

**United States Environmental Protection Agency
Region III
Corrective Action Program**

**Environmental Indicator Inspection Report
For**

**World Resources Company
170 Walnut Lane
Pottsville, Pennsylvania 17901**

EPA ID No. PAD981038227

Prepared By

Baker

August 2012

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RCRA SITE INSPECTION REPORT

Purpose: To gather relevant information from World Resources Company (WRC or facility), in order to determine whether human exposures and groundwater releases are controlled, as per Environmental Indicator (EI) Determination forms.

Documentation Review: Prior to the site visit, Michael Baker Jr., Inc. (Baker) personnel conducted a records review of the Pennsylvania Department of Environmental Protection (PADEP) North East Regional Office and the United States Environmental Protection Agency (USEPA) Region III Philadelphia Office files. Subsequent to the site visit, the facility provided additional facility documentation.

Attendees at Site Inspection:

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Dale Schneck	WRC	570-622-4747	dschneck@wrcusa.net
Tracey McGurk	PADEP	570-826-2076	tmcgurk@state.pa.us
Sam Warmate	PADEP	570-826-2022	nswarmate@pa.gov
Tina Entenman	Baker	717-221-2061	ntenman@mbakercorp.com

Meeting Summary: A meeting was held at the facility with the attendees noted above on June 30, 2011. Ms. Entenman presented the facility with information regarding USEPA Region III's corrective action process, the EI Assessment Program and the legislation driving this program. Under this investigation, USEPA Region III is focusing on two interim EIs to evaluate whether any unacceptable risk to human health and/or the environment is ongoing at each priority facility. The two indicators are determining if human exposures are controlled and groundwater releases are controlled. Prior to and during the site inspection, outstanding issues and discrepancies encountered in the file review summary were discussed.

The site visit continued with an overview of areas to be observed and a tour of the facility. Photographs of the facility are presented in Appendix A: Photographs.

A. Location and Operational History of the Facility, Including all Wastes Generated at the Facility and their Management

Site Layout and Background Information

Site Layout

The WRC facility, a recycler of metal bearing sludges generated primarily by the metal finishing and electroplating industries, is located in Pottsville, Norwegian Township, Schuylkill County, Pennsylvania. The approximately 9-acre site is situated on two parcels of land among mixed commercial and undeveloped wooded property along Walnut Lane (Appendix B: Figure 1 - Facility Location Map).

The facility consists of several buildings (processing [containment building or process facility], laboratory, offices, storage, and supply), parking areas, and a truck turning area (Appendix B: Figure 2 - Facility Layout). The facility processing building, also known as the containment building, is approximately 28,000 square feet and houses the production/process areas and associated equipment that include a wastewater treatment system. The on-site laboratory, located adjacent to the north side of the containment building, performs analysis of waste material prior to receipt of the materials. The administrative and office buildings are located adjacent to the northeast corner of the processing building and contain a reception area, administrative offices, and conference rooms. The storage building is located on the east side of the parking area. The supply building is located adjacent to the southeast corner of the processing building and contains uniforms and general supplies.

The truck parking area extends outside of the bermed receiving area. The bermed parking and receiving areas are washed down with water periodically during the day and the wash water is sent through the on-site wastewater treatment system for process before being delivered to the Minersville Sewage Treatment Plant (MSTP). Other than the buildings and parking lot, the majority of the property is unused land that is forested or covered by grass. The facility is situated on the northeast quadrant of the property and is bordered by Walnut Lane to the north.

Surrounding land uses include mixed commercial and residential neighborhoods and undeveloped land. Two commercial buildings are located east and northeast of the facility. The building to the east-northeast is occupied by MBC contract manufacturing/warehousing. The building to the

northeast is occupied by the Republican Herald newspaper operations. Residential areas are located further east (across Township Highway 626A) and southeast of the facility. Residential areas are also located to the north, northwest, and southwest beyond the undeveloped forested land. Commercial/industrial properties and a coal refuse reprocessing facility are located approximately three quarters of a mile southwest of the facility in the town of Mar Lin.

Operations

Laboratory - The on-site laboratory performs analysis of waste material prior to receipt of the materials. If the waste materials can be accepted, then a trial shipment is delivered to the facility. The laboratory manager inspects each shipment for conformance with its waste analysis plan (WAP). Any waste materials that deviate from the WAP are not accepted and are sent directly back to the generator. Liquids generated in the laboratory during sample preparation and analyses are discarded via the sinks. The sinks drain to a 30-gallon sump and then to the on-site wastewater treatment system.

Fumes generated in the laboratory hoods are sent through either the wet scrubber or the activated carbon scrubber and then to the atmosphere under the State Only Operating Permit (SOOP). The on-site laboratory analyzes the quarterly groundwater samples they collect from the monitoring wells. They also analyzed random soil samples collected at the facility.

Waste Receiving - The waste receiving area consists of a container unloading area and three receiving, inspection and sampling receptacles (RISRs). A tire wash station is also located in the receiving area within the bermed asphalt truck parking area. It consists of rows of six-inch high concrete berms covered by steel grates. The rows are sloped toward a catch basin that drains to a concrete sump. The water captured in the sump is pumped back to the on-site wastewater treatment system via an underground pipeline which is triple cased and situated inside of a liner.

The facility primarily processes solid materials, received either in bulk or in drums/totes. When received in bulk, the solid materials are stored in the RISRs which consist of a sealed concrete floor divided into two separate bins. The solid materials are typically 30 percent solids. When the recycling process is complete, the materials are 60 percent to 70 percent solids. The recycled material is sold and shipped to smelters to be used as a substitute for virgin ore in the smelting process. The facility uses five flat bed trailers to move recycled products to the rail station.

When the facility receives dry solids that are too dusty (low moisture materials generally received in drums or totes), they are placed in the compounding unit and mixed with mineral oil and/or other compatible materials with higher moisture content prior to sending the material through the recycling process. The materials are then sent through the compounding process, which is generally a cyclonic action. An operator selects a final particle size, and the large-sized initial materials are whittled down and dewatered until the final particle size is reached. The final product is then deposited directly from the compounding machine into cubic yard polyethylene totes and moved to the final shipment area. The liquids removed from the materials during the process are sent to the on-site wastewater treatment system for treatment.

The facility also recycles non-hazardous wastes that are metallurgically compatible with its production process. Occasionally, the facility receives liquids from cleanout of plating baths. The liquids are unloaded and sent through the on-site wastewater treatment system. The remaining solids are put through the recycling process.

One of the facility's permitted dust collectors is located in the receiving area. The air is passed through a high-efficiency particulate air (HEPA) filter and then the particulates removed by the filter are sent through the recycling process.

Production/Process Area (Containment Building) - The production areas and equipment comprise a product loading area, a waste receiving area, a wastewater treatment system, one compounding unit, two thermal concentration units, four process water tanks, and three product storage areas. The production areas and equipment are completely enclosed within a structure designed so that operations and control of material are completely shielded from wind and weather.

The outputs from WRC include metal concentrate product and process wastewater. The metal concentrate product contains the recyclable material/solids present in the incoming materials, including flux reagents utilized in the smelting process and high concentrations of gold, silver, palladium, copper, nickel, tin, and other elements. WRC's concentrate product is an internationally traded commercial product purchased by foreign and domestic primary metal producers.

The on-site wastewater treatment system consists of two 5,000-gallon leach tanks, four 5,000-gallon precipitation tanks, two filter presses, and a polishing filter. The process water is

sent to the leach tanks, then through the first filter press, to the four precipitation tanks, through the second filter press, and finally through the polishing filter. The treated water is held in a 5,000-gallon holding tank prior to disposal. The wastewater is analyzed by the on-site laboratory throughout the process and after it is passed through the polishing filter (at which point the particles are approximately 2 microns in size), prior to discharging to a tanker truck for disposal at MSTP. Two tanker trucks are stored on-site to transfer process wastewater to MSTP. The on-site wastewater treatment system is situated within a bermed area that consists of an epoxy sealed concrete floor and an 8-inch high concrete berm which are lined with XR-5 geomembrane. A separate tank is used to contain the laboratory sink water. There are also three tanks that contain scrubber makeup and return water, and two transfer tanks. A 12,000-gallon tank is used for excess process water storage. The headspace in the precipitation reactors is vented to a second permitted scrubber system that includes two packed tower scrubbers. The second horizontal unit was recently added. Two larger tanks collect rainwater from the roof and the collection areas outside (pumped from the truck containment areas). The water is then sent through the on-site wastewater treatment system.

The facility sanitary sewage discharges to a septic system/sand mound located in the northern corner of the property

Based on the June 2011 site visit observations and interviews with facility personnel, no floor drains are located within the facility. The concrete floor of the containment building is sealed and a portion of it is lined.

On August 20, 1998, WRC became the first hazardous waste recycling facility of its kind in North America to achieve International Organization of Standardization (ISO) 14001 certification for its Environmental Management System. PADEP formally recognized WRC's commitment to eliminate pollution through process improvement, and noted WRC's intention to comply with all applicable laws and regulations through several PADEP recognition programs. Also, on October 2, 2001, WRC achieved certification to the ISO 9001 Quality Management System Standard, and on October 27, 2006 to the OHSAS 18001 Occupational Health and Safety Management System Standard.

