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April 10, 2007

Mr. Timothy Dieffenbach
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

RE: Former Carborundum Site, Sanborn, New York
Sanitary and Storm Sewer Infiltration Evaluation

Dear Mr. Dieffenbach:

Parsons, on behalf of the Atlantic Richfield Company, has completed the New York State Department of Environmental Conservation (NYSDEC)-approved evaluation of storm sewer, sanitary sewer, and sump potential remedies at the former Carborundum Site in Sanborn, New York. The field investigation consisted of the collection of closed circuit television (CCTV) and dye testing from the sanitary and storm sewer lines and manholes. It also included a visit to the Metaullics facility to obtain information regarding the furnace pits (vaults) and their sumps.

The evaluation focused on the potential of lining, repairing, or replacing sewers to reduce or eliminate the infiltration of groundwater to the sewer lines. The evaluation also considered the technical issues related to lining the vaults and sumps to prevent infiltration, pumping groundwater from the sumps in the furnace pits to the groundwater treatment plant, and other possible methods to address the sump-generated water. The results of this evaluation are summarized below.

CCTV INSPECTION

As stated in the August 31, 2006 letter to NYSDEC, the purpose of the CCTV inspection was to detect any structural damage, leaking joints, or overflow points in the sewer systems. The CCTV inspection was conducted in accessible reaches of the storm and sanitary sewer system, as shown on Figure 1. During the inspection, it was necessary to remove debris from the sewer to advance the camera. Debris collected from the sewers was containerized and properly disposed.

The CCTV inspection results indicated that infiltration was largely absent in the sewer pipes that were inspected. However, infiltration was observed from the walls of two catch basins and the bottom of MH-3 (see Photographs 1 and 2 in Attachment 1). Detailed written descriptions of the CCTV inspection are also provided in Attachment 1.

DYE TESTING

At the request of NYSDEC, Parsons conducted dye testing of the sumps in the furnace pits (Vaults 1, 2 and 3) in the Metaullics manufacturing facility. The intent of the dye testing was to determine if the sumps discharged to the sanitary or storm sewer.

Dye was injected into the sump in Vault 1. One minute later, dye was observed discharging into a sanitary sewer clean-out adjacent to Vault 1, outside of the north wall of the Metaullics facility. Dye was subsequently observed at the next sanitary sewer clean-out, approximately 80 feet downstream from the first cleanout. Finally, dye was observed discharging from the sanitary sewer line in MH-3. MH-3 discharges to the POTW flume.

Dye was injected into the sumps in Vaults 2 and 3. The sump discharge from Vaults 2 and 3 connect via a "T" into a single pipe. This pipe then runs above the floor and through the south wall of the Metaullics facility. A short time after dye was injected into the sumps in Vaults 2 and 3, it was observed in the sanitary clean-out on the south side of the facility (see D-2 and D-3 on Figure 1). Finally, dye was observed at the sanitary sewer line in MH-3, discharging to the POTW flume.

No dye was observed in the storm sewer during the testing. Storm sewers were checked for dye to confirm that the sumps did not connect with the storm sewers.

SUMP WATER QUALITY SUMMARY

As part of the storm water investigation completed in 2006, water samples were collected from the four sumps. The constituents of concern (COCs) included: methylene chloride, tetrachloroethene (PCE), vinyl chloride (VC), trichloroethene (TCE), 1,1,1-trichloroethane (TCA), 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene, trans-1,2 dichloroethene, cis-1,2 dichloroethene, chloroform, and carbon tetrachloride.

In March 2006, Sump 1 (in Vault 1) had the highest concentration of total COCs at 4,100 ug/l, followed by Sump 2 (Vault 2) at 1,440 ug/l and Sump 3 (Vault 3) at 1,085 ug/l. Sump 1 (Vault 1) also had the highest single COC concentration of 3,500 ug/l of TCE. The next highest concentration of an individual COC was cis-1,2 DCE, which was found in Sumps 1, 2, and 3 at concentrations ranging from 570 to 800 ug/l. Sump 4 had no COCs above the detection limits.

This data was submitted to NYSDEC in May 2006. The May 2006 investigation report is provided as Attachment 2.

POTENTIAL REMEDIES

Data collected during the field activities described above was used to screen potential remedies and technical issues related to isolating or removing groundwater from the vault sumps at the Metaullics Facility to the onsite treatment plant, and other possible methods to address sump-generated water. The evaluation also examined the need for lining, repairing, or replacing the sanitary and storm water sewer lines to reduce or eliminate groundwater infiltration into the sewer lines. Prior to selection of any remedial option, more detailed evaluations will be conducted, including implementation issues, cost-effectiveness, feasibility, hydraulic calculations, and impacts to the treatment system (see Further Evaluation below).

Sumps

After review of the data collected during the field activities described above, three options are being considered to address the presence of COCs in the sumps at Metaullics. These include: 1) eliminate groundwater inflow; 2) isolate, collect and treat groundwater from the sumps; and 3) utilize hydraulic control to lower the groundwater level below the sumps.

Option 1 – Eliminate Groundwater Infiltration

- Eliminate the sumps by filling them in, or line the walls and floors of the sumps to eliminate groundwater from entering into the sumps. Also, repair portions of the vault walls and floors, as needed. No other groundwater treatment would be required.

Option 2 - Isolate, Collect and Treat Sump Water

This option assumes that groundwater infiltrating to the sumps can be segregated from process water and any impacts from operations, and conveyed to the existing groundwater treatment system (GWTS). In order to use the existing treatment system, pre-treatment of water collected from the sumps is needed to avoid any adverse impacts on the GWTS. It is also assumed that the GWTS is able to handle the additional pre-treated water and contaminant mass without upset to the system and violation of the SPDES permit.

The conceptual system would consist of:

- Metal sleeves or brick risers would be installed on each of the four sump pits to prevent process water or any contributions from plant operations from entering the sumps. This would isolate groundwater that infiltrates the sumps. Portions of the vault walls and floor would also be repaired, as needed, to eliminate or reduce inflow of groundwater.

- The sump water would be segregated from plant process waters by installing a new pipe header near Sumps 2 and 3. The discharge from all four sumps (Sumps 1, 2, 3 and 4) would then be diverted to the new header.

- Water collected from the sumps will require pre-treatment before it can be conveyed to the GWTS.

