



**SOLID WASTE AREAS REMEDIATION
AND WETLANDS RESTORATION
CHARBERT, DIVISION OF NFA CORP**

ON-BEHALF OF:
Charbert Facility
Alton, Rhode Island

PREPARED FOR:
RI Department of Environmental Management
Providence, Rhode Island

PREPARED BY:
GZA GeoEnvironmental, Inc.
Providence, Rhode Island

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Ms. Joan Taylor
Rhode Island Department of Environmental Management
Office of Waste Management
235 Promenade Street
Providence, Rhode Island 02908-5767



Re: Solid Waste Areas Remediation and Wetlands Restoration
Charbert, Division of NFA Corp.
Alton, Rhode Island

Dear Ms. Taylor:

On behalf of Charbert, Division of NFA Corp, GZA GeoEnvironmental, Inc. (GZA) is pleased to provide you with the attached *Remediation of Solid Waste Areas Report*. This work was conducted as part of the Site Remediation Activities recommended by GZA in the June 2, 2005 *Site Investigation Report (SIR)* for the Charbert Facility in Alton, Rhode Island. This report was prepared by GZA in accordance with our work plan dated May 4, 2006. The report addresses the solid waste areas cleanup and restoration as well as restoration of a section of the old lagoon access road. It is subject to the Limitations presented in Section 9, and Appendix A.


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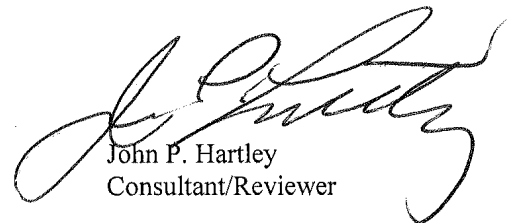
During construction activities related to the maintenance of the industrial waste water collection system in July of 2006, an area of apparent petroleum impacted soil was excavated from the rear maintenance yard of the facility. Section 7 of the report provides a summary of remedial activities completed during the maintenance operation to address this area.

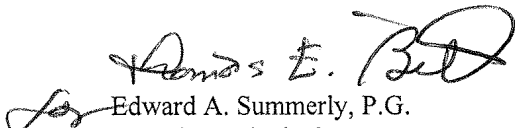
We trust this information will be useful in evaluating the overall site remediation status. Please feel free to contact us with any questions or comments.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.


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1.00 INTRODUCTION

This report presents the results of the remediation of the solid waste areas delineated by GZA in the June 2, 2005 *Site Investigation Report* (SIR) for the Charbert Facility located at 299 Church Street in Alton, Rhode Island (the "Site"). A *Site Locus Plan* is provided as Figure 1. This report is subject to the Limitations presented in Section 9 and Appendix A.



This work was conducted as part of the Site Remediation Activities recommended by GZA in the June 2, 2005 *Site Investigation Report* (SIR) for the Charbert Facility. The scope of work was discussed during a conference call on April 27, 2006 that involved representatives from Charbert, RIDEM, and GZA; Charbert representative Mike Healey expressed that as a proactive step, Charbert would like to remove the solid waste from the four areas delineated in the SIR prior to the development of a final *Remedial Action Work Plan*. The Rhode Island Department of Environmental Management (RIDEM) concurred with the proposed approach and on May 4, 2006, GZA submitted a work plan to RIDEM for review.

1.10 PROJECT OBJECTIVES

The principle objective of the remediation was to remove the solid waste materials, evaluate potential impacts from past dumping practices on the underlying soil conditions, and restore area conditions similar to those on the adjacent woodlands/wetlands.

2.00 SOLID WASTE AREAS

Based on anecdotal information, GZA learned that the area that is now the location of Charbert's waste water lagoons had served as the Town landfill (circa-1920 to 1970). It is not known if Richmond Lace, the mill operator at the time, used this area for disposal of wastes also. The local firm who constructed the lagoons stated that no evidence of solid waste materials was encountered during their excavation activities in 1978.

As described in the SIR, four solid waste dumping areas were identified by GZA as follows:

- Area 1, west of Lagoon 2;
- Area 2, east of the Holding Pond (Lagoon 4);
- Area 3, south of the end of Myrtle Avenue; and
- Area 4, south of the current gravel borrow area.

The four suspected former dumping areas were initially identified by solid waste visible at the ground surface and delineated by hand dug test pits. The test pits were advanced until the native subsoil (tan sand) was encountered. The surficial areas of solid waste were, in general, larger than the areas of subsurface materials. No solid waste was found at a depth greater than 1.5 feet below the ground surface; typical depths were 0.5 feet or less.



2.10 SOLID WASTE AREA 1

The general topography of Area 1 consisted of a small depression running roughly north-south on the west side of Lagoons 1 and 2 with an old road along the east and north edges (see Figure 2, *Existing Condition/Wetlands Plan*). The surficial area of dumping is approximately 15,000 square feet, with sporadic scattered solid waste. Approximately 60 test pits were excavated in the area to delineate and evaluate the extent of the solid waste. The embankment leading from the top of the hill to the bottom of the depression had approximately 5,700 square feet which contained solid waste varying in depth from approximately 0.5 to 1.0-feet. The remaining area contained only sporadic surface solid waste and no buried waste. In the southern portion of the site, several pockets of ash, estimated at 2 to 3 yards each, were excavated.