Permits

In 1983, WRC began operations at the facility after encountering opposition by both local residents and Norwegian Township supervisors. These local concerns were reviewed by PADEP, but ultimately PADEP granted WRC permission to operate. However, WRC, PADEP, and the USEPA continued discussions/disputes over the operating status of the facility with respect to WRC's requirement to submit a Part A Hazardous Waste Permit Application. The facility was not issued a hazardous waste identification (ID) number, nor did it have interim status or permit facility status, because it was considered a hazardous waste recycling facility. During the first several years of operation, WRC operated under Pennsylvania ID No. PAR000540004, but in January 1983, WRC was issued USEPA ID No. PAD981038227. Currently, the permit allows for the production of non-ferrous and precious metal concentrate products from the recycling of residual and hazardous electroplating wastewater treatment sludges F006 and F019 residuals and solutions, D002, D004-D010, F007-F009.

One existing waste storage area was identified on the February 12, 1993 Part A Hazardous Waste Permit Application (i.e., Waste Storage Pile 1/Product Receiving Area located inside the northwest corner of the building). However, following WRC's submittal Part B of the Hazardous Waste Permit Application and comments from PADEP, WRC indicated that the following waste management units were applicable to the facility: material receiving (1, 2, and 3), concentration, reactor tanks, filter pressing, blending/compounding, shredding/grinding, and product loading. These waste management units are all located within the containment building. WRC considers the containment building to be one continuous hazardous waste management unit (HWMU) consisting of multiple waste management processes.

There have been no reported spills or releases to the ground surface except for an incident in which a minimal amount of F006 waste was tracked off the facility's lined receiving receptacle by the tires of a delivery transport vehicle. The facility promptly removed the contaminated material, collected samples, and paved the area and installed a tire wash station to prevent future incidents. No other investigations or remedial actions have been recorded. However, local residents have periodically filed complaints with PADEP over malodors allegedly originating from the WRC facility. PADEP continues to follow-up on these complaints and to monitor both the waste recycling and air emissions activities from the facility.

WRC maintains SOOP 54-00062 (see *Air* section) for air emissions from the metal concentration process.

Ownership

The property was initially owned by the Greater Pottsville Industrial Development Corporation. According to historical aerial photographs from Penn Pilot, the property was used as farmland prior to 1972. In 1974, the property was developed by the Oliver Organization, which constructed a steel warehouse with adjoining offices. The facility was subsequently operated by Argo, which performed steel fabrication. In 1980, Argo ceased operation and all equipment was removed.

WRC leased the property in 1982 and began constructing a recycling facility, which began operations in late 1983. In 1988, WRC purchased the property after the completion of a Phase I Environmental Site Assessment (ESA) by Versar, Inc. (Versar). The report describes the evaluation of the property and the surrounding land, the groundwater analysis and the construction of the wells the facility uses for self-imposed groundwater monitoring. At the time of the June 2011 site visit, WRC was not authorized to provide a copy of the ESA for the EI. WRC representatives stated they would require permission from WRC's legal department prior to releasing a copy of the ESA. A copy of the ESA is maintained at the facility.

Based on historical aerial photographs from Google Earth, the southeast portion of the building was expanded between 1992 and 1999. By 2004, the building and parking area had the appearance of their present day configuration.

Waste Types and Quantities

According to the December 23, 1982 Notification of Hazardous Waste Activity, the facility handled the following hazardous wastes:

- F006 - Wastewater treatment sludges from electroplating operations
- F007 - Spent cyanide plating bath solutions from electroplating operations
- F008 - Plating bath residues from the bottom of plating bath from electroplating operations using cyanides
- F009 - Spent stripping and cleaning bath solutions from electroplating operations using cyanides

According to information provided in the April 16, 2001 WAP prepared by WRC for the USEPA, the hazardous wastes received at the facility for recycling were classified by the following waste codes:

- F006 - Wastewater treatment sludges from electroplating operations
- F007 - Spent cyanide plating bath solutions from electroplating operations
- F008 - Plating bath residues from the bottom of plating bath from electroplating operations using cyanides
- F009 - Spent stripping and cleaning bath solutions from electroplating operations using cyanides
- F019 - Wastewater treatment sludges from the chemical conversion coating of aluminum
- D006 - Cadmium toxicity characteristic hazardous waste
- D007 - Chromium toxicity characteristic hazardous waste
- D008 - Lead toxicity characteristic hazardous waste
- D009 - Mercury toxicity characteristic hazardous waste
- D010 - Selenium toxicity characteristic hazardous waste
- D011 - Silver toxicity characteristic hazardous waste

The 2001 WAP also reported that approximately 434 tons and 40,000 gallons of waste were stored throughout the containment building.

On October 27, 2009, PADEP approved the application for a Class II modification of the October 1, 2001 treatment, storage, and disposal facility (TSDF) permit No. PAD981038227. The modification stated that in addition to the hazardous wastes listed in the 2001 TSDF permit, the facility would accept corrosivity characteristic hazardous waste (USEPA Hazardous Waste Code D002).

The March 21, 2012, issued permit allows for the continued production of non-ferrous and precious metal concentrate products from the recycling of residual and hazardous electroplating wastewater treatment sludges F006 and F019 residuals and solutions, D002, D004-D010, F007-F009.

Available records indicate that WRC receives hazardous waste material (primarily F006) from both foreign and domestic firms. Numerous available documents indicate that WRC had been

providing PADEP with notices of when they had been receiving shipments originating from a foreign entity, as per conditions set forth under their current permit.

Residual waste in the form of polyethylene plastic truck liners, intermediate bulk containers (IBC) and polyethylene liners for the IBCs are disposed of in accordance with Pennsylvania regulations and/or are sent off site for recycling.

Process Wastewater

WRC's process wastewater has been delisted in accordance with a delisting agreement with PADEP dated February 1, 1984. The water is delivered via tanker truck to the MSTP. Shipments are monitored by WRC and MSTP to insure compliance with the delisting requirements and other criteria required by MSTP. WRC has maintained a contract for discharge of treated process wastewater with MSTP from 1984 to present.

On March 13, 1998, PADEP issued a co-product determination concurrence letter for the outgoing metal concentrates produced by the facility. The co-product concurrence required that the material must be transferred in good faith as a commodity in trade for use on a regular basis or to be used by the manufacturer or producer on a regular basis.

On May 1, 1999, PADEP promulgated new hazardous waste regulations and deleted from the definition section the term "co-product". Under the new regulations, PADEP provided for a co-product transition process where a company producing material as co-product shall submit by May 1, 2001, a formal notification to exempt the material as solid waste. On May 11, 1999, the facility submitted to PADEP its formal notification of exemption for the outgoing metal concentrates.

On December 17, 2001, the facility submitted a request to PADEP for a variance from classification as a solid waste for the outgoing metal concentrates as materials that have been reclaimed but must be reclaimed further before recovery is completed. This variance request was submitted to PADEP as a condition of the Hazardous Waste Storage and Processing Permit.

On February 6, 2002, PADEP granted a variance to the facility stating that the outgoing metal concentrates produced by the facility, meeting the standards specified under the prior co-product determination concurrence, are determined not to be a solid waste.

Appendix C contains an inventory of documents and references used in this report.

Permit and Regulatory Action History

Waste

Public Involvement in WRCs Permit Application - Prior to the issuing of permits, as well as regarding WRC's ongoing operations, there has been local opposition by neighboring residents concerning the facility. The majority of the complaints stem from malodors believed to be originating from the facility. Reviews of files indicated that these complaints were brought before PADEP by both individual residents as well as from Norwegian Township supervisors. In each instance, PADEP inspected the facility. The findings of these inspections by PADEP resulted in WRC being found in violation and in some cases fined, and in all cases being required to correct the problem, or WRC being found to be in compliance. In some instances, WRC reported or took corrective actions voluntarily. These instances also involved inspections, discussions, fines (if deemed necessary) and corrective measures. A detailed discussion of notices of violation (NOVs) pertaining to waste is provided in the *General NOVs* and /or the *Inspections* sections.

Pre-Permit Legal Negotiations with the USEPA and PADEP - During the timeframe from when WRC began operating at this location in 1983 and its continued operations up through 1990, WRC, the USEPA and PADEP, were involved in legal negotiations concerning WRCs operating status. The issue of whether or not WRC was required to submit a Part A Hazardous Waste Permit Application was in dispute. This dispute was resolved by the consent agreement and consent order (CACO) executed on March 18, 1991.

A May 23, 1984 letter confirmed that the WRC facility was issued Pennsylvania ID No. PAR000540004 for recycling hazardous waste. WRC was assigned this number because they were a recycler and assigning a hazardous waste ID number and/or granting interim status under the federal regulations was not appropriate because the facility did not store the hazardous waste on site, but immediately recycled the waste. Any storage of waste would require a hazardous waste storage permit. According to a chronological summary of events found in a USEPA documentation of determination concerning the facility, correspondence between the facility and PADEP in May 1982 indicated that PADEP would soon receive new USEPA ID numbers designated for waste recyclers. PADEP also stated that they would issue the new ID

number instead of the USEPA. On December 23, 1982, the facility submitted a Notification of Hazardous Waste Activity to PADEP. An undated letter from WRC to its clients (stamped received by PADEP on January 6, 1986), stated that PADEP issued WRC the new USEPA ID No. PAD981038227. This new number was to be used on manifests by firms shipping waste to the facility for recycling instead of the old number PAR000540004, and was required to be used beginning October 28, 1985. The summary indicated that the new USEPA ID No. was issued by PADEP in January 1983.