- Assuming sump water has received some pre-treatment, treated water can be conveyed via a new underground pipeline from the south side of the Metaullics building to recovery well P-2. A connection would be made at P-2, where the water will be combined with groundwater from the recovery wells.

Option 3 - Groundwater Hydraulic Control

This option considers lowering groundwater levels below the bottom of the vaults to eliminate inflow into the sumps.

- Groundwater Trench: A groundwater collection trench would be constructed on the south side of the Metaullics manufacturing building. The trench would be installed to the top of the bedrock surface A sump at the end of the trench would collect the water. A new underground line would convey the captured water from the collection sump to the existing GWTS, similar to the option described above.

- Pumping Wells: One or more pumping wells installed on the south side of the building or in the building near the vaults to control groundwater levels. Water would be transferred to the existing GWTS similar to the option above.

Storm Sewer Repairs

Based on the CCTV information, the only significant inflow of water into the sewer system was in the vicinity of Manhole 3A (MH-3A on Figure 1). This manhole and two nearby catch basins can be lined to reduce the inflow of water into the storm sewer system. The lining material would be comprised of a hydraulic epoxy cement.

FURTHER EVALUATION

The potential remedies discussed above require a more detailed evaluation before a remedy can be selected. Atlantic Richfield will work with Metaullics to discuss roles and responsibilities for the options presented above. The evaluations will include hydraulic calculations, and an assessment of implementation issues, cost-effectiveness, feasibility, and impacts to the treatment system.

To estimate the volume of groundwater and determine any pre-treatment requirements, a monitoring program will be considered. Specifically, the program will evaluate chemical concentrations in the sump water over time, and estimate expected flow rates from the sumps, a collection trench, or additional recovery wells. The following program will be discussed with Metaullics, and may include:

1. Sample water from the four sumps monthly over a 4-month period to determine pre-treatment requirements.
2. Install flow meters to monitor each sump over a two-month period to determine pump-out volumes on a daily basis.
3. Temporarily isolate the sumps and monitor flow for two months without any contribution from “process water or operations” from within the vaults.

4. Model the groundwater collection trench and pumping wells alternative, to determine if groundwater levels can be reasonably controlled in the vicinity of the sumps.

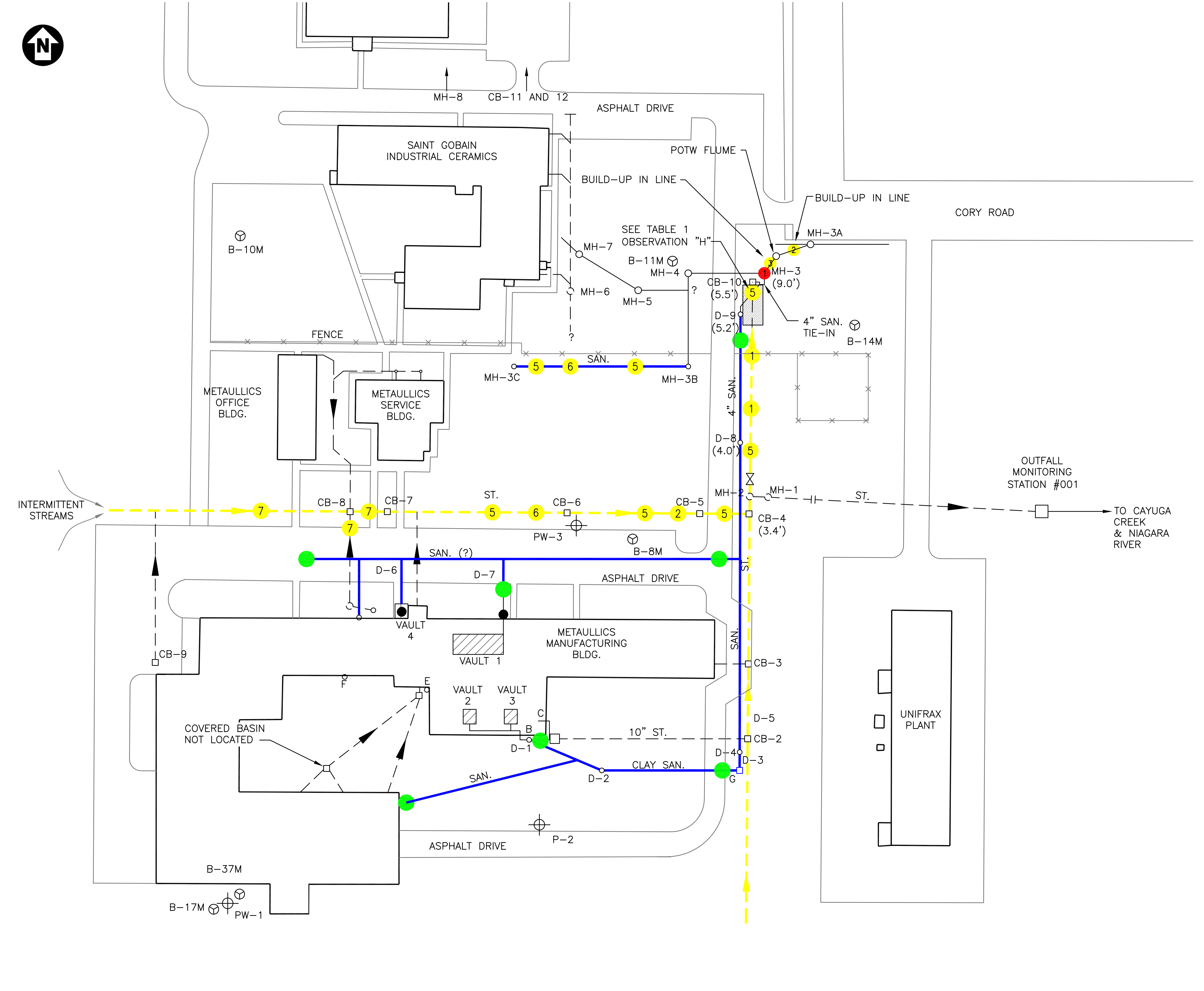
If you have any questions concerning the proposed remedies, please contact Mr. William B. Barber at (216) 271-8038.

Sincerely,

Mark S. Raybuck

Mark S. Raybuck
Project Manager

cc: Mr. Robert Locey (NYSDEC)
Mr. W. Barber (Atlantic Richfield)
Mr. Kevin Scott (Metaullics)
Mr. G. Hermance (Parsons)
File (442156 No. 9)



NOTE:

THE UTILITIES LOCATIONS ARE BASED ON FIELD OBSERVATIONS, PREVIOUS DRAWINGS, AND VERBAL COMMUNICATIONS WITH SITE WORKERS. THE UTILITIES HAVE NOT BEEN SURVEYED. SEE SUPPORTING DOCUMENTS FOR SPECIFIC DESCRIPTIONS.