In general, the solid waste in this area appeared to be circa-1920 to -1940 common household trash, and included ceramics and glass house wares, old bottles, cans, tin wares, horse harnesses, scrap metal and ash. No evidence of chemical or petroleum materials was encountered. The estimated volume of solid waste in this area was 250 cubic yards. See Photos 1-3, attached as Appendix B.

2.20 SOLID WASTE AREA 2

Area 2 is a flat area of land located to the east of the Temporary Holding Pond that consisted push piles of solid waste and an area of surface trash (see Figure 2). A berm running north/south along the edge of this area was initially suspected to contain solid waste; our assessment of the area revealed that it did not. The berm consisted of native soil that was pushed on top of solid waste. The area of surface trash was approximately 9,500 square feet. The push piles and berm appear to have been created during the construction of the Temporary Holding Pond. Approximately 40 test pits were excavated in the area to delineate and evaluate the extent of the solid waste.

The solid waste in this area appeared to be common household trash from circa-1950 to 1970, and included ceramics and glass house wares, bottles, cans, tin ware, miscellaneous car parts, roofing shingles, and scrap metal. No evidence of chemical or petroleum materials was encountered. The estimated volume of this area was 600 cubic yards. See Photos 4-5.



2.30 SOLID WASTE AREA 3

Area 3 was initially delineated as an area at the south end of Myrtle Street, but during brush clearing work associated with the bedrock mapping project being performed at the Site, additional waste was discovered in the woods south of Poplar Street and south of Church Street (Route 91). The area at the end of Myrtle Street contained waste varying from an old concrete floor slab to sporadic surface solid waste consisting of sheet plastic, empty plastic drums, pressure treated wood scraps and piles of mixed soil, concrete block and brick. Approximately 25 test pits were excavated in the area to delineate and evaluate the extent of the solid waste. The waste discovered in the wood along Polar and Church Streets consisted of bagged residential solid waste, discarded lumber and furniture.

The estimated volumes of solid waste in this area were 50 cubic yards of mixed bulky waste and approximately 50 cubic yards of soil and concrete debris. The surface solid waste appears to have been dumped by residents over the last 20 years. No evidence of chemical or petroleum materials was encountered. It should be noted that according to the 1991 Rizzo report, Charbert removed 13 truckloads of debris from this area in the 1980s. See Photos 6-7

2.40 SOLID WASTE AREA 4

Area 4 is located to the south of the current gravel borrow area. Several surficial piles of concrete and brick rubble, sporadic scrap metal and concrete blocks and debris were observed. Approximately 10 test pits were excavated and no subsurface solid waste or evidence of hazardous waste was encountered. Furniture, scrap metal and approximately 3 cubic yards of various bulky items were removed from this area. Concrete debris and concrete blocks were removed from the area and stockpiled adjacent to the soil scrapings stockpile, See Photos 8-9, attached.


2.50 RIVER BANK BUFFER RESTORATION

Three of the solid waste areas described above were partially located within the 200-foot riverbank wetland buffers of the Pawcatuck and Wood Rivers. In addition, Charbert chose to close a now unused portion of the "old lagoon access road" that passes through the 200-foot riverbank wetland buffer, see Figure 2. The restoration work in the 200-foot wetland buffer was performed in accordance with the July 5, 2005 Consent Agreement, while the areas outside the 200-foot riverbank wetland buffer were restored to be consistent with the existing adjacent woodland areas.

3.00 SOLID WASTE REMEDIATION

The sections below describe the work performed in each of the subject areas.

3.10 SOLID WASTE AREAS 1 AND 2



The waste removal from Areas 1 and 2 involved removing surficial refuse from the “old community dump” that may to have operated from the early-1900s to approximately 1970. The refuse appeared to have been dumped on the ground and no buried refuse was discovered. The depth of refuse varied from surficial at the perimeters to approximately 1-foot in the centers. To assist in locating the surface trash, a leaf blower was used to remove dead vegetation, (see Photo 4). Once the work area was defined, sediment and erosion controls consisting of staked and keyed hay bales were installed down-gradient of the work areas. Care was taken to remove a minimum number of trees and the cut trees and brush were removed from the 200-foot wetland buffer.

The waste in both of these areas was removed from the surface with a small skid steer loader and a small backhoe. The waste was transported to a staging area where an initial sorting took place. Bulky items were placed in a roll-off dumpster, scrap iron was stockpiled, and the solid waste-soil mixture was stockpiled on 10-mil polyethylene sheeting. See Figure 2 for the staging and stockpile area.

3.20 SOLID WASTE AREA 3

Solid Waste Area 3 waste consisted primarily of household items and discarded building material brought on-Site by local residents. Visible waste included tires, furniture, wood, roof shingles, plastic bags of household solid waste, and various other materials.