On February 1, 1984, PADEP determined that wastewater resulting from the treatment of wastewater treatment sludge from electroplating operations (F006) does not exhibit the properties which are the basis for listing the material as hazardous; the subject waste was considered a residual waste. WRC's process wastewater was delisted in accordance with the provisions of the delisting agreement with PADEP on February 1, 1984. Water is delivered to the MSTP via tanker truck and each shipment is monitored by WRC and the MSTP to insure compliance with the delisting agreement.

On September 24, 1986, PADEP issued an NOV citing WRC for: (1) operating a storage facility without a permit and (2) outgoing concentrates not being manifested and transported by a Pennsylvania licensed transporter. In a PADEP internal memorandum dated July 31, 1987, PADEP determined that WRC's storage facility and waste pile did not have interim status. While WRC was considered a reclamation facility and was not subject to the hazardous waste permit requirements at that time, the activity was not equivalent to interim status as a waste pile or hazardous storage facility. Therefore, WRC's storage facility and waste pile did not have interim status. The necessary enforcement action had to be taken to bring the facility into compliance with PADEP's regulations if it was operating as a storage or disposal facility.

WRC's position was summarized in its Notice of Trial dated July 6, 1989 in which WRC contended that its facility was not a hazardous waste treatment or storage facility, and therefore permits were not required, and asserted that WRC reclaimed and recycled materials generated by electroplating operations. WRC further stated that its facility and activities fell within exemptions from permitting and certain other requirements that at that time provided for recycling and reclamation in both Pennsylvania and federal hazardous waste management schema. WRC also cited the need for the USEPA and PADEP to enter into a confidentiality agreement before WRC would proceed into any permit application process. Both agencies

declined to do so at that time. Note: In April 1989, F006 recycling was elevated to review by USEPA Headquarters as many of the regions and authorized states were being requested to make determinations on the regulatory status of various recycling schemes for F006 electroplating sludges.

In an order issued on February 28, 1990 by PADEP, WRC was required to provide all documents related to names of facilities, transporters, generators; quantities associated with the previously mentioned; and associated costs for the period of 1986 to the date of the decree. On March 27, 1990, PADEP received a Notice of Appeal of the February 28, 1990 order. This appeal led to a March 8, 1991 agreement, where WRC and the USEPA entered into the CACO concerning the compliance of various codes regarding the storage and recycling of electroplating sludge at the facility. The terms and conditions of the CACO between WRC and USEPA were received in Washington on March 18, 1991 and time periods of compliance began on this date. Under the aforementioned CACO, WRC was ordered to comply with PADEP's hazardous waste regulations and submit an application to store F006 (cadmium, hexavalent chromium, nickel and cyanide [complexed]) hazardous waste.

Permits - Review of PADEP and USEPA documents indicated that both agencies had multiple series of correspondence (both via letter and telephone) with WRC to request and receive replacement pages of permits, applications, and other documents due to typographical errors, numeric inconsistencies, and other reproduction related items that were required to accurately complete the application and/or permit process. A summary of WRC's permit history and correspondence with the agencies is provided in the following paragraphs.

On September 22, 1989, WRC indicated to PADEP that they intended to submit an application to store hazardous waste to provide WRC with greater flexibility in their operations. On April 17, 1991, WRC filed a TSDF permit application and, under separate letter dated April 17, 1991, a waste storage pile application, both as a condition of the CACO. As part of the TSDF application, an estimated cost of a Closure Plan had to be included. WRC retained WJP Engineers to re-affirm the Closure Plan cost in a letter to PADEP dated September 6, 1991. On June 3, 1992, PADEP requested additional information on the April 17, 1991 permit application in the form of a Notice of Deficiency (NOD). A response to this NOD was submitted by WRC to PADEP on August 5, 1992. On January 3, 1993, a copy of an agreement between WRC and

Norwegian Township regarding ACT 108 (Responsibilities of All Entities Under Act 108 of 1993 Covered Device Recycling Act) was sent to PADEP.

As a requirement of the hazardous waste recycling permit application, WRC had prepared a Preparedness, Prevention and Contingency (PPC) Plan which initially became effective on March 21, 1991. The PPC plan has been revised multiple times (1998, 2001) with the latest known version dated January 2010 submitted to PADEP as the Contingency Plan included as part of the TSDF Operating Permit Renewal Application.

On February 12, 1993, WRC submitted a Part A Hazardous Waste Permit Application. The application indicated that up to 34,000 tons of F006 waste were stored at the facility. To meet the customers contractual specifications, WRC utilizes hydrometallurgical processing (which includes leaching and precipitation), thermal concentration/evaporation at low temperatures (300 to 500 degrees Fahrenheit [F]), and blending and compounding.

According to a letter from WRC to PADEP dated September 13, 1995, the facility submitted an application for determination of permit by rule (PBR) applicability on July 20, 1994. Due to the January 16, 1993 amendments to PADEP's hazardous waste regulations, amended by Package 4 (PK4), WRC found it necessary to submit a PBR application for its recycling operations which are defined as the use of a hazardous waste as an input material in an industrial process to make a product. On March 21, 1995, PADEP forwarded a determination request to the USEPA for WRC's PBR application as directed under the CACO.

A November 21, 1995 letter from PADEP to WRC indicated that WRC is permitted to operate under an interim status while the TSD and PBR application review process continued. On January 11, 1996, WRC sent a letter to PADEP requesting that PADEP inform them if the interim status was in jeopardy due to failure to provide or submit required information.

According to facility representatives, on December 19, 1995, PADEP determined that PBR was not applicable to WRC's operations and that a Hazardous Waste Recycling Permit would be required.

On March 27, 1998, the facility informed PADEP that they were modifying Part B of the Hazardous Waste Permit Application and would submit it by December 31, 1998. On

December 2, 1998, the facility requested that the deadline to submit Part B of the Hazardous Waste Permit Application be extended until March 1, 1999. PADEP granted the extension on December 23, 1998. On March 9, 1999, PADEP acknowledged receipt of WRC's Part B of the Hazardous Waste Permit Application and forwarded it on for technical review. On December 6, 1999, PADEP provided comments on the application. A detailed response to PADEP comments was provided on April 3, 2000. (These comments and responses included discussions involving solid waste management units [SWMUs], which are discussed in detail within the *Solid Waste Management Units (SWMU)* section.) PADEP again noted deficiencies in the application on April 25, 2000. On June 16, 2000, WRC requested a meeting with PADEP to resolve the discrepancies.

On October 1, 2001, PADEP issued WRC Permit No. PAD981038227 for the storage and treatment of selected metal finishing wastes and the production of non-ferrous and precious metal concentrate products from the recycling of electroplating wastewater treatment sludges. This permit is for waste receiving areas and process areas that are completely enclosed within a structure, which is designed to Containment Building standards, to provide control of the material and shielding from the wind and weather.

On May 2, 2002, WRC requested approval to conduct on-site testing of a shredder to determine its compatibility in the metals concentration process. On January 16, 2004, PADEP approved WRC's November 13, 2003 application for a Class I Hazardous Waste Permit Modification to add a shredder/grinder unit with procedural, operational and analytical controls.

On March 8, 2005, PADEP received WRC's application for a Class I Hazardous Waste Permit Modification and its revision on June 16, 2005. On July 13, 2005, PADEP issued a Class I Hazardous Waste Permit Modification granting authorization to construct an expansion (28 foot by 16 foot) of the existing containment building, adjacent to the existing RISRs 1&2, in order to allow for relocation of the larger Compounding Unit 2 (i.e. mixer) to that location. This replaced Compounding Unit 1.

On January 29, 2009, WRC requested a modification to a variance that was issued on April 8, 2001, requesting a modification to the Constituent Parameter Limits (CPL) to include the addition of a chromium concentrate co-product and to incorporate an adjustment to increase the current

level of antimony provided in the CPL. PADEP received this request on February 18, 2009 and issued the modification on February 19, 2009.

On May 26, 2009, PADEP received an application for a Class II Modification to WRC's permit No. PAD981038227. On October 27, 2009, PADEP approved the modifications which included accepting hazardous waste with the characteristic of corrosivity (D002).

On November 4, 2010, WRC submitted a TSDF Operating Permit Renewal Application to PADEP for the renewal of Permit No. PAD981038227. On February 23, 2011, PADEP determined the application was administratively complete and notified WRC. On March 21, 2012, PADEP issued the permit. The permit allowed for the continued production of non-ferrous and precious metal concentrate products from the recycling of residual and hazardous electroplating wastewater treatment sludges F006 and F019 residuals and solutions, D002, D004-D010, F007-F009.

NOVs - A listing of WRC's Pennsylvania compliance history up to May 1, 2004 and other correspondence indicated that several NOVs were issued by PADEP for improper manifest documentation on: February 17, 1985, September 18, 1985, February 20, 1986, August 19, 1986, November 4, 1987, and January 25, 1993. In each instance WRC took immediate corrective action in consultation with PADEP to resolve deficiencies and/or inconsistencies in the manifests submitted and/or provided a satisfactory response to PADEP. Penalties were not assessed and no further actions were taken by PADEP with respect to these manifest infractions.

On August 5, 1994, PADEP issued an NOV citing an annual Residual Waste Facility Report was not filed with PADEP. WRC sent a certified letter to PADEP requesting to have the NOV rescinded because WRC operates under the Resource Conservation and Recovery Act (RCRA) regulations and is therefore exempt from reporting as a residual waste facility. A penalty was not assessed and no further action was taken by PADEP.

