ensured that GTD manufacturing would not fall behind due to the large number of workers going into the service. GTD production worked seven days a week to keep up with the United States Department of Defense orders. GTD stressed the high quality of productivity and the accuracy of its gauges to its workers. The company's million dollar pay roll had a positive influence on the Greenfield economy.

At the beginning of World War II, *The Helix* was renamed *Leads and Angles* and was no longer printed in booklet format. The company paper took on a new look as a crisp newspaper with many photographs, and it was used to promote patriotism and to cheer workers on the home front. Each edition featured pictures and news of GTD workers who were enlisted. Jokes and cartoons were included to raise spirits. On the cover of the 1942 *Leads and Angles*, for example, the headline reads, "Mussolini shot down! Plant No. 1 scores a direct hit!" This refers to Plant 1 exceeding the weekly production standards that were set up by the GTD War Production Drive Committee. The slogan at Plant 1 was "the front-line trenches begin at your benches." This particular

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<sup>27</sup> Heritage Research Center, LTD., "Selected Government Funded WWII Industries," website [www.heritageresearch.com/M.htm](http://www.heritageresearch.com/M.htm), January 26, 2004.

<sup>28</sup> *1872-1918 Issued by Greenfield Tap and Die...*

<sup>29</sup> Orth, "Say Good-bye..."

<sup>30</sup> Stephanie Kraft, "Star Wars may Close Greenfield Plant, *The Valley Advocate*, April 28, 1986.

<sup>31</sup> Munther, *The Recorder*, 1992.

newspaper notes the reopening of Plant 4, as the demand for taps continued to increase during the war.

During the war, GTD set aside designated areas for victory gardens.<sup>32</sup> Workers received seeds and encouragement to enter the country fair-style produce shows. The vegetables that were harvested from the gardens were the property of the employees who tended them. These extra vegetables helped ensure that GTD families were receiving sufficient nutrients during hard times. All GTD workers were therefore encouraged to work in their gardens and enter their yields in the company-wide competition. At the end of the summer, GTD gave awards for the largest and best vegetables. Photographs of the winning vegetables were included in the newspaper. The “E Award,” an excellence award given by the federal government to plants with exceptional zeal in production for the war needs, was a high honor. GTD earned this award and proudly flew the flag that was given to the company in recognition. This award helped GTD morale to stay strong and rewarded the workers for their dedicated service. The peak of GTD manufacturing during the war years earned Greenfield the nickname “Tap Town.”

GTD remained busy after the war, filling orders for the Detroit auto manufacturers. When the previously growing auto industry began to decline, the production at GTD likewise followed.<sup>33</sup> When the demand for products by car manufacturers began to dwindle, GTD had to start downsizing. Further cutbacks were taken with the purchase of new automated machinery. These machines lowered the cost of production and reduced the time necessary for manufacturing. One of the new machines could do the work of four workers.

By the early 1950s, GTD and Greenfield had slowly worked out of the recession and employment rose slightly. In 1951, the Greenfield Foundation, Inc. was founded for charitable and educational purposes. From 1953 to 1972, the Greenfield Foundation provided 106 scholarships to the children of GTD workers.<sup>34</sup> Many other GTD

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<sup>32</sup> *Leads and Angles*, Greenfield Tap and Die Corporation, Vol. 1, No. 2, June 1942, 3.

<sup>33</sup> Munther, *The Recorder*, 1992.

<sup>34</sup> *Greenfield Tap and Die 100<sup>th</sup> Anniversary*.

functions continued in operation, such as the GTD Benefit Association and the Legislature. The GTD stockholders voted in favor of the February 11, 1958 merger with the United Tool and Drill Corporation of Cleveland, Ohio.<sup>35</sup> With the addition of GTD, United Tool and Drill Corporation became the world's largest producer of cutting and hand service tools.<sup>36</sup> As a subdivision of the United-Greenfield Corporation, the former GTD plants continued to manufacture precision taps and dies.