While performing cleanup operations in this area, a pile of what appeared to be asbestos siding shingles was discovered. The siding was placed in plastic bags and removal arrangements were made with a licensed hauler.

3.30 SOLID WASTE AREA 4

Solid Waste Area 4 waste consisted of surficial scrap metal; discarded furniture and household items. The area also contained several piles of miscellaneous concrete rubble and debris. All debris was removed to the staging area. As this area was fully contained in a depression with no danger of erosion and sediment impacting the wetland buffer, sediment and erosion controls were not employed.

4.00 SAMPLE COLLECTION AND ANALYSIS

In accordance with GZA’s May 4, 2006 work plan, soils were field screened and samples collected for laboratory analysis. Soils were observed on-Site for visual and olfactory evidence of contamination. Samples were field screened for VOCs with a Thermo Environmental Model 580B photoionization device (PID) with a 10.6 eV lamp. Soils that appeared to contain solid waste were removed and segregated at the staging area.

4.10 FIELD SCREENING

Following waste removal and prior to the start of restoration activities, discrete soil samples were collected within the shallow excavations and screened for possible laboratory analysis. Each area was staked in a grid pattern to provide aerial coverage. The open ground surface was also observed for soils that appeared to be impacted by solid waste or contaminants. Laboratory samples were collected based on total volatile organics field screening results, visual and olfactory evidence of potential impacts, and/or to provide general coverage of each area.



A total of 82 samples were collected for field screening with eight samples having detectable total volatile organic compound (TVOC) readings with the PID. As summarized on Table 1, the eight detects ranged from 1 to 9 parts per million (ppm) by volume. The soils did not appear to be impacted by contaminants; no staining or odors were observed. Prior to the cleanup efforts, no stressed vegetation was noted.

4.20 LABORATORY ANALYSIS

Four samples each were collected from Solid Waste Areas 1 and 2, and two samples each from Solid Waste area 3 and 4 for laboratory testing. The 12 samples were submitted to the laboratory for the analysis discussed below.

For each soil sample, a 40-ml methanol preserved VOA vial and at least one 8-ounce jar with a Teflon-lined lid was collected, labeled and placed in an ice-filled cooler and transported to the laboratory under chain-of-custody

Soil samples collected in Solid Waste Areas 1 and 2 were analyzed for the following:

- Total Petroleum Hydrocarbons (EPA Method 8100M)
- Volatile Organic Compounds (EPA Method 8260B)
- Semi-volatile Organic Compounds (EPA Method 8270C),
- Total Metals (EPA Method 6010B/7471A)
- Polychlorinated Biphenyls (EPA 8082).

The metals analysis consisted of the 18 regulated metals in the RIDEM's Remediation Regulations. In addition two samples from each area were selected for polychlorinated biphenyls (PCBs) analysis (EPA 8082).

Soil samples collected from Solid Waste Areas 3 and 4 were analyzed for the following:

- Total Petroleum Hydrocarbons (EPA Method 8100M)
- Volatile Organic Compounds (EPA Method 8260B)
- Semi-volatile Organic Compounds (EPA Method 8270C),
- Total Metals (EPA Method 6010B/7471A)

The metals analysis consisted of the 18 regulated metals in the RIDEM's Remediation Regulations. Laboratory data sheets are provided in Appendix C.

4.30 ANALYTICAL RESULTS



As summarized in Table 2, only one of the 66 target VOCs was observed in one of the 12 soil samples collected by GZA. Tetrachloroethene was detected at 2.9 mg/kg (ppm) in sample A4-S5 taken in Solid Waste Area 4. Also summarized in Table 2, two of the 67 target SVOCs were observed. Both Phenanthrene and Pyrene, detected at 0.34 ppm and 0.33 ppm respectively were observed in sample A1-S16, and Phenanthrene was observed at a concentration of 0.35 ppm in sample A3-S2. These levels were below the RIDEM RDEC of 40 ppm for Phenanthrene and 6,000 ppm for pyrene.

Total petroleum hydrocarbons were detected in 11 of the 12 samples with the highest concentration being 220 ppm, well below RIDEM's Residential Direct Exposure criterion (RDEC) of 500 ppm. The range of the 11 detected TPH concentrations was 14 to 220 ppm and the average detected concentration was 63 ppm.

As noted above, four subsurface soils samples were analyzed for PCBs. No target PCBs were detected in any of the samples tested (refer to Table 2).

Eleven of the 18 RIDEM's regulated metals were detected on a total basis in one or more of the 12 subsurface soil samples. Of the 11 detected metals, seven were observed in all 12 samples, (barium, chromium, lead, zinc, vanadium, and manganese). Copper was observed in 11 of the samples and mercury was observed in nine samples. Each of these metals is naturally occurring in soils and bedrock in Rhode Island. Although total chromium was detected in all samples, hexavalent chromium was not detected in any of the samples.

Only two of the detected metals concentrations exceeded RIDEM's Residential or Industrial/Commercial Direct Exposure Criteria (I/C DEC). Sample A1-S3 had lead detected at 227 ppm exceeding the 150 ppm RDEC, and sample A1-S16 had arsenic detected at 22.4 ppm, above the RDEC and I/CDEC of 7.0 ppm.