On April 16, 1997, PADEP issued an NOV citing the use of an unlicensed transporter. This was a PADEP computer error as a misspelling of an entry caused the computer to fail to match the transporter name. The NOV was vacated in a letter from PADEP on May 27, 1997.

Pennsylvania's Environmental Facility Application Compliance Tracking System (eFACTS) indicates no violations have been noted since May 1, 1998.

Air

Permits - The facility currently operates under a SOOP for various emission units associated with the metal concentration process (e.g., evaporation/thermal concentration). WRC's process incorporates hydrometallurgical and pyrometallurgical processes. All hydrometallurgical process tanks were maintained under a slight negative pressure and vented through a packed tower scrubber under PADEP Air Quality Permit No. 54-00062. The steam exhaust output from the two thermal concentration units (pyrometallurgical process) exits through a Heil/Xerxes venturi particulate scrubber and two packed tower scrubbers operating under PADEP Air Quality Permit No. 54-00062.

The following table details the permits, issue dates, renewal information, and applicable inspections for the various plan approvals and operating permits issued at the facility throughout its operating history:

Plan Approval/ Operating Permit No.	Applicable Units	Issued	Modifications/ Extensions
Plan Approvals			
54-313-57A	Metals Concentration Process/ Packed Tower	July 10, 1997	Modification: March 20, 1998 Extension: June 22, 1998
54-339-016	Two Hydrometallurgical precipitate concentrators		Modification: February 2, 1990
54-339-16A	No. 2 fuel oil fired thermal concentrators and evaporators	Applied on April 3, 1993	Modification: July 2, 1993
54-339-16B	Three Thermal Concentrators	July 10, 1997	
54-339-16C			Extension: August 13, 2002

Operating Permits	Applicable Units	Issued	Modifications/Extensions
54-313-057	Metals Concentration Process/ Packed Tower Cleaning Device	Issued: May 16, 1986 Renewed: July 9, 1988 June 25, 1991 June 23, 1992 June 23, 1993 July 1, 1993	
54-313-57A	Metals Extraction Process/ Packed Tower Scrubber Solution Change May 12, 1997	May 21, 1999	
54-339-016	Two Hydrometallurgical precipitate concentrators	Issued: December 20, 1989 Renewed: July 9, 1990 June 25, 1991 June 25, 1992 July 1, 1993	Modification: May 12, 1997
54-339-16A	Three No. 2 fuel oil fired thermal concentrators and evaporators	April 21, 1994	Request to modify: August 9, 2001
54-339-16B	Three Thermal Concentrators Venturi Jet Packed Tower Scrubbers	May 21, 1999	
54-339-16C	Metals reclamation Process/APV Concentrator	Issued: November 21, 2002 Renewed:	
State Only Operating Permit (SOOP) 54-00062	<ul style="list-style-type: none"> • Hydrometallurgical Extraction Process • Thermal Concentrating Unit 2 • APV Fluid Bed Processor • Hydrometallurgical wet Scrubber • Venturi 1 and 2 • Dual Pact Tower 1 • Hydrometallurgical Stack • Thermal Concentrator Stack 	Issued: September 29, 2005 Renewed: September 13, 2011	Replaces 54-313-57A and 54-339-16C Expired: September 30, 2010 (Renewal Application submitted on 2/9/2010) Approval granted on September 13, 2011.

A renewal application for SOOP 54-00062 was submitted to PADEP on February 9, 2010. This application was deemed administratively complete and WRC was notified by PADEP on March 25, 2010, that the facility was authorized to operate under interim status until final

issuance of the permit renewal. On September 13, 2011, final renewal approval was granted by PADEP for SOOP 54-00062.

In addition to these permits, the facility routinely submitted the required annual air emission inventories and the associated air permit fees (available records from 1986 to 2005). Throughout its history, the facility also submitted miscellaneous Requests for Determination (RFDs) for installing permit-exempt equipment.

Available records indicate that PADEP conducted periodic air monitoring near the facility from 1996 through 1998. On September 10, 1998, WRC notified PADEP with plans to conduct stack testing at their facility during the week of September 25, 1998. Note: WRC conducts routine stack emissions testing as best management practices.

NOVs - On April 18, 1991, PADEP issued an NOV. WRC was cited for an unburned fuel odor condition [diesel smell] affecting a resident on Sharon Drive. An emergency response inspector determined that the odor resulted from a malfunction in the two concentrators at the facility. The problem was immediately corrected and no further action was required and no penalty was assessed.

On August 20, 1993, PADEP issued an NOV citing a malodor condition. On September 2, 1993, WRC sent a certified letter to PADEP reiterating their disagreement with the NOV and pointing out the installation of a new concentrator exhaust scrubbing system and installation of a pipe line to provide a natural gas supply. PADEP rescinded the NOV issued in error for August 20, 1993, and re-issued a corrected NOV dated May 2, 1994. This NOV cited an August 2, 1993, emergency response inspection to complaints of malodor condition affecting resident of Pinewood Circle. The malodors were determined to be originating from the metal concentration process at the facility. On May 20, 1994, WRC sent a certified letter to PADEP refuting the complaint by providing documentation to verify that WRC was not operating the “metal concentration process” at the time of the May 2, 1993 inspection. PADEP issued a penalty on June 1, 1994.

On October 15, 1993, PADEP issued an NOV. WRC was cited for a September 28, 1993, emergency response inspection of a malodor condition affecting residents of Pinewood Circle. The inspector determined that the odor resulted from a malfunction in the two concentrators at the

facility. A penalty was later assessed in the October 4, 1994 Consent Assessment of Civil Penalty.

On October 4, 1994 a Consent Assessment of Civil Penalty was duly executed and agreed to by WRC and PADEP. On February 28, 1991, August 2, 1993, and September 28, 1993, PADEP received complaints that WRC, operating under permit No. 54-399-016A, had odors emanating from the facility. Immediate site inspections carried out on these same days determined that the odors were detected outside of the site boundaries and WRC was in violation of Pennsylvania code.

An October 25, 1996 PADEP letter states that three copies of a Consent Assessment of Civil Penalty were forwarded to WRC.

On December 2, 1996, PADEP issued an NOV citing that a pack tower fume scrubber released an odor from WRC's Hydromet process (measured 7 parts per million [ppm] H₂S at outlet) on October 16, 1996. Immediate corrective action was taken and the occurrence was reviewed on site with PADEP representatives on October 17, 1996. A letter from PADEP on January 15, 1997 confirmed that a Consent Assessment of Civil Penalty issued on January 9, 1997, was duly executed and agreed to by WRC and PADEP. Operating under permit #54-313-057, WRC had emitted hydrogen sulfide into the outdoor atmosphere on October 16, 1996. It was noted that WRC reported the incident to PADEP in a timely manner and took action to correct the situation.

NPDES

No National Pollutant Discharge Elimination System (NPDES) or storm water permits are associated with WRC. WRC's April 3, 2000 response to PADEP comments of WRC's Hazardous Waste Recycling Permit Application stated the following, "Based on the activities conducted at WRC facilities, neither Pennsylvania nor Federal Regulations specify the requirement for a NPDES or Storm Water permit". Wastewater at the facility is shipped to MSTP for final treatment.

B. Description of all SWMUs and/or Areas of Concern (AOCs)

SWMUs

After some debate between PADEP and WRC, the facility's containment building was considered to be a HWMU containing several waste recycling process areas. A summary of how the facility received their HWMU designation is provided below.

As part of WRC's submittal Part B of the Hazardous Waste Permit Application discussed earlier, PADEP had returned comments in a letter (dated December 6, 1999) regarding the units used to manage the waste during the recycling process. Those comments indicated the following units were applicable to the facility:

Industrial Unit	Industrial System	Type of Activity
Leach and Precipitation Reactors	Hydrometallurgical	Treatment Tanks
Thermal Concentration	Pyrometallurgical	Physical Treatment
Mixing	Compounding/Blending	Physical Treatment
Filter Presses	Filtering/Dewatering	Physical Treatment
RISRs 1,2 and 3	Unloading	RISR within containment building
Containment Building	Containment	Containment Building

On April 3, 2000, WRC responded to PADEP comments which designated applicable units to the facility. WRC referenced a USEPA document titled Introduction to Containment Buildings (Doc. No. PB98108053, July 1997), that outlines the design and operating standards for Hazardous Waste Treatment with a HWMU that is a containment building (Ref. 40 CFR 264/265, Subpart DD). Treatment, in this case recycling, with a containment building can be any method that is employed, except the method of Thermal Treatment (Ref. 40 CF 264/265, Subpart P). Additionally, if the method employs a tank wherein liquids are, all applicable provisions of 40 CFR264/265, Subpart J, also apply. The document clarifies that a containment building is the actual treatment technique with an assigned Treatment Code T94.

As specified by PADEP, WRC has delineated and described the aspects of the treatment method WRC employs. The table below is one similar to that provided above by PADEP, and was configured to show that the HWMU is a containment building and that this unit has various process aspects. These aspects are listed with their analogous function and activity. As the

regulations do not further breakdown a unit as to the method employed, the Code T94 properly identifies the WRC HWMU.

Treatment (HWMU)	Process (Code T94)	Recycling Activity
Containment Building	Containment Building/Recycling	Containment Building
Material Receiving 1,2,3	Unloading	Inspection/Sampling
Concentration	Dehydration Process	Physical Treatment
Reactor Tanks	Hydrometallurgical	Treatment in Tanks
Filter Pressing	Filtering/Dewatering	Physical Treatment
Blending/Compounding	Product Formulating	Physical Treatment
Shredding/Grinding	Resizing	Physical Treatment
Product Loading	Loading	Product Shipment

There are three RISRs, six hydrometallurgical process tanks, two filter presses, four process water tanks, one shredding unit, one compounding unit, and two concentrating units.