LEGEND:

- SANITARY CLEANOUT OR DISCHARGE POINT (DEPTH TO INVERT)
- CATCH BASIN
- MANHOLE
- SUMP PUMP DISCHARGE LOCATION
- VALVE
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- B-14M WELL LOCATION

MAP LEGEND:

- SMALL DIAMETER SANITARY SEWER NO VIDEO INSPECTION
- MANHOLE DEFECTS:
  1. DAMAGED CONE/WATER ENTERING THROUGH MANHOLE WALL
- STRUCTURAL PIPE OBSERVATIONS:

1. SAG (GREATER THAN 20 FEET)
2. DEBRIS
3. OFFSET JOINT
4. CRACKED PIPE
5. CHANGE IN PIPE SIZE OR MATERIAL
6. PIPE DEFORMED
7. LATERAL WITH POSSIBLE GROUNDWATER INFILTRATION

80 40 0 80 160

SCALE: 1"=80'

FIGURE 1

ATLANTIC RICHFIELD COMPANY
FORMER CARBORUNDUM FACILITY

SITE PLAN AND SEWER UTILITIES

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ATTACHMENT 1

CCTV INSPECTION DATA
(PHOTOGRAPHS AND OBSERVATIONS)

Project Number: 442156.02323 Photograph Number: 1
Client/ Location: Elm Holdings / Sanborn, NY
Description: Infiltration at the bottom of Manhole # 3.

Project Number: 442156.02323 Photograph Number: 2
Client/ Location: Elm Holdings / Sanborn, NY
Description: Infiltration at the bottom of Manhole # 3

CCTV Observations of the Storm and Sanitary Sewers

- Starting in sanitary sewer at manhole 3C (MH-3C) and video taping downstream east to manhole 3B (MH-3B). At 2.8 feet pipe changes from 6 inch to 8 inch, at 118.6 feet the pipe is deformed, at 212.3 feet pipe changes from 8 inch to 6 inch, and at 212.3 feet end of inspection.

- Starting in storm sewer at catch basin 5 (CB-5) and video taping upstream west to catch basin-6 (CB-6). At 0.0 feet heavy debris removed, at 42.5 feet tap coming into the storm sewer, at 52.6 feet pipe changes from corrugated metal to black PVC, and at 119.3 feet end of inspection.

- Starting in storm sewer at catch basin 6 (CB-6) video taping upstream west to catch basin 7 (CB-7). At 37.0 feet pipe is deformed, at 80.0 feet pipe changes from black PVC to corrugated metal, and at 113.8 feet end of inspection.

- Starting in storm sewer at catch basin 8 (CB-8) video taping upstream west to the end of the pipe. At 105.6 feet tap dripping into the storm sewer and at 132.9 feet end of inspection.

- Starting in storm sewer at catch basin -5 (CB-5) video tapping downstream east to catch basin 4 (CB-4). At 0 to 38 feet surface corrosion on pipe, at 38.3 feet pipe changes from 24 inch to 12 inch, and at 38.3 feet end of inspection.

- Starting in storm sewer at catch basin 7 (CB-7) video taping upstream west to catch basin- 8 (CB-8). At 6.0 feet tap dripping into the storm sewer, at 59.4 feet capped off pipe in catch basin 8 with heavy drip, and at 59.4 feet end of inspection.

- Starting in storm sewer at catch basin 10 (CB-10) video taping upstream south to catch basin -4 (CB-4). At 25.1 feet pipe changes from PVC to corrugated metal, at 48.8 feet surface corrosion on pipe, at 104.3 feet to 138 feet sag in pipe, and at 146.5 feet open joint in pipe (no infiltration through open joint at the time of inspection), at 171.4 feet to 183 feet sag in pipe, at 181.4 feet pipe changes back to PVC, and at 183.2 feet end of inspection.

- Starting in storm sewer at catch basin 4 (CB-4) video taping upstream south to catch basin -3 (CB-3). Water level was too high in pipe, could not inspect.

- Starting in combination storm and sanitary manhole 3 (MH-3) video taping downstream to East to POTW Flume (Meter). At 17.8 feet pipe joint is severely offset video camera could not pass, at 17.8 feet end of inspection.

- Starting in sanitary manhole 3A (MH-3A) video taping upstream west to POTW Flume (Meter). Severe ground water infiltration coming into MH-3A around the upstream pipe, and at 12.3 feet blockage in pipe, video camera could not pass, end of inspection.

ATTACHMENT 2

INVESTIGATION OF STORM WATER AT THE METAULLICS FACILITY
MAY 2006

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May 8, 2006

Mr. Timothy Dieffenbach
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

RE: **Investigation of Storm Water at the Metaullics Facility**
Former Carborundum Site, Sanborn, NY

Dear Mr. Dieffenbach:

Parsons, on behalf of Atlantic Richfield Company, submits this letter report to document the results of the New York State Department of Environmental Conservation (NYSDEC) approved investigation into the potential impact to the Metaullics storm water discharge from site-related constituents of concern (COCs) associated with the groundwater remediation. The COCs include methylene chloride, tetrachloroethene, vinyl chloride (VC), trichloroethene (TCE), 1,1,1 trichloroethane, 1,1 dichloroethane, 1,1 dichloroethene, trans-1,2 dichloroethene, 1,2 dichloroethene (total), chloroform, and carbon tetrachloride. The approved scope of work includes an evaluation of available data, sewer system inspections, and collection of aqueous samples from the vault sumps.

1.0 SCOPE OF WORK

The following tasks were completed as part of the scope of work:

- Obtained and reviewed historical and recent data regarding the sewer system and sumps;
- Inspected the storm and sanitary sewers; and
- Inspected and sampled sumps within the vaults at the Metaullics facility (see Table 2).

2.0 RESULTS

2.1 Previous Investigations

Available information has been reviewed. The following is a summary of findings from previous work:

- Sampling (prior to 1997) showed the presence of COCs in Sump 1 (bake sump), Sump 3 (AC pit), and Sump 4 (elevator sump).
- The COC concentrations varied by two to three orders of magnitude between the sumps.