As part of the proposed remediation for the Site, an environmental land use restriction (ELUR) will be established. The lead level detected in sample A1-S3 did not exceed the RIDEM I/CDEC of 500 ppm, so no further action was taken. As the arsenic detected in sample A1-S-16 did exceed the RIDEM I/CDEC, on April 11, 2007, four additional samples were collected in the vicinity of the original sample. Samples were collected 5-feet from the original sample in the four cardinal directions. No arsenic was detected in the four samples at concentrations above the method detection limits of 2.9 ppm. Consequently, the initial finding is viewed as *de minimis* and not warranting additional assessment or remediation.

5.00 RESTORATION

Restoration work performed after the solid waste removal was completed. The loam that had been stripped and stockpiled from the gravel borrow area, and the lagoon area was used for the restoration. Restoration within the 200-foot riverbank wetland buffer was completed as specified in the June 2005 Consent Agreement.



5.10 SOLID WASTE AREAS

Care was taken to minimize the amount of trees and shrubs removed during the cleanup operations. Ground surfaces that were stripped were restored with native soils and grass seed and mulched with straw as specified on Figure 2. The grass seed was a wetland restoration blend as specified by Bruce Ahern of RIDEM. The seed mixture was prepared for the project by Allen's Seed Store in Exeter, Rhode Island. Erosion controls consisting of staked hay bales were placed throughout the wetland buffer work areas and down slope of the areas outside the buffer.

The cleanup and restoration project was more time consuming than initially estimated and was completed by the end of July, 2006. The decision was made not to plant trees and shrubs during the dry season. The trees and shrubs will be planted in conjunction with the restoration of the 200-foot wetland buffers as described in the May 2006 Consent Agreement. All of Solid Waste Area 4 is contained in a gravel borrow area. Part of this area was located within the 200-foot wetland buffer and will be restored as part of the wetland restoration described in the 2005 Consent Agreement and no restoration was conducted during the solid waste removal.

The areas outside the 200-foot wetland buffer in Solid Waste Areas 1 and 2 were graded to match the surrounding area, seeded with a standard slope stabilization seed mixture, and mulched. Solid Waste Area 3 was not located within the 200-foot riverbank wetland buffer and was restored to match the surrounding area, which consist primarily of young forest and woodlands. The area stripped of vegetation was minimal, as the waste was not buried, and sediment controls were not necessary.

5.20 OLD LAGOON ACCESS ROAD

Charbert chose to voluntarily restore a portion of the "old lagoon access road" that is located within the 200-foot riverbank wetland buffer. A new roadway was constructed outside the wetland buffer in 2004. The area that was restored extends from the fenced rear yard of the facility approximately 400 feet south toward the lagoons. The area was surrounded by sediment controls before receiving soil and grading work. The vegetation was restored as described above for Solid Waste Areas 1 and 2.

As the facility production wells are located within this area, no planting of trees and shrubs will be performed in this area. No solid waste or contaminants have been identified in this area, thus no samples were collected for analysis.

6.00 SOLID WASTE SEGREGATION AND DISPOSAL

As solid waste was removed from the disposal areas, it was transported to a staging area located near the soil stockpiles, see Figure 2. At the staging area the solid waste received an initial sorting. Large or bulky waste items were placed in a roll-off dumpster, scrap metal was stockpiled, roots and stumps were removed, and the remaining solid waste, soil-like material and soil was stockpiled for mechanical screening.



6.10 MECHANICAL SCREENING

The mechanical screening involved the waste first passing a 3-inch square then a 1-inch square mechanical screen. Scrap iron, tree roots, and large rocks were manually separated from the screenings. The materials that failed to pass the mechanical screens were stockpiled on 10-mil poly for off-Site disposal as solid waste in a licensed landfill. Approximately 185-tons of solid waste and just less than 4-tons of scrap iron were removed from the four areas. The table below characterizes the type and quantity of waste removed from the Site:

Hauler	Date	Material	Weight (tons)
Pond View Recycling	04/11/2006	Scrap Iron	Less Than 4
Pond View Recycling	06/21/2006	Bulky Items	14.30
Pond View Recycling	07/28/2006	Bulky Items and Screenings	16.56
Patriot Hauling Co., Inc.	09/23/2006	Screenings	41.47
Patriot Hauling Co., Inc.	09/23/2006	Screenings	21.84
Patriot Hauling Co., Inc.	09/23/2006	Screenings	28.40
Patriot Hauling Co., Inc.	09/23/2006	Screenings	26.19
Patriot Hauling Co., Inc.	09/23/2006	Screenings	32.27
Patriot Hauling Co., Inc.	09/23/2006	Rear Yard Soils	22.33
Enviro-Safe Corporation	10/18/2006	Asbestos Shingles	NA

The scrap metal was recycled by Pond View Recycling of East Providence, Rhode Island and the solid waste material was transported to Central Landfill in Johnston, Rhode Island, see Appendix D for truck weight slips. The asbestos shingles were transported to Jones Environmental Services in Lowell, Massachusetts by Enviro-Safe Corporation; see Appendix D for non-hazardous waste manifest.