On January 16, 2004, the permit was modified to add the shredder/grinder unit to the process.

Storage Tanks

On April 24, 1984, PADEP notified Norwegian Township that WRC requested permission to install processing tanks at the facility and asked the Township to respond if it had any concerns.

On June 25, 1984, PADEP notified the Township that WRC was approved to install the processing tanks. Interim proof of tank registration was sent to WRC on December 4, 1990.

On August 7, 1995, WRC provided the required 30 day notice to PADEP to remove one 10,000-gallon steel, underground storage tank (UST) that was used for storage of No. 2 fuel oil (heating oil). The tank was located near the loading docks located west of the process building (Appendix B: Figure 2 – Facility Layout). Per the Tanks Registration form, the UST was removed on September 22, 1995. The UST closure report, dated October 2, 1995, indicated that the UST was in extremely good condition with no rust or pitting. The soil removed from the excavation was stockpiled and field screened for petroleum. Four confirmatory samples were collected and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX). The analytical results indicated that xylenes were detected at a concentration of 0.012 milligram per kilogram (mg/kg) in a soil sample collected from the bottom of the tank excavation. This concentration is well below the PADEP Land Recycling Program (Act 2) used aquifer, non-residential soil to

groundwater medium-specific concentration (MSC) for total xylenes (990 mg/kg). The other soil samples were reportedly non-detect for BTEX and thus the excavation was backfilled with the stockpiled soil.

In a telephone conversation with PADEP on February 5, 1996, WRC discussed installing a 2,000-gallon diesel aboveground storage tank (AST). The new AST was installed between the process building (east side) and the southern office on October 20, 1993 and was used to store No. 2 fuel oil (Appendix B: Figure 2 – Facility Layout). The tank had a double-walled steel construction; piping was bare steel and copper. The AST was equipped with spill prevention and overflow prevention. On February 9, 1996, PADEP acknowledged receipt of the Tanks Registration form of the 2,000-gallon fuel oil tank from WRC. This tank was removed on November 22, 2002 and replaced with a 300-gallon, double-walled, fuel AST. The 300-gallon AST is in a sealed concrete spill-containment area located adjacent a loading dock located west of the process building (Appendix B: Figure 2 – Facility Layout).

The registered tanks identified at the facility are as follows:

ABOVEGROUND TANKS					
Tank ID	Installed	Size (gallons)	Contents	Current Status	Secondary Containment
001B	November 2002	300	No. 2 fuel oil	Active	yes
001A	October 20, 1993	2,000	No. 2 fuel oil	Removed November 22, 2002	yes
UNDERGROUND TANKS					
Tank ID	Installed	Size (gallons)	Contents	Current Status	Secondary Containment
001	April 1, 1986	10,000	No. 2 fuel oil	Removed September 22, 1995	unknown

AOCs

Based on the records reviewed, interviews, and site visit observations, no AOCs were identified at the facility. All facility processes are contained within the containment building which has a bermed, sealed, and lined concrete floor. No releases have reportedly occurred at the facility.

Investigations and Remedial Actions

Phase I ESA, 1988

According to the May 10, 2001 PPC Plan, a Phase I ESA was conducted on the property in 1988 by Versar prior to WRC's purchase of the property. The findings and conclusions of the ESA were not provided by WRC for this EI due to legal reasons. However the report states that five monitoring wells (four shallow and one deep) were installed in March 1988. Although not required by regulation, these five monitoring wells are used for continued routine groundwater monitoring conducted by WRC. Groundwater is sampled for purgeable organics, potential metal contaminants, and USEPA groundwater quality parameters. Boring logs (completed by Versar) indicated the borings were advanced to depths ranging from 38 to 52 feet. Logs indicated a reddish brown, light brown weathered shale was present through the upper four feet; layers of light brown, orange and tan very fine grained shale to siltstone, silty loam, highly weathered shale, and poorly cemented sandstone were encountered to the end of the borings. Evidence of moisture and little water were detected at a depths ranging from 6 to 50 feet. Monitoring wells were constructed of 4-inch diameter polyvinyl chloride (PVC) screen (ranging in length from 15 to 25 feet) and casing.

Mobile Analytical Services Sampling and Analyses, 1995 - 2000

PADEP, in conjunction with the Mobile Analytical Services of the Bureau of Laboratories performed on-site chemical analysis of metals in samples of the facility's incoming recyclable materials and outgoing concentrate products. On-board instrumentation screened for the following metals: arsenic, antimony, barium, beryllium, cadmium, chromium, copper, nickel, lead, selenium, and zinc. The analyses performed for metals in the samples were total metals and Toxicity Characteristic Leaching Procedure (TCLP). The aforementioned sampling events were conducted by the Mobile Analytical Unit on July 17 and 18, 1995; June 12, 1996; September 9, 1997; August 18 and 19, 1999 and July 10 and 11, 2000.

Waste Water Sampling, 1997 and 2000

Available records indicated that WRC and PADEP conducted split sampling of wastewater in September 1997 and July 2000.

F006 Cleanup, 1998

A May 1, 1998, inspection and associated August 21, 1998, NOV reported that a minimal amount of recyclable F006 material (below the reportable quantity) was tracked off the facility's lined

receiving receptacle by the tires of a delivery transport vehicle. As a result, WRC removed the top 2 to 3 inches of gravel from the area and placed it within the containment area for decontamination. Samples were collected both prior to and after removal of the gravel under the observation of PADEP personnel and were analyzed for TCLP and total metals by both PADEP and an independent laboratory. TCLP and total metal concentrations were not reported above regulatory limits. A penalty was not assessed and no further action was taken by PADEP. To prevent future tracking of waste material, WRC installed a bermed tire wash station and paved the facility truck entrance driveway with asphalt. The April 27, 1999 inspection observed the use of a newly installed tire wash and expanded truck unloading area.

Groundwater Sampling and Analyses, 2010

During the June 2011 site visit, the facility provided the May 24, 2010 and November 28, 2010 groundwater sampling results of monitoring wells W-1, W-2D, W2S (dry), W-3, and W-4. Groundwater samples were analyzed for total and dissolved metals and other inorganics. No results were reported greater than the non-use aquifers, non-residential MSCs for the two sampling events. For the May 24, 2010 sampling event, the monitoring well groundwater results also were compared to the results for a sample of the City of Pottsville potable water supply.

No other known releases have occurred at the facility resulting in investigations or remedial actions.

Inspections

Waste

Compliant hazardous waste inspections were conducted at the facility on: May 31, 1989; April 13, 1992; June 22, 1993; December 22, 1993; June 21, 1994; April 5, 1995; March 21, 1996; October 16, 1996; June 17, 1997; July 3, 1997; November 24, 1997; March 4, 1998; April 27, 1999; September 7, 2000; July 26, 2001; January 30, 2002; June 16, 2003; August 21, 2003; May 18, 2005; July 20, 2005; June 1, 2006; August 25, 2006; August 2, 2007; August 29, 2007; March 11, 2008; March 29, 2009; and September 29, 2010. These inspections included a tour of the facility, watching a production video, tracking documentation through the management process, and reviewing manifests.

The following additional inspections dates were cited on eFACTS: February 20, 1986; August 5, 1986; August 19, 1986; September 24, 1986; January 8, 1987; September 16, 1987; October 14, 1987; November 4, 1987; February 28, 1990; January 25, 1993; March 21, 1996; November 17, 1997; December 3, 1999; September 12, 2000; July 2, 2001; and September 9, 2004.

Several inspections noted complaints filed by local residents against WRC, citing several occasions where material was being discharged to the ground. These inspections concluded that the discharges observed was rain water runoff being collected in the outside containment area. It was also noted on several inspections that a 300-gallon sump was in place that was designed to collect storm water runoff and any spills that may occur on the outside storage bays and parking/delivery area, and pump this water back into the plant.

An odor complaint submitted by nearby residents resulted in a site inspection on October 16, 1996. The inspection concluded it was the result of a precipitation tank which was using sodium metabisulfite for the first time. The inspector recommended a follow up inspection by PADEP's air monitoring section.

The July 26, 2001 and June 16, 2003 inspections made note of inspecting a rail head loading facility.

As noted above, an inspection was conducted at the facility on August 29, 2007. This inspection was a RCRA, Subtitle C, Compliance Evaluation/Land Disposal Restrictions Inspection conducted by the USEPA Region III. A finding was related to one open 55-gallon drum containing hazardous waste observed during the inspection. It also was noted that no waste was being added or removed from the open drum. The inspection noted no violations.

NOVs - The following hazardous waste inspections had noted violations and in some instances, resulted in a NOV.

Four waste inspections of WRC had noted violations which constituted in the storing a hazardous waste without a permit. These violations included: having waste piles on an unlined concrete floor prior to entering the process stream; using unlicensed transporters; not manifesting hazardous waste; and not conducting appropriate analysis of hazardous wastes being processed.

The noted inspections occurred on February 5, 1986; September 9, 1986; and January 6, 1988 May 1, 1998.

On April 5, 1995, an inspection noted that WRC failed to have manifests filled out properly and completely.

On October 10, 1995 and March 25, 1996, an inspection noted that WRC failed to have: a hazardous waste determination performed on all waste streams; quarterly reports submitted to PADEP; a PPC plan developed and implemented; and a source reduction strategy prepared and available.