- It appears that there are two potential areas where COCs may be entering the sewer system: (1) through the sumps, and (2) groundwater infiltration north of the Metaullics manufacturing building

- Stream flow enters into the storm sewer system during storm events.

- Several water supply lines exist on-site and to the east of the property line. Concentrations of chlorine and fluoride, in addition to the elevated water levels, suggest that potable water from a broken water line may be influencing flow volume at the POTW discharge.

2.2 Sewer Investigations

The sewer field investigation was conducted on March, 7th, 10th, and 30th , 2006. During the sewer investigation, depth to inverts and piping sizes were measured. Flow pattern and condition of the system were also inspected. Figure 1 shows a plan view of site sewers, including the storm and sanitary sewers. Figure 2 is a cross-section schematic summarizing the observations and measurements. Figure 2 shows in plan view, the approximate locations of site water supply utilities. Table 1 is a map key detailing specific observations and measurements made during the investigation. A photographic log is provided in Appendix A. Results from the 2006 investigation indicate that the storm and sanitary sewer systems are separate systems upstream of the tie-in near the POTW discharge. This tie-in is located between CB-10 and MH-3. Each system has various types of piping and various invert elevations.

Hydraulic head (water level elevation) measurements were collected in the Top-of-Rock and Zone 1 wells. A water level contour map was developed to compare hydraulic head to the invert measurements of the sewer system. Although hydraulic head fluctuates up to approximately ten feet in some wells, the March 8, 2006 measurements were in the higher range of these fluctuations (i.e., water level closer to surface).

Storm Sewer

During the investigation, it was noted that the storm sewer was constructed of various materials, including corrugated steel, PVC, and concrete. A majority of the storm water piping is corrugated steel, of unknown integrity. In February 2006, Metaullics replaced a section of the 18-inch corrugated steel storm sewer with PVC pipe (east of location D-9 on Figure 1). Based on observations of the removed piping, the original section of sewer, located south of CB-10, was in poor condition.

The storm system ranges from less than one foot below grade at upstream catch basins, to five feet below grade at CB-10 (prior to sanitary tie-in). Most of the storm system was above the interpolated hydraulic head measured on March 8, 2006. However, the section of storm sewer from approximately MH-2 (near the former SPDES discharge) to the sanitary tie-in was near the March 8 hydraulic head. During the field visit, little to no water was observed flowing in the storm sewers. Typically, the catch basins had a small amount of water in them, but the water was below the inverts. This water was likely due to recent rainfall that had not evaporated from the catch basins.

At the west side of the property, the two intermittent streams channel directly into the storm sewer. At the time of field visit, there was no water running in the streams, or in this section of the storm sewer. However, during precipitation events, substantial runoff flows into the storm sewer (O&M Enterprises, verbal communication, March 8 2006).

Sanitary Sewer

The sanitary sewers were constructed of various materials including PVC, clay tile, concrete and brick. The integrity of the piping is unknown. At least one sanitary clean-out was broken off at the surface, potentially allowing runoff to enter the sanitary. Several manholes appeared to be sealed properly, while others could potentially leak storm water. The integrity of the manholes with respect to groundwater infiltration is not known.

The sanitary sewer is an aggregation of newer and older construction. The older system shows several separate sewer systems, each with a septic tank and leach field. The system was upgraded (date unknown) to the present configuration, but included some of the existing infrastructure. For example, the sanitary line south of the manufacturing building previously extended to a leach field east of the present-day property line. Currently, there is a lift station (G on Figure 1) that pumps water northerly into the newer sanitary system.

Several notable observations were:

- Four sumps from the manufacturing building discharge to the sanitary sewer;

- Process cooling water discharges with water from Sumps 2 and 3 to the sanitary system at location D-1 (Figure 1). Based on visual observation only, there was a constant flow of approximately 5 to 10 gallons per minute (GPM) at location D-1.

- From the north side of the Metaullics building to the POTW shed, most of the sanitary sewer is near or below the March 8 hydraulic head;

- The section of sanitary sewer after the tie-in with the storm sewer (near CB-10), based on depth to inverts and historic water level measurements, may be up to five feet lower than the hydraulic head, at times; and

- Reportedly due to root penetration, a portion of the clay sanitary sewer was replaced with PVC by Metaullics (D-2 on Figure 1).

2.3 Sumps

Observations and measurements were made during the week of March 6, 2006. Water that had collected in the sumps was sampled on March 30, 2006. Mr. Tim Dieffenbach of NYSDEC was present during the sampling event.

As part of the Metaullics processing, below-grade vaults house manufacturing equipment. Four of these vaults have sump pits fitted with pumps to remove infiltrating water. The water from the sumps is discharged to the sanitary sewer. Figure 1 shows the plan view location of the vaults and the discharge location of the sumps. Three vaults are located in the building and one vault is outside, adjacent to the building. Figure 2 shows the approximate location and depth of the vaults as projected onto cross-section A-A'. Table 1 describes the specifics of each sump.

The measurements show that the vaults vary in construction and size. In plan view, the vaults range from approximately 45 by 17 feet to approximately 8 by 5 feet. The deepest vault is 14.2 feet below the floor of the building, and the shallowest vault is 7 feet below the driveway. The vaults are either steel or concrete, and the sumps are likely made of concrete or native materials. Observations made during the field inspection of the sumps included:

- Sumps 1 and 3 pump more water than the other sumps, based on visual observation only;
- The sumps are approximately one to seven feet below the March 8, 2006 hydraulic head; and
- Sump 3 may be close to the top of rock.

Water samples were collected from each of the four sumps on March 30, , 2006. The samples were analyzed for methylene chloride, tetrachloroethene, vinyl chloride, trichloroethene, 1,1,1 trichloroethane, 1,1 dichloroethane, 1,1 dichloroethene, trans-1,2 dichloroethene, 1,2 dichloroethene (total), chloroform, and carbon tetrachloride. The results are shown on Table 2, and summarized below. The analytical data package from the laboratory is contained in Appendix B.

- All parameters were non-detect in Sump 4, located outside the manufacturing building;
- Sump 1 TCE result of 3,500 ug/L was higher than the other three sumps;
- Sump 2 result for TCE was 440 ug/L, Sump 3 was 9 ug/l, and Sump 4 was non-detect; Concentrations of VC were higher in Sumps 2 and 3 than in Sump 1, at 120, 440, and 6.3 ug/L respectively.