6.20 SCREENED MATERIAL

Approximately 600 cubic yards of the material that passed the 1-inch screen, was stockpiled in the staging area. To stabilize the pile and prevent erosion, the it was seeded with a conservation grass mixture. This material is currently stockpiled near the approximately 7,600 cubic yards (yds³) of soil resulting from maintenance of the three lagoons in 1998, 2001 and 2004. These soils were identified and characterized in an April 13, 2005 GZA report entitled *Stockpiled Soils Reuse Plan*.



These lagoon scraping soils will be used to reshape the lagoon area when the proposed waste water treatment plant is constructed. As you are aware, Charbert is currently evaluating waste water treatment alternatives for the Site. Charbert would like to use the material that passed the 1-inch screen during the lagoon closings and restoration of environmentally non-sensitive areas of the Site. This material will be utilized in areas that will be within the proposed ELUR area.

6.20.1 Laboratory Analysis

To characterize the material that passed the mechanical screen, two composite samples were collected for laboratory analysis. The laboratory analysis included:

- Total Petroleum Hydrocarbons (EPA Method 8100M)
- Volatile Organic Compounds (EPA Method 8260B)
- Semi-volatile Organic Compounds (EPA Method 8270C),
- Total Metals (EPA Method 6010B/7471A)
- PCBs (EPA 8082)

The metals analysis consisted of the 18 regulated metals in the RIDEM's Remediation Regulations.

6.20.2 Laboratory Results

Laboratory data reports are provided in Appendix C. As summarized on Table 3, none of the 66 target VOCs or PCBs were observed in either soil sample. Three of the 67 target SVOCs were observed in one soil sample and two in the other sample. Phenanthrene was detected at 0.46 and 0.49 ppm in samples STK PL-1 and STK PL-2, respectively. Pyrene was also detected at 0.45 ppm and 0.43 ppm, respectively. Sample STK PL-1 also had bis(2-ethylhexyl)phthalate at 0.49 ppm. These levels are below the RIDEM RDEC of 40 ppm for Phenanthrene, 6,000 ppm for pyrene and 46 ppm for bis(2-ethylhexyl)phthalate.

Total petroleum hydrocarbons were detected at 180 and 130 ppm, respectively. These detected levels were all below the RDEC of 500/1,000 ppm.

Eleven of the 18 RIDEM regulated metals were detected in the samples. Four metals (barium, chromium, nickel, and lead) were detected in each of the two samples tested.

Each of these metals is naturally occurring in soils and bedrock in Rhode Island. Although total chromium was detected in all samples, hexavalent chromium was not detected in either sample. Only two of the detected metals concentrations exceeded the Method 1 RDEC or I/C DEC. Arsenic was detected in both samples at 8.63 ppm and 8.43 ppm, respectively, above the 7 ppm RDEC and I/CDEC. Lead was observed in both samples at 221 and 190 ppm, respectively; both above the 150 ppm RDEC, but below the I/CDEC of 500 ppm.



7.00 FACILITY YARD SOIL

While performing maintenance of the industrial waste water collection system in the rear facility yard on June 6, 2006, approximately 15 cubic yards of soil that appeared to be impacted with petroleum products was excavated. The soil was transported to the solid waste staging area, placed on 10-mil polyethylene sheeting, and securely covered with the same.

7.10 LABORATORY ANALYSIS

To characterize the soils removed from the area, two samples were collected for laboratory analysis. The samples, collected on July 10, 2006 were identified as STK-PL-2 and STK PL-2; the same sample identifier used for the screened material stockpile samples taken on June 2, 2006. The laboratory analysis included:

- Total Petroleum Hydrocarbons (EPA Method 8100M)
- Volatile Organic Compounds (EPA Method 8260B)
- Semi-volatile Organic Compounds (EPA Method 8270C),
- Total Metals, RCRA 8 (EPA Method 6010B/7471A)

7.20 LABORATORY ANALYSIS RESULTS

As summarized on Table 4, up to 22 of the 66 target VOCs were observed in the soil samples collected by GZA. Laboratory data reports are provided in Appendix C. The majority of detected compounds fall into two categories; chlorinated hydrocarbons such as tetrachloroethene and its breakdown products (i.e., trichloroethene, cis- and trans-1,2-dichloroethene, and vinyl chloride), and petroleum/fuel related compounds such as toluene, xylene, ethylbenzene and related isomers. Of the 22 detected compounds, cis-1,2-dichloroethene and trichloroethene exceed RIDEM's GA-Leachability Criteria in both samples, and tetrachloroethene exceeded RIDEM's I/C DEC criteria in sample STL-PL2.

Nine of the 67 target SVOCs were observed in at least one soil sample. The detected compounds were generally polycyclic aromatic hydrocarbons (PAHs) such as naphthalene. The type of PAHs observed are typically associated with heavier petroleum products such as #2 fuel oil/diesel fuel, #4 and #6 heating oils. The only exceedance of RIDEM criteria was chrysene which exceeded the RDEC for both samples. Total petroleum hydrocarbons

were detected at 630 and 1,800 ppm, respectively. These detected levels exceed the RDEC and the GA-Leachability Criterion.