On August 21, 1998, PADEP issued an NOV, which noted a minimal amount of recyclable F006 material (below the reportable quantity) was tracked off the facility's lined receiving receptacle by the tires of the delivery transport vehicle during a May 1, 1998 inspection. WRC removed the top 2 to 3 inches of gravel from the area and placed it within the containment area for decontamination. Samples were collected both prior to and after removal of the gravel and were analyzed for TCLP and total metals by PADEP and an independent laboratory. TCLP and total metal concentrations were not reported above regulatory limits. A penalty was not assessed and no further action was taken by PADEP. To prevent future tracking of waste material, WRC installed a bermed tire wash station and paved the facility truck entrance driveway with asphalt. The April 27, 1999 inspection observed the use of a newly installed tire wash and expanded truck unloading area.

On September 11, 2003, PADEP issued an NOV to WRC based on an August 21, 2003 incident response inspection. PADEP determined that WRC had been operating a "filter shredder" without approval. Both WRC and PADEP made a determination that the shredding operation caused filters and filter cake material ("copper mud") to smolder and release unknown gases which required two WRC employees to seek medical attention. PADEP had not approved the waste shredding operation as part of WRC's Hazardous Waste Storage and Processing Permit. WRC had not submitted a permit modification application for the installation and operation of the filter shredder. Also, WRC failed to comply with the facility's PPC Plan by not immediately notifying PADEP of the incident and by not providing for emergency provisions for the operation of the filter shredder. Lastly, WRC failed to obtain approval prior to accepting waste from International Wire Group, Inc. (IWG). The "copper mud filter papers" and the "copper mud"

generated by IWG were not approved waste streams and should not have been accepted for processing by WRC. WRC met with PADEP and demonstrated that a shredding unit had been in operation at the facility since prior to the issuance of the facility permit but was not specifically listed in the permit. WRC also demonstrated that appropriate procedures, as detailed in the PPC Plan, were being followed and that appropriate emergency provisions were in place. Finally, WRC provided evidence that the waste received from IWG was approved as an existing waste stream at the time of the TSDF Permit issuance. WRC requested that the NOV be rescinded. A penalty was not assessed and no further action was taken by PADEP.

Pennsylvania's eFACTS indicates no NOVs have been noted since May 1, 1998.

Air Inspections

Compliant air compliance inspections were conducted at the facility on: December 21, 1983; March 21, 1984; July 16, 1984; November 14, 1984; April 25, 1985; August 27, 1985; November 21, 1985; February 14, 1986; April 28, 1986; April 30, 1987; June 13, 1990; July 19, 1990; May 14, 1991; June 4, 1991; May 18, 1993; May 19, 1993; March 15, 1994; July 8, 1994; April 5, 1995; June 15, 1995; November 2, 1995; July 9, 1996; September 7, 1996; September 10, 1996; October 7, 1996; October 28, 1996; September 29, 1997; September 3, 1998; September 24, 1998; July 8, 1999; August 10, 1999; October 3, 1999; November 5, 1999; November 8, 2000; January 17, 2002; July 22, 2002; November 13, 2002; March 12, 2003; July 18, 2007; July 14, 2008; July 22, 2008; May 7, 2009; June 29, 2010; and April 7, 2011.

Air inspections resulting in NOVs were mostly related to air permit violations and were discussed in the *Permit and Regulatory Action History* section.

C. Description of Exposure Pathways for all Releases or Potential Releases

Air: The facility is located in a mixed residential/commercial area of Pottsville, Pennsylvania. The City of Pottsville had an estimated population of 15,549 in 2000, according to the US Census Bureau (www.factfinder.census.gov, accessed August 26, 2011). The facility currently operates under a SOOP 54-00062 for air emissions associated with their recycling process. Emissions in excess of permit limits are not anticipated under normal operating scenarios.

There is no documentation that any spills or releases occurred at the facility during operations that may have impacted soil and/or groundwater that have not been remediated; therefore, vapor intrusion into the onsite and nearby structures from these media is not expected to be a potential exposure pathway at this time.

Groundwater: The Llewellyn Formation, which comprises the bedrock at the facility, is not a reliable source of water. Local well drillers cite the groundwater quality as poor due to impacts from past and current mining activities in the area and water yields from wells are only sufficient for low volume users.

The facility maintains one production well on-site. This production well was installed in March 1974, is steel cased, 300 feet deep, and has a pump set at 200 feet below ground surface (bgs). It is used solely by the laboratory for use in the deionized (DI) columns. Water from this well is reportedly monitored on a monthly basis for several heavy metals, none of which have been detected. All other water used on-site is via the public water supplier.

The facility also has five relatively shallow (less than 50 feet deep) monitoring wells (Appendix B: Figure 2 - Facility Layout) on-site which they sample quarterly, although not required. According to the November 28, 2010 summary table, static groundwater levels ranged from 27 feet bgs (PAF-W4) to 43 feet bgs (PAF-W3) during the November 2010 sampling event. The facility stated that several of the wells are typically dry and cannot be sampled. The November 28, 2010 monitoring well water levels indicate groundwater is flowing toward the west.

The City of Pottsville, including residential, commercial, industrial and municipal users, receives drinking water from the Schuylkill County Municipal Authority (SCMA). SCMA provides service to approximately 34,000 customers in the City of Pottsville, surrounding communities and the facility. The City of Pottsville is provided water by two of SCMA's three water filtration plants. The Broad Mountain facility draws water from the Wolf Creek, Eisenhuth, Pine Run, and Kauffman reservoirs, while the Indian Run facility utilizes the Indian Run reservoir. All of these reservoirs are located south of City of Pottsville.

Information obtained from the Pennsylvania Department of Conservation and Natural Resources (DCNR) Groundwater Information System (PaGWIS) accessed on August 30, 2011 indicates that

two groundwater wells are located within a 0.5 mile radius of the facility. One domestic open hole well, reported to be 325 feet in depth and drilled in 1965, is located approximately 0.3 mile north of the facility. A closed-loop geothermal well, reported to be 300 feet deep and drilled in 2008, is located approximately 0.42 mile north of the facility. The production well maintained by the facility was not listed in the PaGWIS database. No other potable wells have been identified near the facility.

Surface Water: The site area has a dendritic drainage pattern and has topography of deep stream valleys and steep ridges. The facility property slopes gently to the southwest and therefore surface runoff is expected to be towards the southwest. A relatively flat surface across the facility property precludes any significant site runoff. The facility sanitary sewage discharges to a septic system/sand mound located in the northern corner of the property.

The facility is located near the headwater of an unnamed creek located approximately 400 feet to the southeast of the facility. The creek discharges into the West Branch of the Schuylkill River approximately one mile southwest of the facility. Based on information obtained from PADEP eMapPA (accessed March 21, 2011), the segment is designated as a cold water fishery, but is not stocked with trout. The stream is listed on the integrated list as an attaining segment supporting aquatic life, but as a non-attaining segment impaired for fish consumption due to an unknown source of polychlorinated biphenyls (PCBs). Based on PADEP eMapPA, the Total Maximum Daily Load (TMDL) associated with this segment include: PCBs (associated with the Schuylkill River) and metals (associated with the Upper Schuylkill River and West Branch of the Schuylkill River). According to the National Wetlands Inventory (NWI), no wetlands are present on the property. However, wetlands are present just across the southern property boundary.

Soil: The facility is situated within the Anthracite Uplands Section of the Ridge and Valley Physiographic Province. The entire facility property is underlain by a Watson Series soil, which is a very deep, moderately well drained silt loam to gravelly clay loam formed in pre-Wisconsin glacial till derived from sandstone, siltstone, and shale. These soils have a slow permeability, a moderately low to moderately high available water capacity, and a pH range of very strongly acid to strongly acid.

Access to the containment building and truck turning area is restricted by fencing; however, access to the remaining portion of the property is unrestricted. Approximately 30 percent of the

property is covered with impermeable surfaces (i.e., the building and paved parking areas). The remaining 70 percent consists of a gravel truck turning area, grass covered areas on the north and northeast portion of the property, and wooded land south of the facility (Appendix B: Figure 1 - Facility Location Map).

D. Exposure Pathway Controls and/or Release Controls Instituted at the Facility

Air: The USEPA has requested that the vapor intrusion pathway be evaluated as part of the EI process. The USEPA 2002 OSWER *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)* provides a methodology for vapor intrusion evaluation under current land use conditions using available site data. It should be noted that the USEPA 2002 guidance is not generally recommended for use in evaluating settings that are primarily occupational. However, PADEP Act 2 vapor intrusion guidance (specifically, *Land Recycling Program Technical Guidance Manual – Section IV.A.4, Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard*) can be applied to both residential and nonresidential receptors. This guidance provides decision matrices for soil and groundwater (under a Statewide health or generic approach) for determining if indoor air quality is a concern. Therefore, PADEP vapor intrusion guidance was used, as appropriate, to evaluate a potential vapor intrusion pathway in this EI report.

There are no known or reported releases at the facility that have not been remediated. Therefore, it is not expected that soil or groundwater have been contaminated by the operations conducted at the facility that would create a vapor intrusion issue into the on-site building. There are no other inhabited structures within 100 feet of the facility. Accordingly, it is concluded that controls are not necessary for the vapor intrusion exposure pathway.