On September 14, 1963 United-Greenfield merged with the Thompson Ramo Wooldridge Corporation, or TRW, a tool manufacturing company, changing the market that GTD manufactured for.<sup>37</sup> GTD began producing for the aerospace and advanced technology equipment market. From 1968 to 1986, TRW modernized and attempted to restore the once booming industry in Greenfield. Unfortunately, the war-time demand for taps and dies was higher than the demand during peace time. In 1996, TRW employed 400 workers, much lower than the thousands of workers employed during the Second World War.<sup>38</sup> TRW continued to decline in business and lose workers. TRW did not succeed in reviving the tap and die business in Greenfield to the levels that GTD had previously attained.<sup>39</sup> Though TRW was not as prosperous as GTD had once been, it still significantly contributed to the Greenfield economy with a \$10 million dollar payroll.<sup>40</sup>

In 1986, Samuel Fox purchased GTD and promised the workers high pay. He proceeded to cut pay and the benefits an average of \$4 per hour.<sup>41</sup> Workers and their families left their jobs at GTD and their homes in Greenfield in search of better employment elsewhere. Undaunted, Fox

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<sup>35</sup> *Old Wood Working Machines* website.

<sup>36</sup> *Greenfield Tap and Die 100<sup>th</sup> Anniversary*.

<sup>37</sup> *Ibid.*

<sup>38</sup> Kraft, "Star Wars..."

<sup>39</sup> "Brownfields Supplemental Assistance Fact Sheet," website [www.epa.gov/brownfields/htm](http://www.epa.gov/brownfields/htm), March 2000.

<sup>40</sup> Kraft, "Star Wars..."

<sup>41</sup> Orth, "Say Good-bye..."

focused his efforts on updating and modernizing the manufacturing processes at GTD. The investments that Fox put into the company kept it from being shut down entirely.<sup>42</sup> The company yielded a small profit for six years before being sold again.

Kennametal Industrial Products Group bought GTD from Fox and sold Plant 1 in 1992, due to consolidation.<sup>43</sup> Today Kennametal continues to manufacture taps and dies in Greenfield. In 2002, there were 110 people working at the old GTD Plant 2. Kennametal employs 12,000 people working worldwide in 31 factories.<sup>44</sup>

As GTD gradually shut down Plant 1, the costs for the residents of the town and many consumers increased. Unemployment rates in Greenfield drastically increased in the late 1960s. The manufacture of precision machined tools spring up in countries with lower employment and production costs. Countries around the world, such as China, Germany and Indonesia, allowed company owners to minimize costs and maximize profits. In Greenfield, many people sought employment in other cities and eventually moved away. The cutbacks at GTD and other manufacturing companies began to take its toll on Greenfield's economy. The overall population decline led to a narrow tax base that resulted in higher taxes for many companies. As a result, many manufacturers and retail shops closed or moved to other towns. In 1979, the Franklin County Community Development Corporation (FCCDC) was started in response to the recession of Greenfield's economy. FCCDC's mission is to "support and stimulate the economy."<sup>45</sup> As a community-oriented organization, it hopes to "expand the opportunities for low and moderate income residents."<sup>46</sup>

The buildings and land that were once known as Plant 1 were sold to eight different owners after 1992. The last owner of the property was the town of Greenfield, which took the site due to the non-payment of

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<sup>42</sup> Ibid.

<sup>43</sup> Munther, *The Recorder*.

<sup>44</sup> Orth, "Say Good-bye..."

<sup>45</sup> "Franklin County Community Development Corporation History," website [www.ruralisc.org/fccdc.htm](http://www.ruralisc.org/fccdc.htm), 2001.

<sup>46</sup> Ibid.