3.0 CONCLUSIONS

The scope of work, as provided in the November 30, 2005 work plan was completed during February and March of 2006. The work included an evaluation of available data from the Metaullics facility, sewer system inspections, and collection of aqueous samples from the vault sumps located at the Metaullics facility. The following conclusions were developed, based on the work conducted, and results of chemical analysis.

- The storm and sanitary sewers vary in construction, location, and integrity. During prolonged wet-weather conditions, groundwater may infiltrate into either sewer system through cracks, breaks and other imperfections. Based on depth of inverts and water level measurements in nearby wells, the most probable area for infiltration to occur to the sewers is on the northern side of the manufacturing building toward the POTW shed. In this area, at least part of the sanitary sewer and storm sewer is below groundwater levels.

- The sanitary sewer is typically lower in elevation than the storm sewer, and may therefore, depending on line integrity, have a higher potential for groundwater infiltration.

- The sumps directly discharge their contents to the sanitary sewer system.

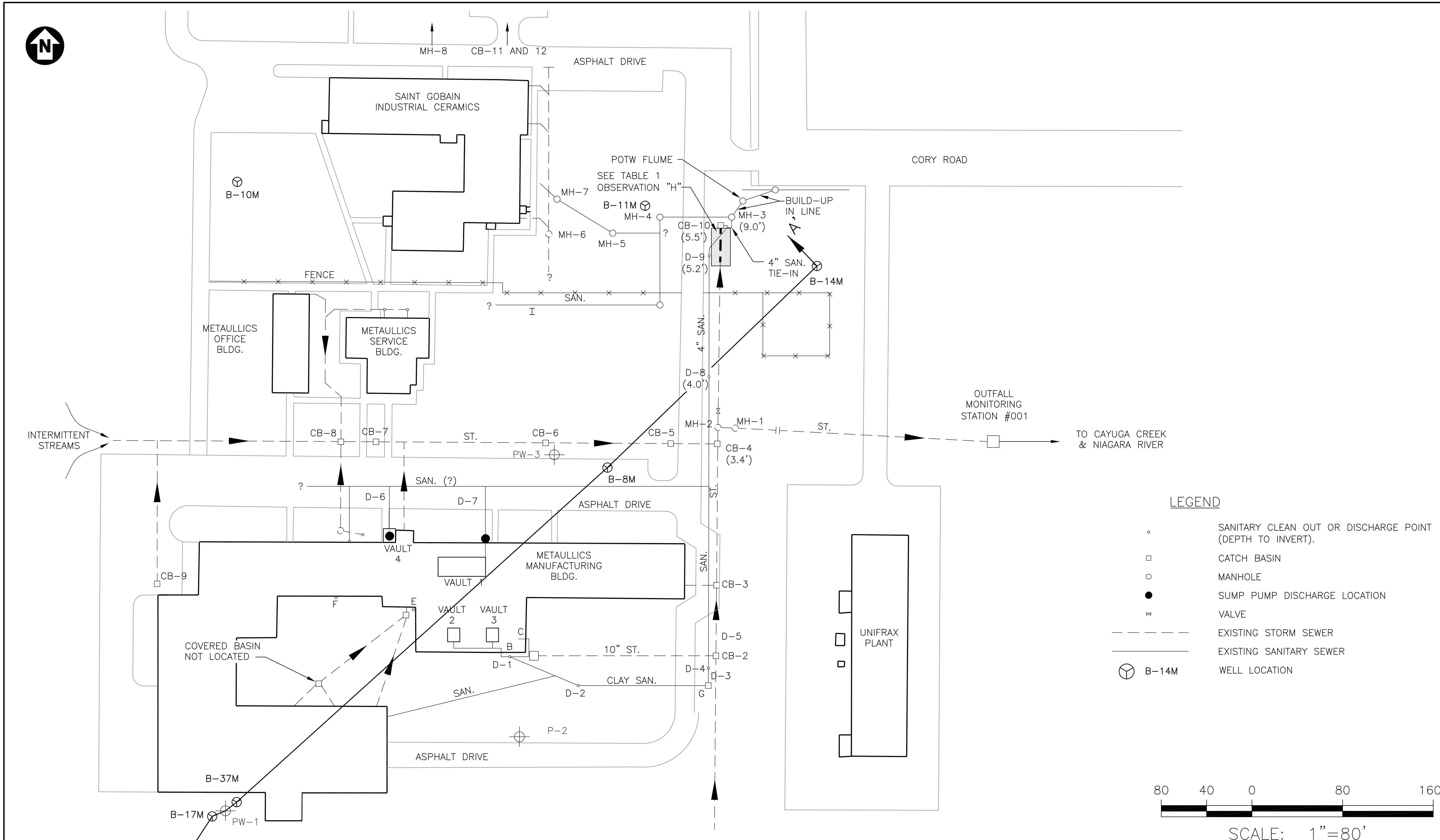
If you have any questions concerning this investigation, please contact William Barber of Atlantic Richfield Company at (216) 271-8038.

Sincerely,

Mark S. Raybuck

Mark S. Raybuck
Project Manager

cc: W. Barber, Atlantic Richfield Company
G. Hermance, Parsons
Mathew Forcucci, NYSDOH
R. Locey, NYSDEC
K. Scott, Metaullics
File, 442156 No. 9



NOTE:

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FIGURE 1

ATLANTIC RICHFIELD COMPANY
FORMER CARBORUNDUM FACILITY
SITE PLAN AND SEWER UTILITIES

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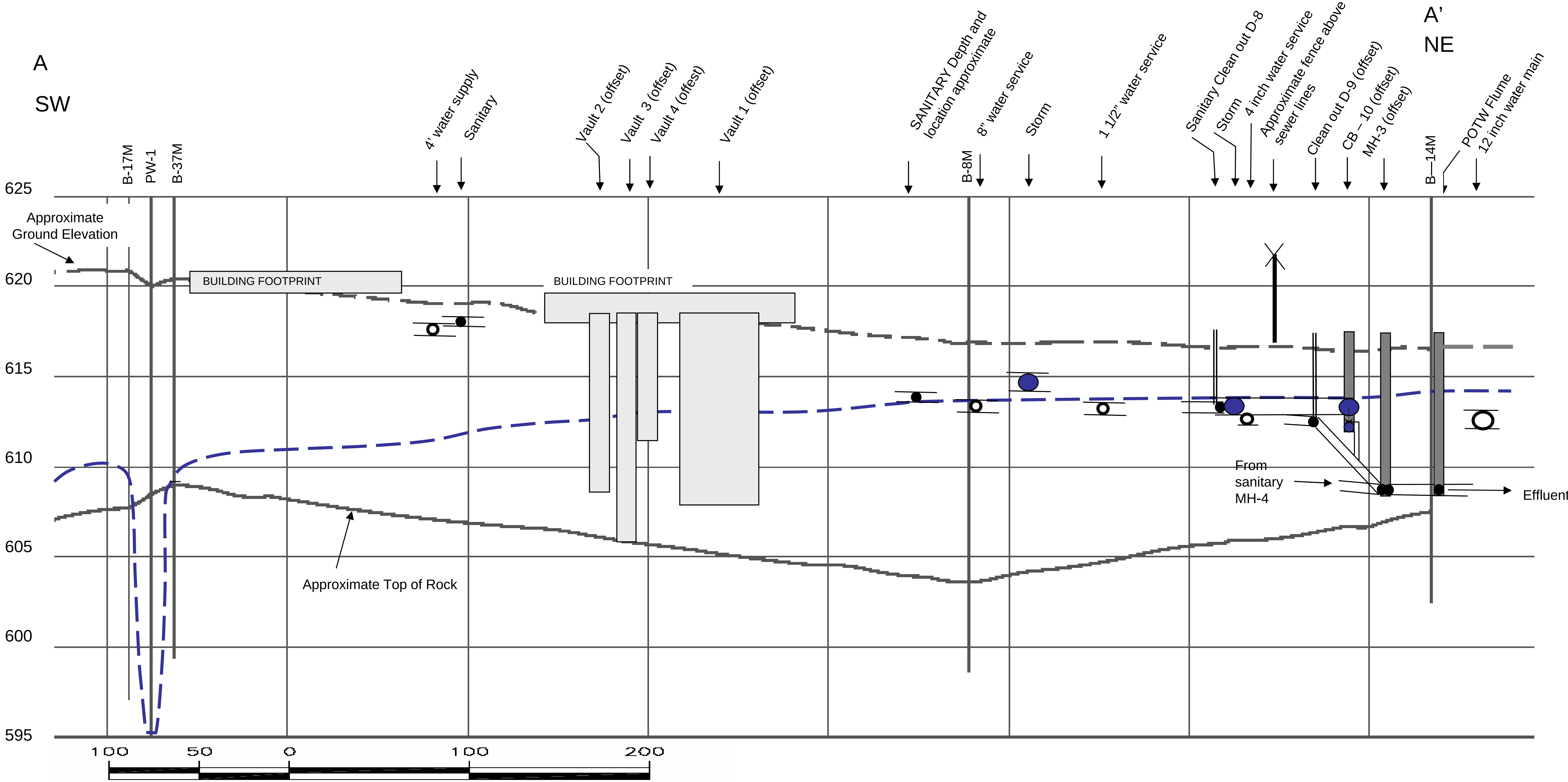

Legend:		
Storm sewer		Approximate Groundwater potential March 8, 2006
Sanitary sewer		
Potable water supply		
Vault or manhole		

Approximate offset distances:

1) Vault 2 = -20 feet
2) Vault 3 = -50 feet
3) Vault 4 = + 80 feet
4) Vault 1 = +12 feet
5) Clean out D-9 = +72 feet
6) CB-10 = +85
7) MH-3 = +86
8) POTW flume = +88 feet

Positive values indicate northwest direction to feature (i.e. into the page)
Negative value indicate southeast direction to feature (i.e. away from the page)

Notes:

1) Locations and depths approximate;
2) Groundwater potential elevation based on March 8, 2006, Top of Rock and Zone one. Varies seasonally up to ten feet in some wells;
3) No elevation data from H&A, depth to inverts and bottom of vault are based on depth from ground elevation;
4) Ground and top of rock elevation based on well survey and drilling depths;
5) Water service and water main utility depths are unknown;
6) Some of the objects have been projected onto the cross-section from the ground surface position, see offset distances;

ATLATIC RICHFIELD COMPANY
FORMER CARBORUNDUM FACILITY
SANBORN, NY

FIGURE 2
Sewer Investigation Cross-section

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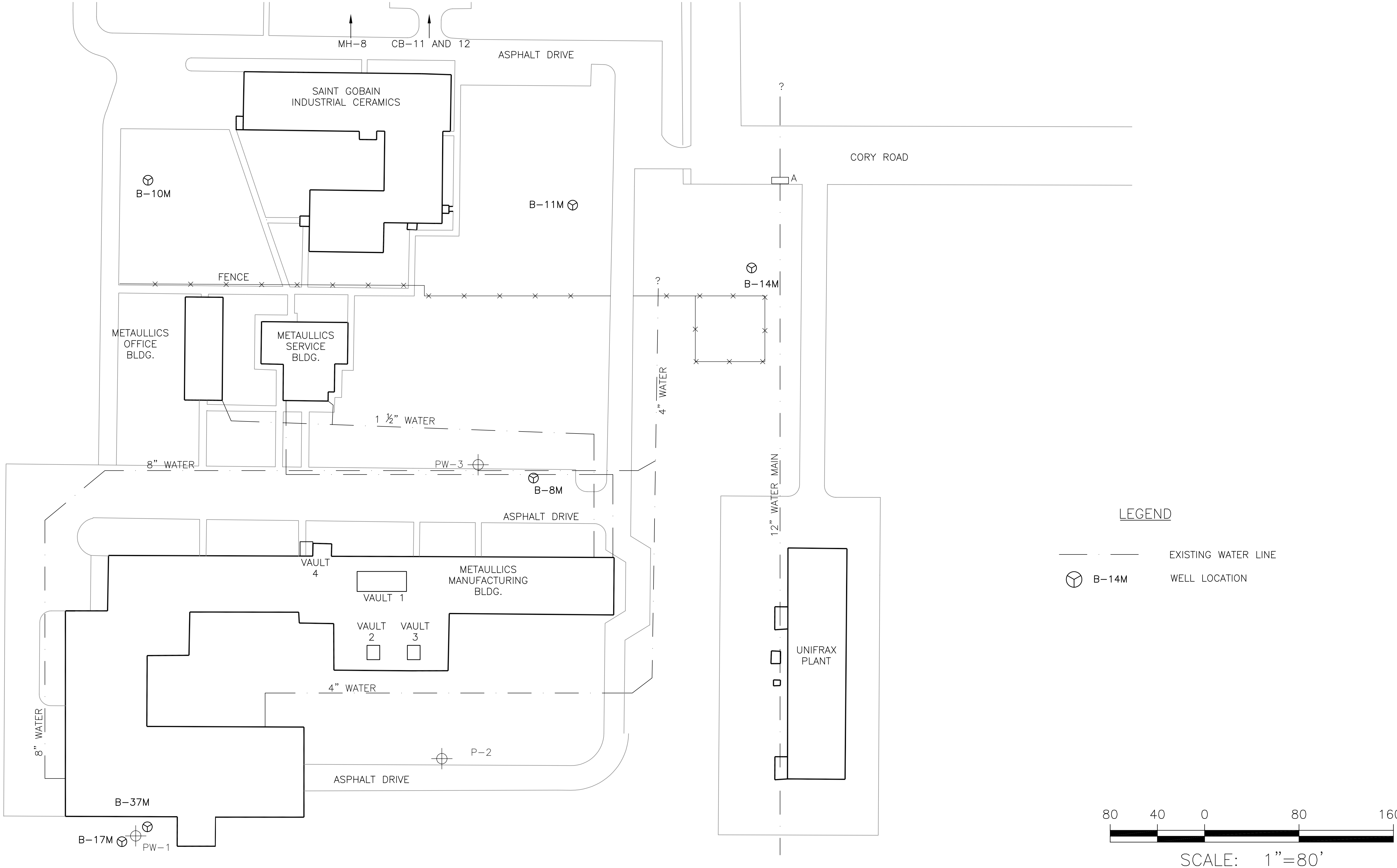