7.30 DISPOSAL

This material, approximately 22.33 tons, was placed in a roll-off dumpster, removed from the Site by Patriot Hauling Company Inc., and taken to Central Landfill in Johnston, Rhode Island for disposal as solid waste; (see Appendix D for tipping weight slips).



8.00 CONCLUSIONS

Based on our evaluation of the solid waste cleanup efforts and results from the soil sampling GZA has developed the following conclusions:

- The solid waste has been effectively removed from the areas delineated in GZA's June 2, 2005 SIR. The solid waste, which primarily consisted of household related materials, was mechanically and physically removed from the ground surface and subsurface, segregated and transported from the Site for disposal at an appropriately licensed waste management facility. Approximately 185 tons of solid waste and less than 4 tons of scrap metals were removed from the Site.
- Confirmatory soil samples collected after the cleanup detected one target VOC and two target SVOCs; all however at concentrations below the Method 1 RDEC and GA-Leachability Criteria.
- Total petroleum hydrocarbons were detected in 11 of the 12 soil samples; all at levels below RDEC and GA-Leachability Criterion. No target PCBs were detected in the four soil samples analyzed following the cleanup.
- Eleven of the 18 RIDEM regulated metals were detected in the subsurface soil samples collected after the cleanup. Two of the detected metals concentrations exceeded the Method 1 RDEC or I/C DEC. Total lead detected at 227 ppm in one sample exceeded RDEC). The lead exceedance was located in an area that will be subjected to an ELUR. Arsenic was present in one sample at a concentration of 22.4 ppm, which is above the 7 ppm RDEC and I/CDEC. Additional soil samples collected in the vicinity did not detect arsenic above the method detection limit of 2.9 ppm.
- No VOCs or PCBs were observed in the composite soil samples collected from the screened soil piles. Three of the 67 target SVOCs were observed in one sample, and two were observed in another sample. All of the SVOC concentrations were below the RDEC. Eleven of the 18 RIDEM regulated metals were detected in the screened soil composite samples. Arsenic was detected in both samples at 8.63 and 8.43, respectively, above the RDEC and the I/CDEC. Lead was observed in both

samples at 221 and 190 ppm, respectively, above the RDEC of 150 ppm and below the I/CDEC of 500 ppm.

- Restoration work with the 200-foot riverbank wetland buffer was coordinated with Bruce Ahern of RIDEM and completed as specified in the June 2005 Consent Agreement, with the exception of tree and shrub planting. Because the cleanup and restoration process was more time consuming than initially estimated, the decision was made not plant trees and shrubs during the dry season. The trees and shrubs will be planted in conjunction with the restoration of the 200-foot wetland buffers as described in the July 5, 2005, Consent Agreement.
- All of Solid Waste Area 4 is contained within a gravel borrow area. Portions of this area are located within the 200-foot wetland buffer and will be restored as part of the wetland restoration described in the 2005 Consent Agreement. No restoration was conducted during the solid waste removal.
- Approximately 15 yards (22.33-tons) of oil and VOC impacted soil was removed from the rear maintenance yard area during industrial waste water collection system maintenance. The material transported by to Central Landfill in Johnston, Rhode Island.
- A section of the old lagoon access road that passed through the 200-foot riverbank wetland buffer was restored. As the Charbert facility production wells are located in this area, no trees or shrubs were planted.