Groundwater: There have been no known or reported releases of chemicals to groundwater and no reported remedial actions for groundwater conducted at the facility. Potable water at the facility is provided by SCMA and the surrounding residences are connected to the public water supply. According to the PaGWIS database, one domestic well and one closed-loop geothermal well are located within 0.5 mile of the facility. The facility maintains one production well; however, the groundwater at the facility is not used for human consumption. Groundwater at the facility is used in

the laboratory DI columns, thus exposure to groundwater from the production well water is limited to laboratory workers. Water from this well is reportedly monitored on a monthly basis for several heavy metals, none of which have been detected.

During the June 2011 site visit, the facility provided the May 24, 2010, and November 28, 2010, groundwater sampling results of monitoring wells W-1, W-2D, W2S (dry), W-3, and W-4. Groundwater samples were analyzed for total and dissolved metals and other inorganics. No results were reported greater than the non-use aquifers, non-residential MSCs (used for comparison by the facility) for the two sampling events. For this report, the results were compared to the PADEP MSCs updated on January 8, 2011. Arsenic-total (0.017 ppm) was detected in W-1 above the used aquifers, total dissolved solids (TDS) less than/equal to 2,500 ppm MSCs (0.01 ppm for residential and non-residential) in November 2010. Arsenic-dissolved for the sample (0.002 ppm) was below the MSCs. Arsenic was below the detection limit of 0.001 ppm in the monitoring wells and the City of Pottsville potable water in May 2010. Lead-total (0.013 ppm) was detected in W-4 above the used aquifer, TDS less than/equal 2,500 ppm MSCs (0.005 ppm for residential and non-residential) during May 2010. Lead-total (0.005 ppm) was detected in W-2D and W-4 in November 2010. Lead-total (0.023 ppm) was detected in W-3 in November 2010. Lead-dissolved was below the detection limit of 0.001 ppm for these wells. Manganese (0.448 and 0.407) was detected above the used aquifer, TDS less than/equal 2,500 ppm MSCs (0.3 ppm for residential and non-residential) in W-4 for both total and dissolved constituents, respectively, in May 2010. Manganese was not analyzed in November 2010. Mercury was not detected during the two sampling events; however, the reporting limit of 0.0034 ppm is above the used aquifer, TDS less than/equal 2,500 ppm residential and non-residential MSCs of 0.002 ppm. Nitrate (25.6 ppm and 22.4 ppm) was detected in W-4 above the used aquifer, TDS less than/equal 2,500 ppm residential and non-residential MSCs (10 ppm) during the two sampling events, respectively.

Although several metals (arsenic, lead and manganese) were detected above the used aquifers MSCs in the total phase in the shallow groundwater, only manganese at W-4 was detected above the MSC in the dissolved phase. Nitrate was detected above the MSC only at W-4. As the shallow water is sampled and analyzed by the facility, exposure to groundwater water is limited to laboratory workers. The use of proper personal protective equipment (PPE) eliminates the exposure pathway.

It is unknown if groundwater quality is the result of facility operations, or more likely due to the geology of the area and/or past uses of the property (e.g., farmland). As there have been no known releases to groundwater at the facility and the neighboring residences are connected to the public water supply, it is concluded that no exposure pathway controls are relevant for the groundwater exposure pathway.

Surface Water: The facility does not operate under a NPDES permit and wastewater generated at the facility is treated on-site, and then shipped via tanker truck to MSTP for final disposal. The nearest surface water body, an unnamed tributary to the West Branch of the Schuylkill River, is located approximately 400 feet southeast and down slope of the facility. There have been no known or reported releases to the on-site storm water collection system which consists of storm water inlets located throughout the parking areas, roof drains, and downspouts. According to facility personnel, the roof drains underneath the exhaust scrubber on the containment building are directed to the on-site wastewater treatment system. The remaining roof drains on the containment building can be switched between discharge to the on-site wastewater treatment system or to the ground surface on the southern portion of the property. The downspouts on the office buildings and storm drains in the parking lot discharge to the southern portion of the property. Storm water runoff at the facility does not directly discharge to the unnamed tributary.

There are no known or reported releases to groundwater at the facility. Results for groundwater samples collected by WRC from their on-site monitoring wells have shown metals (arsenic, lead, and manganese) are present in groundwater above the used-aquifers, residential and non-residential MSCs in the total phase. These metals were not detected in the dissolved phase with the exception of manganese that was detected above the MSCs at W-4. Nitrate was also detected above the MSCs at W-4. It is unknown if the groundwater quality is the result of facility operations, or more likely due to the geology of the area and/or past uses of the property (e.g., farmland). Therefore, it is concluded that no controls are relevant for the surface water/sediment exposure pathway.

Soil: There have been no reported or suspected releases, spills, or leaks at the facility. However, two instances of soil sampling and remediation reportedly occurred at the facility as described below.

In September 1995, soil was excavated and stockpiled during the 10,000-gallon UST removal. Soil samples were collected from the tank excavation and were analyzed for BTEX. The soil sample collected from the bottom of the tank excavation exhibited a xylenes concentration of 0.012 mg/kg

while the other three soil samples were non-detect for BTEX contamination. Based on the sampling results and field screening, it was determined that the stockpiled soil could be reused as backfill material for the tank excavation.

In May 1998, PADEP observed that a small quantity of F006 waste material was tracked across the gravel parking lot within the facility's receiving area. In response to this occurrence, WRC removed the top 2 to 3 inches of gravel from the area and placed it within the containment area for decontamination. Samples were collected both prior to and after removal of the gravel and were analyzed for TCLP and total metals. Results of the sample analysis indicated that none of the samples exceeded regulatory limits for TCLP or total metals. Therefore, no residual soil contamination was detected. WRC implemented immediate corrective action to prevent future tracking of material by installing a bermed tire wash station and paving the facility truck entrance driveway with asphalt.

Access to the truck turning and receiving areas at the facility is restricted by a security fence all process-related operations and waste storage areas are located inside of the containment building. Based on observations made during the site visit, approximately 30 percent of the property consists of impermeable surfaces (i.e., the building and paved areas), which act as a cap for contaminated soil, if any exists. The remaining 70 percent of the property is grass-covered and wooded and is outside of the processing areas. No intrusive soil work is conducted at the facility on any regular basis. Therefore, it is concluded that no exposure pathway or release controls are relevant for the soil exposure pathway.

E. Follow-up Action Items

USEPA Region III will decide if additional information or sampling at the facility is required to determine whether or not the environmental indicators have been met or if corrective action is required for the facility.

Baker

Michael Baker Jr., Inc.

APPENDIX A

Photographs

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: World Resources Company

PHOTOGRAPH

1

VIEW

Northeast

PHOTOGRAPHS
BY

Baker



Comments: Containment building, receiving area, and air scrubber.

PHOTOGRAPH

2

VIEW

Northwest

PHOTOGRAPHS
BY

Baker



Comments: Receiving, inspection, and sampling receptacles (RISR).

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: World Resources Company

PHOTOGRAPH

3

VIEW

Interior

PHOTOGRAPHS
BY

Baker



Comments: Incoming waste to be shredded.

PHOTOGRAPH

4

VIEW

Southeast

PHOTOGRAPHS
BY

Baker



Comments: Containment building and shipping area.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: World Resources Company

PHOTOGRAPH

5

VIEW

Southeast

PHOTOGRAPHS
BY

Baker



Comments: Asphalt paved and bermed containment area at truck dock. Tractor trailer parking in background.

PHOTOGRAPH

6

VIEW

Northwest

PHOTOGRAPHS
BY

Baker



Comments: Location of May 1998 soil sampling and removal due to tracked waste incident.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: World Resources Company

PHOTOGRAPH

7

VIEW

Interior

PHOTOGRAPHS
BY

Baker



Comments: Process wastewater treatment system leach reactor tanks.

PHOTOGRAPH

8

VIEW

Interior

PHOTOGRAPHS
BY

Baker



Comments: Process wastewater treatment system precipitation tanks.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: World Resources Company

PHOTOGRAPH

9

VIEW

Interior

PHOTOGRAPHS
BY

Baker



Comments: Tanks used to collect rain water from the roof and outside containment area.

PHOTOGRAPH

10

VIEW

Interior

PHOTOGRAPHS
BY

Baker



Comments: Monitoring well PAF-W5 located inside containment building in the finished product storage area.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: World Resources Company

PHOTOGRAPH

11

VIEW

Southwest

PHOTOGRAPHS
BY

Baker



Comments: Flammable storage and liquid loading area on south side of containment building.

PHOTOGRAPH

12

VIEW

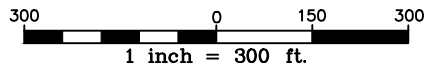
East

PHOTOGRAPHS
BY

Baker



Comments: Monitoring wells PAF-W2D and PAF-W2S located on east side of property.