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FIGURE 3

ATLANTIC RICHFIELD COMPANY
FORMER CARBORUNDUM FACILITY
SITE PLAN AND WATER SUPPLY UTILITIES

TABLE 1

SANBORN SEWER INVESTIGATION

MAP KEY FOR FIGURE 1

Vaults and sumps:
Vault #1 (called baker pit by Metaullics): 45’ x 17’ x 13’ (deep, top of vault about one foot above ground surface). Constructed of concrete, holds approximately 9 furnaces. Sump in the northeast corner of the vault discharged to an outside, above-ground PVC vertical pipe. The vertical pipe “T’s” into the sanitary under the driveway (per verbal communication with site workers on March 7, 2006).
Vault #2 (Preheater 1): 8’ x 5’ x 11.5’ (depth was below top of vault, which is 0.4’ above floor.) This vault holds one furnace, located on the south side of the building. The discharge line connects with line from Vault #3 and discharges into a pipe that goes through the south wall of the building, and into the sanitary line vertical pipe, D-1 (verbal communication with site workers on March 7, 2006).
Vault #3 (Autoclave #3 or AC3): 11’ x 4’ x 16.3’ (depth is below top of vault, which is 1.2 feet above floor.) The vault is constructed of steel, and may have a concrete floor (per verbal communication with site workers on March 7, 2006).
Sump #4 (elevator pit): 9.7’ x 9’x 7’ (depth is below parking lot/drive way level.) This sump is outside the north side of the building. This sump houses the elevator for the process sand tank. Sand in bottom of vault. Sump discharge line has a filter on it to catch sand. Sump discharged to the sanitary under the driveway (verbal communication with site worker on March 7, 2006).
Observations
A – Area where County workers excavated to water supply line to inspect for leaks.
B – Vault sumps 2 and 3 discharge with process water to sanitary, D-1
C – Vacuum pump discharges cooling water to sanitary sewer through PVC pipe along outside of the wall to D-1.
D – Overflow process water and nitrogen “blow-down” water discharge to sanitary line.
E – Roof drain discharges to ground.
F – Four-inch steel pipe comes out of the ground and 90’s into building. 3’ x 3’ hole dug around pipe with ~ 2 feet of standing water in hole. (water likely from recent rain).

TABLE 1

SANBORN SEWER INVESTIGATION

MAP KEY FOR FIGURE 1

G – Lift station for sanitary line. Depth to inverts: influent 5.7 feet (below top of manhole), 2.9 feet (below driveway grade); effluent 2.5 feet (below top of manhole), 0.3 feet below local grade. Potentially a location of the former septic tank.
H – Feb. 2006 storm line replacement, samples with fluoride and chlorine concentrations.
I – From plant shower room and main office.
Pipe descriptions
D-1 – Process cooling water and sump discharge to sanitary.
D-2 – Clean-out pipe for sanitary. Parsons oversaw recent pipe replacement. PVC (new) connects to clay tile (old). Depth to inverts approximately 2 to 3 feet below grade.
D-3 – Line from lift station.
D-4 – Sanitary clean-out, Invert is 3.7 from top of vent, vent is 2.5 above driveway pavement.
D-5 – Storm sewer line North of CB-2, 8 inch diameter. Depth to invert 3 feet from top of CB. CB is 1.5 feet above driveway. Treatment plant conveyance lines run through storm drain. No water in CB-2.
D-6 and 7 – Line to sanitary from sump discharges.
D-8 – Sanitary clean out. Depth to invert is 4.6 feet below top of pipe, 4.6 feet below grade.
D-9 – Sanitary clean out, depth to invert is 5.2 feet below grade, pipe is broken at grade.
Catch basins
CB–1 – Receives flow from roof drain. 10-inch pipe, invert is 1.5 feet below grade. Discharges east to CB -2.
CB–2 – Receives flow from CB – 1. Depth to invert is 3 feet below top of CB, CB is 1.5 feet above driveway. May receive flow from south.
CB–3 – 8-inch line from CB-2 (2.5 feet to invert), and 4-inch line from building (depth to invert is 1.5 feet). Discharges to the north. CB is at grade.
CB-4 – Depth to invert is 3.9 feet.