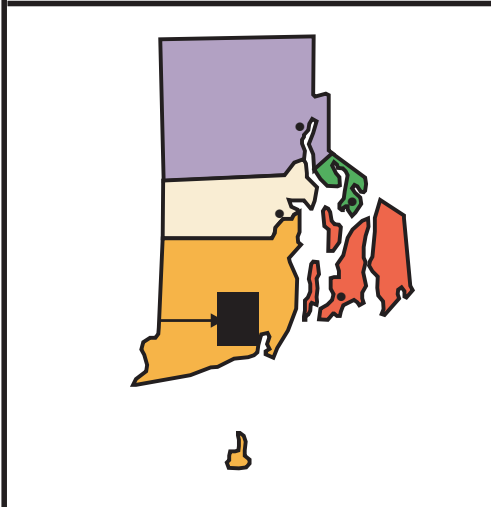
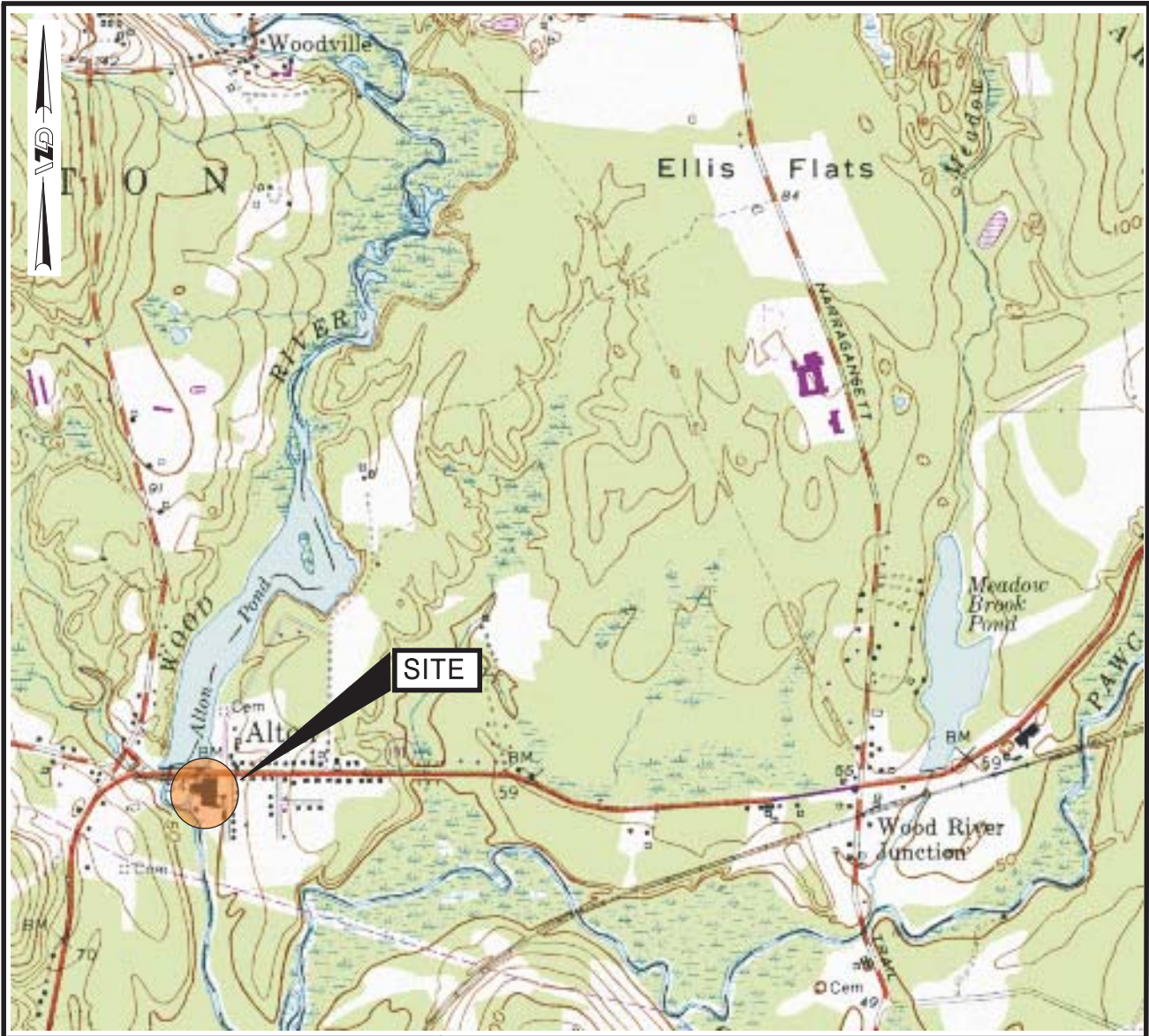
9.00 LIMITATIONS

GZA's work was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and GZA observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. This report is also subject to the limitations contained in Appendix A.

GZA's findings and conclusions must be considered not as scientific certainties, but rather as our professional opinion concerning the significance of the limited data gathered during the course of the environmental remediation. No other warranty, express or implied, is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil or other latent condition beyond that observed by GZA during its remediation oversight.

This study and report have been prepared on behalf of and for the exclusive use of the Charbert, Division of NFA Corp. solely for use in a report of environmental remediation for the Site

FIGURES



FROM USGS PROVIDENCE, RI QUADRANGLE MAP
 (DIGITAL TOPOGRAPHIC MAPS PROVIDED BY MAPTECH, INC.)
 (CONTOUR ELEVATIONS ARE IN METERS ABOVE NGVD, AT 3 METER INTERVALS)

APPROXIMATE SCALE IN FEET

A horizontal scale bar with markings at 0, 1200, 2400, and 4800 feet.