taxes in 1997. When the property was obtained, the buildings were in need of renovation. The settling of walls, cracking of floors, and roof damage are just a few of the problems at the GTD site. The town estimated the cost of renovating the existing buildings and found that the cost of refurbishing them would be far greater than demolishing them and putting in modern buildings.<sup>47</sup> It was found that all of the electrical systems and the plumbing were outdated and would have to be replaced. Furthermore, pollution was identified on the GTD site in various places.<sup>48</sup> These pollutants came from the diverse manufacturing processes that were used on this site and included degreasing solvents, heating oil, diesel fuel and gasoline.<sup>49</sup> Cutting oils containing metals such as barium, chromium and lead were identified on the site as being remnants of the GTD metal cutting process. Other pollutants on the site included volatile petroleum hydrocarbons, extractable petroleum hydrocarbons and polynuclear aromatic hydrocarbons.<sup>50</sup> Underground there were six storage sites that were used to hold wastes. These sites included a 40,000 gallon, a 15,000 gallon and a 10,000 gallon fuel tanks. The last recorded time that these storage sites were used was in 1986, and since that time the tanks had been neglected. Three of the main buildings, built in the early 1800s, had cement pits to store wastes in. Prior to the knowledge of the effects of manufacturing wastes, tap and die manufacturers simply collected the waste in one general area. In the early years at GTD, the wastes were collected in these uncovered cement pits that were recessed in the floor. Many of these pits had unknowingly cracked and the contents had accidentally leaked into the soil.

Located behind the main complex and farthest from the Green River was a building used to store and filter oil. This building was connected to the manufacturing building by a number of pipes.<sup>51</sup> Through these

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<sup>47</sup> Interview with Nancy Goff, Greenfield Office of Planning and Community Development, April 24, 2004.

<sup>48</sup> "Brownfields Assessment Pilot Fact Sheet," website [www.epa.gov/brownfields/html-doc/greenfield.htm](http://www.epa.gov/brownfields/html-doc/greenfield.htm), April 1997.

<sup>49</sup> ENSA, 10.

<sup>50</sup> Goff interview, 2004.

<sup>51</sup> ENSA, 8.

pipes dirty and filtered oil flowed to and from the machines. This efficient system allowed for the reuse of the same oil for an extended period of time. The oil filtration building became an area of concern as cutting oil releases were reported.<sup>52</sup>

On the Plant 1 site there were a number of transformers used during the manufacturing process. These electrical transformers may have been used to power the extensive machinery and lights in the mill. In 1995, there was a report of a release of electrical transformer fluid.<sup>53</sup> The release was reported to be near the oil filtration building.<sup>54</sup> The transformers on the site are also the cause of the polychlorinated biphenyls on the site.

On December 12, 2001, the Massachusetts Department of Environmental Protection and the Attorney General finalized an agreement with the past and present owners of the GTD Plant 1 site to redevelop the abandoned property.<sup>55</sup> In accordance with Greenfield Industries Inc., TRW Inc., and the Town of Greenfield, the liability for the site was resolved to the Commonwealth of Massachusetts for past costs and fees in exchange for liability protection for releases of oil and hazardous materials at the site. This agreement was to ensure remediation of the site with no or little liability to past owners. The three parties previously mentioned “agreed to complete clean up at the site.”<sup>56</sup>

Environmental Resource Management reports that during the cleanup of the site, solids were found in the canal. This led to the filling of the canal after the clean up, in order to prevent possible injury and lawsuits.<sup>57</sup> The five pollution areas of known concern for this project were the oil tanks underground, the oil filtration building due to the

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<sup>52</sup> *Clean Up Report*, Environmental Resources Management, June 5, 2003.

<sup>53</sup> Orth, “Say Good-bye...”

<sup>54</sup> *Clean Up Report*.

<sup>55</sup> “AG Reilly, DEP Commissioner Liss Sign Agreement to Clean Up and Redevelop Former Tool Factory in Greenfield,” website [www.ago.state.ma.us/txt/greenfield.htm](http://www.ago.state.ma.us/txt/greenfield.htm), December 12, 2001.

<sup>56</sup> *Ibid.*

<sup>57</sup> *Clean Up Report*.

cutting oil release, concrete pits, the transformers in Building 34, and the transformers in the oil filtration building.<sup>58</sup> Tighe and Bond, Inc. noted that the pollution clean up would have to occur before the demolition of the buildings was complete.<sup>59</sup> The demolition of the buildings was complicated due to the location of the Green River next to the site. To this date there have not been any reported ill effects of the GTD site upon the Green River watershed.

The Greenfield Historical Society wanted to save the boiler buildings and the smokestack as a historic structure, but when it was found that the buildings contained asbestos they were removed. It had been planned that the yellow brick smokestack was to remain standing but at the last minute the decision was made to demolish it, as it would be exposed to the elements with no structural support and would be a hazard.