LAT=40°41'13.12"N
LON=76°13'58.72"W

Source:www.pasda.psu.edu 2008

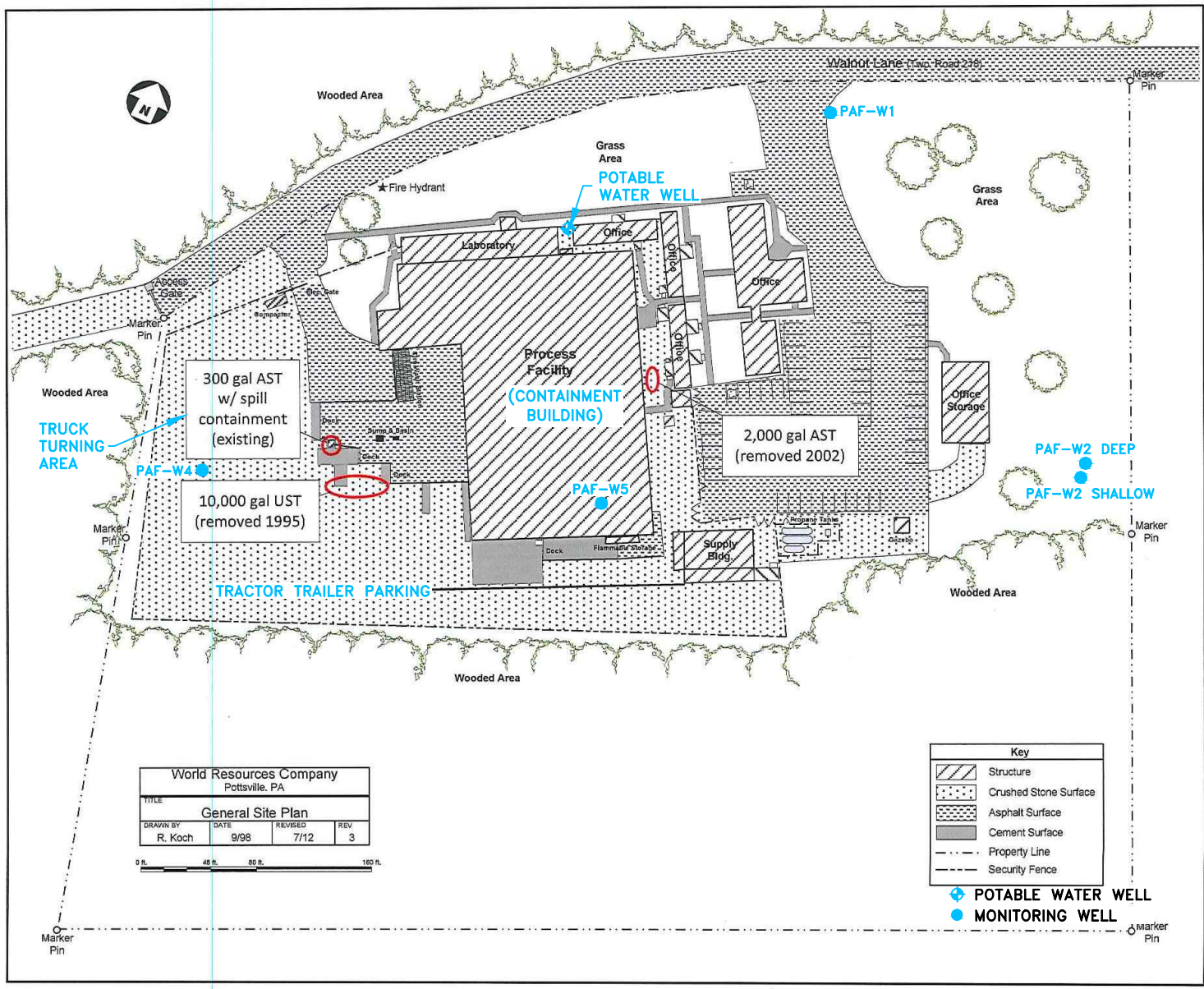
SCALE: 1" = 300'
S.O. NO.: 120690
DSN/DWN:JBM/RRR

DATE:OCTOBER 2011
FILE: 120690-WR_01
CHK: SRF

Baker

MICHAEL BAKER JR., INC.
MOON TOWNSHIP, PENNSYLVANIA

FIGURE 1
FACILITY LOCATION MAP
WORLD RESOURCES COMPANY
POTTSVILLE, PENNSYLVANIA



SOURCE:
WRC LETTER DATED JULY 26, 2012
EDITS IN BLUE ADDED BY BAKER

SCALE: AS SHOWN DATE: JULY 2012
S.O. NO.: 120690 FILE: 120690-WR_04
DSN/DWN: JBM/RRR CHK: SRF

Baker MICHAEL BAKER JR., INC.
MOON TOWNSHIP, PENNSYLVANIA

FIGURE 2
FACILITY LAYOUT
WORLD RESOURCES COMPANY
POTTSVILLE, PENNSYLVANIA

Inventory of Documentation and Reference Documents

The following is a list of documents in the order referenced in the report:

Document Date	Document
May 27, 1982	WRC Letter to PADEP
February 12, 1993	Part A Hazardous Waste Permit Application Submission
October 14, 1998	ISO Award
August 23, 2011	Schuylkill County Assessment Bureau website
April 16, 2001	Waste Analysis Plan
February 1, 1984	Wastewater Delisting
February 2, 2002	PADEP Grants Waste Variance
March 18, 1991	Consent Agreement Executed
May 23, 1984	PAR00054004 Issued Reference
Undated	USEPA Determination - Chronology of Events
January 6, 1986	Change in ID Number
September 24, 1986	NOV
July 31, 1987	PADEP Internal Memo
July 6, 1989	Notice of Trial
February 28, 1990	PADEP Order
March 27, 1990	WRC Appeal of 1990 02 28 Order
March 8, 1991	Consent Agreement
March 21, 1995	PADEP to USEPA on PBR
September 22, 1989	Storage Permit Application
April 17, 1991	TSD Application
April 17, 1991	Waste Storage Pile Application
September 6, 1991	Closure Plan Cost
January 3, 1993	Township Agreement
May 10, 2001	PPC Plan
January 1, 2010	As Stated by Facility Representative (PPC Plan)
September 13, 1995	WRC submission of Part A and PBR
November 21, 1995	Interim Status Letter
January 11, 1996	Interim Status and PBR Letter
December 16, 1995	As Stated by Facility Representative (PBR does not apply)
March 27, 1998	Part B of the Hazardous Waste Permit Application Modification
December 2, 1998	Request for extension of Part B Application submission
March 9, 1999	PADEP receipt of Part B Application
December 6, 1999	Designated Units
April 3, 2000	Response to Comments
April 25, 2000	PADEP Follow Up Questions
June 16, 2000	WRC Request Meeting
October 1, 2001	Permit PAD981038227
January 16, 2004	Form 13A Permit Modification

July 13, 2005	Class I Permit Modification
February 18, 2009	Variance of Classification
February 19, 2009	Modification to Hazardous Waste Permit
October 27, 2009	Modification to Hazardous Waste Permit
November 4, 2010	TSDF Permit Application Submitted
February 23, 2011	Application Administratively Complete
September 13, 2011	SOOP 54-00062 Granted (Pennsylvania Bulletin)
May 1, 2004	Compliance History
February 20, 1986	NOV
March 4, 1986	Response to 1986 02 20 NOV
March 14, 1986	Response to 1986 02 20 NOV
August 19, 1986	NOV
November 4, 1987	NOV
January 25, 1993	NOV
February 10, 1993	NOV
August 5, 1994	NOV
April 16, 1997	NOV
May 27, 1997	PADEP Rescinds 1997 04 16 NOV
July 10, 1997	057A Plan Approval
March 20, 1998	057A Plan Approval Modification
June 22, 1998	057A Plan Approval Extension
February 2, 1990	016 Plan Approval Modification
April 3, 1993	016A Plan Approval Application
July 2, 1993	016A Modification Application
July 10, 1997	016B Plan Approval
August 13, 2002	016C Plan Approval Extension
May 16, 1986	057 Permit
July 9, 1988	057 Permit Renewal
June 25, 1991	057 Permit Renewal
June 23, 1992	057 Permit Renewal
June 23, 1993	057 Permit Renewal
July 1, 1993	057 Permit Renewal
May 21, 1999	057A Permit
May 12, 1997	057A Modification to Plan Approval
December 20, 1989	016 Permit Cover Letter
July 9, 1990	016 Permit Renewal
June 25, 1991	016 Permit Renewal
June 25, 1992	016 Permit Renewal
July 1, 1993	016 Permit Renewal
May 12, 1997	016 Permit Modification
April 21, 1994	016A Permit

May 21, 1999	016B Permit
August 9, 2001	016 B Permit Modification Request
November 21, 2002	016C Permit
September 29, 2005	SOOP Permit 54 00062
April 18, 1991	NOV
August 20, 1993	NOV
May 2, 1994	NOV
May 20, 1994	Response to 1994 05 02 NOV
June 1, 1994	Penalty Assessed
October 15, 1993	NOV
September 2, 1993	Response to 1994 05 02 NOV
October 4, 1994	Consent Order
October 25, 1996	Consent Order Letter
December 2, 1996	NOV
October 17, 1996	Response to 1996 10 16 Odor Complaint
January 15, 1997	Consent Agreement
April 24, 1984	Request to Install Tanks
June 25, 1984	Approval to Install Tanks
December 12, 2004	Interim Proof of UST Registration
August 7, 1995	30 Day Removal Notice
October 2, 1995	UST Closure Report
February 5, 1996	Proposed 2,000 Gallon AST
February 9, 1996	Tank Registration
July 27, 2012	Letter Response from Facility
May 24, 2010	Groundwater Sampling Results
November 28, 2010	Groundwater Sampling Results
May 1, 1998	Waste Inspection Report-Tracked Waste Incident
December 29, 1997	Mobile Lab Sampling
July 5, 2000	Mobile Lab Sampling
1986 to 2010	Inspection Reports
August 27, 2007	RCRA Compliance Evaluation and Inspection
September 24, 1986	NOV
August 21, 1998	NOV
September 11, 2003	NOV
1983 to 2009	Air Inspection Reports