TABLE 1

SANBORN SEWER INVESTIGATION

MAP KEY FOR FIGURE 1

CB-5 through CB-7 – 10-inch lines west to east, 2 feet below grade to invert. Corrugated steel pipe. Standing water.
CB-8 – Invert depths 4.8 feet, west to east, 15-inch corrugated pipe. Four inch PVC from the north, slight flow. Eight inch corrugated pipe from the south.
CB-9 – One foot to invert, 4-inch pipe.
CB-10 – 15-inch line (line that was replaced). Five foot depth to invert. Discharge pipe to east is 6-inch PVC, depth to invert is 5.5 feet. On 3/7/2006 there was no flow through CB, but sound of running water was heard.
CB-11 and 12 – In the northern parking lot. Pipe with sump to west. Connection to other system unknown.
Manholes:
MH-1 – Previous line to SPEDES discharge. Valves closed.
MH-2 – Depth to inverts 3.85 feet. 15-inch storm line.
MH-3 – After storm and sanitary sewers combine. Eight and 10-inch pipe influents, 10-inch effluent. Three to four inches of flow on 3/7/2006 (dry conditions). Depth to inverts is 9.3 feet. Manhole in good condition.
MH-4 – 8-inch PVC pipes. One inch of flow on 3/7/2006, 8.4 feet to inverts, leaks in frame.
MH-5 – Good condition 6-inch PVC pipes, ½-inch of flow. Seven feet to inverts.
MH-6 – North-south 10-inch corrugated piping, probably storm sewer. Brick cone and barrel, 6.5 feet to inverts. Mineralization on brick.
MH-7 – Shallow sanitary, three feet to inverts, debris in line. 6-inch PVC.

Table 2
Former Carborundum Facility, Sanborn, NY
Metaullics Sump Sample Results
March 2006

Former Carborundum Facility Sump Analytical Results Sanborn, New York March 2006		Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled:	SUMP 1 A6335001 STL A06-3350 Water 3/30/2006	SUMP 2 A6335002 STL A06-3350 Water 3/30/2006	SUMP 3 A6335003 STL A06-3350 Water 3/30/2006	SUMP 4 A6335004DL STL A06-3350 Water 3/30/2006
CAS NO.	COMPOUND	UNITS:				
	VOLATILES					
75-09-02	Methylene chloride	ug/l	ND	ND	ND	ND
127-18-4	Tetrachloroethene	ug/l	15	1.5	ND	ND
79-01-6	Trichloroethene	ug/l	3500 D	440 D	9	ND
75-01-4	Vinyl chloride	ug/l	6.3	110 D	460	ND
71-55-6	1,1,1-Trichloroethane	ug/l	20	250 D	23	ND
75-34-3	1,1-Dichloroethane	ug/l	4	76	43	ND
75-34-4	1,1-Dichloroethene	ug/l	4	13	3.1 J	ND
156-59-2	cis-1,2-Dichloroethene	ug/l	570 D	800 D	570 D	ND
156-60-5	trans-1,2-Dichloroethene	ug/l	ND	ND	ND	ND
	1,2-Dichloroethene (Total)	ug/l	570 D	800 D	580	ND
67-66-3	Chloroform	ug/l	ND	ND	ND	ND
56-23-5	Carbon Tetrachloride	ug/l	ND	ND	ND	ND

Data Qualifiers
ND - Element was analyzed for, but not detected.
E - Identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
D - Identifies all compounds identified in an analysis at the secondary dilution factor.
J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit and greater than zero.

APPENDIX A – PHOTOGRAPH LOG

Photograph 1: Area south of CB-10 and MH-3, showing excavated soils from the storm-sewer line replacement by Metaullics in February 2006. Broken sanitary clean-out visible near orange flags. POTW shed in background.

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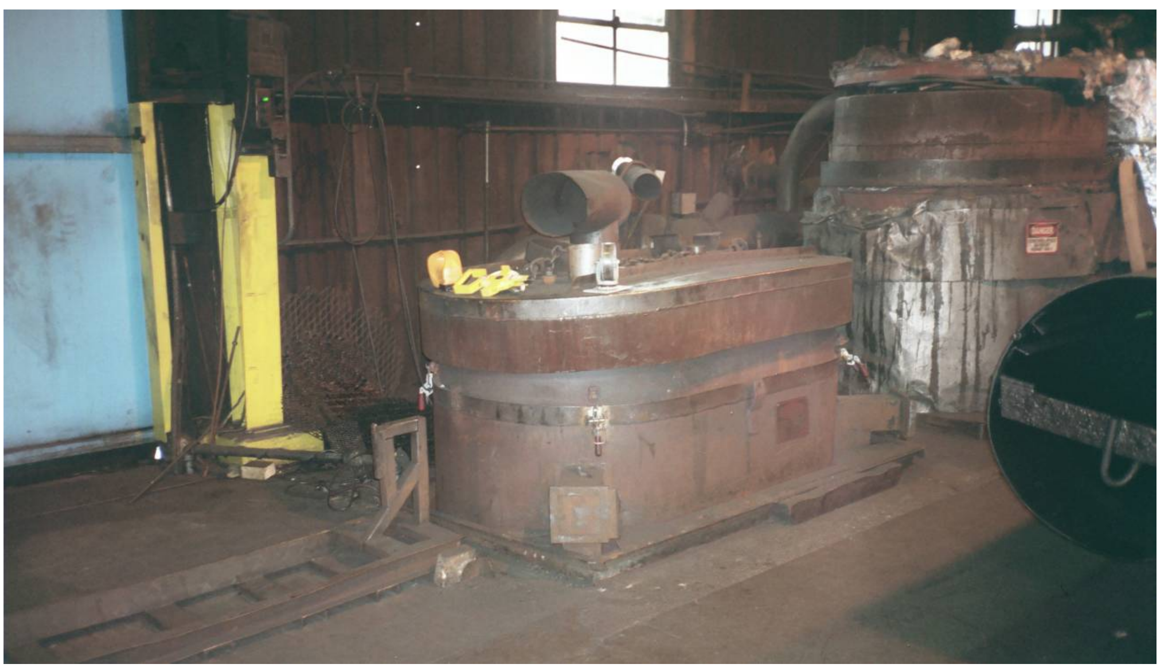
Photograph 2: Pipe D-1 connects to the sanitary sewer. Water from process cooling, Sump 2, and Sump 3 is pumped into D-1.

Photograph 3: Vault 1 (bake pit). The grated floor covers the vault. The large cylinders are furnaces that stand vertically in the vault.



Photograph 4: Vault 2 (preheator vault). The preheater fills most of the vault volume. The steel rim of the vault is visible adjacent to the floor.

Photograph 5: Vault 3 (Autoclave vault). The vault houses two pieces of equipment, one on each side of the vault. The open grate is over the middle of the vault.

Photograph 6: Vault 4 (sand elevator). The top of the vault is flush with ground level. The vault surrounds the vertical elevator shaft. The PVC sump piping (wrapped in silver tape) is shown on the right.