In August 2002, the actual demolition of the site began. The clean-up of the pollution on the site had occurred in the previous months. Many of the retired workers and local people came to watch the buildings come down. Once the site had been cleared, the cement flood wall was cut down to the level of the site. When the demolition crew had completed their work, all that remained of Plant 1 was an empty lot.

The town of Greenfield received one of the Massachusetts Attorney General's first Municipal Brownfields Grant.<sup>60</sup> The purpose of the grant is to assist communities in redeveloping properties that have been contaminated through past manufacturing processes. Greenfield received \$36,300 in April 2002 to "conduct comprehensive redevelopment planning" for the GTD Plant 1 site.<sup>61</sup> Prior to receiving this grant, Greenfield received \$100,000 from the Community Development Block

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<sup>58</sup> *Redevelopment Plan, February 2002*, Vanasse, Hangen and Brustlin, Inc., 2002.

<sup>59</sup> Tighe and Bond press release on July 19: "Tighe & Bond Demolition Services Help Owners Clean Up and Move On," website [www.tigheandbond.com](http://www.tigheandbond.com), 2002.

<sup>60</sup> "AG Reilly Awards Brownfields Grant to Greenfield, Ashfield and Montague," April 23, 2002, website [www.ago.state.ma.us/press\\_rel/greenfield2.asp](http://www.ago.state.ma.us/press_rel/greenfield2.asp).

<sup>61</sup> *Ibid.*

Grant to create a plan for redevelopment or demolition of the old GTD site.<sup>62</sup> The town was able to receive many grants for brownfields and other remediation issues from various sources to help pay for the costs of cleaning the old GTD site.<sup>63</sup>

The environmental costs of this site were imposed on others as the polluters, in this case the owners of the GTD company, are deceased. Through the Attorney General's office the Kennametal and TRW companies did take care of some of the clean up costs. There is no record of individual citizens taking on monetary clean up costs for the contamination of this site. Most of the clean up funding came from grants from the state. The costs imposed on the economy of Greenfield are not as easily taken care of. After the shut down of GTD, Greenfield has had a generally unfavorable economy, which is slowly being revived under the strong combined effort of the town and its citizens. One of the best possible ways to help this economy might be to attract businesses and manufacturing companies to Greenfield.

As of February, 2000, the town put out a request for bids from developers for the site. The old GTD site is described as ten acres on three parcels of land, assessed by the town of Greenfield at a value of \$99,300.<sup>64</sup> The property is zoned general commercial and is located one half mile from the downtown Greenfield business district. The goal of the redevelopment of the site is to revitalize the neighborhood, enhance the downtown area and provide industrial space. The consulting team of Vanasse, Hangen and Brustlin, along with a town-appointed advisory committee, are considering possible plans for the reconstruction of the site.<sup>65</sup> Originally there were plans for a recreational park and office space.<sup>66</sup> The latest plan includes office space and housing, as there is a surprisingly competitive housing market in Greenfield.<sup>67</sup> Unfortunately, the housing that would be put in would be very expensive to erect,

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<sup>62</sup> "Community Development Block Grants," website [www.townofgreenfield.org/Planning/grant/CDBG2.html](http://www.townofgreenfield.org/Planning/grant/CDBG2.html), 2004.

<sup>63</sup> [www.epa.gov/brownfields/html](http://www.epa.gov/brownfields/html).

<sup>64</sup> Town of Greenfield, *Requests...*

<sup>65</sup> "Community Development Block Grants," 2004.

<sup>66</sup> *Redevelopment Plan...*, Vanasse, Hangen and Brustlin, Inc.

<sup>67</sup> Goff interview, 2004.

thereby increasing the cost of living. There has not yet been an agreement made for the reconstruction of the site. The Planning and Community Development Department in Greenfield hopes to decide on a final construction plan within the next year for the site.

Ideally the reconstruction of the Plant 1 site will provide a glimpse of the extensive history of Greenfield Tap and Die and other plants that existed there. On this site for over 150 years Americans proudly manufactured taps and dies for the good of their country. The pride that the employees took in their work and the levels of production achieved are remarkable.