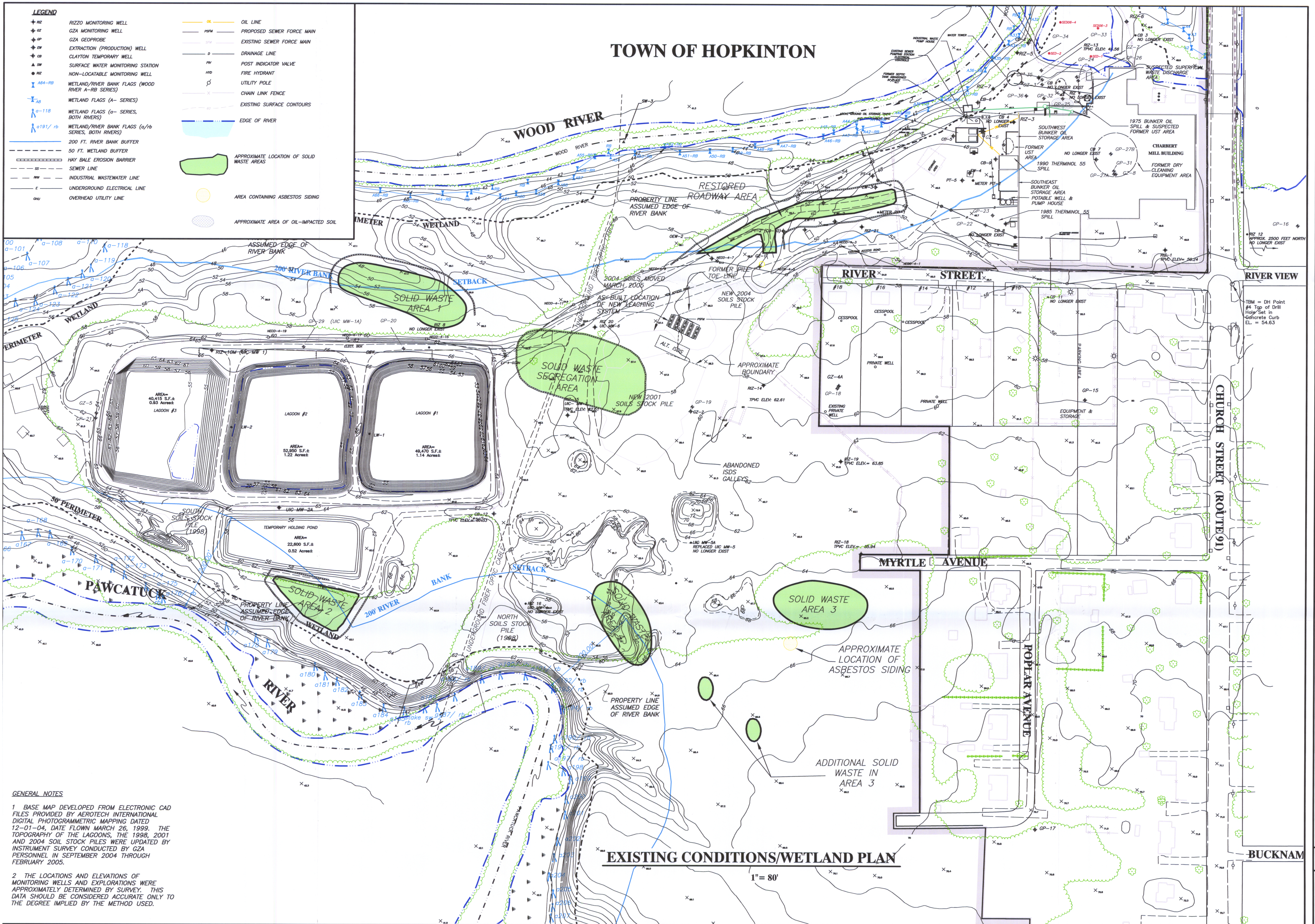
CHARBERT FACILITY

ALTON
 RHODE ISLAND

LOCUS PLAN

JANUARY 2005

FIGURE NO. 1



TOWN OF HOPKINTON

EXISTING CONDITIONS/WETLAND PLAN

1" = 80'

LEGEND	
+	RIZO MONITORING WELL
+	GZA MONITORING WELL
+	GZA GEOPROBE
+	EXTRACTION (PRODUCTION) WELL
+	CLAYTON TEMPORARY WELL
+	SURFACE WATER MONITORING STATION
+	NON-LOCATABLE MONITORING WELL
+	WETLAND/RIVER BANK FLAGS (WOOD RIVER A-RB SERIES)
+	WETLAND FLAGS (A- SERIES)
+	WETLAND FLAGS (a- SERIES, BOTH RIVERS)
+	WETLAND/RIVER BANK FLAGS (a/rb SERIES, BOTH RIVERS)
---	200 FT. RIVER BANK BUFFER
---	50 FT. WETLAND BUFFER
---	HAY BALE EROSION BARRIER
---	SEWER LINE
---	INDUSTRIAL WASTEWATER LINE
---	UNDERGROUND ELECTRICAL LINE
---	OVERHEAD UTILITY LINE
---	OIL LINE
---	PROPOSED SEWER FORCE MAIN
---	EXISTING SEWER FORCE MAIN
---	DRAINAGE LINE
---	POST INDICATOR VALVE
---	FIRE HYDRANT
---	UTILITY POLE
---	CHAIN LINK FENCE
---	EXISTING SURFACE CONTOURS
---	EDGE OF RIVER
---	APPROXIMATE LOCATION OF SOLID WASTE AREAS
---	AREA CONTAINING ASBESTOS SIDING
---	APPROXIMATE AREA OF OIL-IMPACTED SOIL

GENERAL NOTES

1. BASE MAP DEVELOPED FROM ELECTRONIC CAD FILES PROVIDED BY AEROTECH INTERNATIONAL DIGITAL PHOTOGRAMMETRIC MAPPING DATED 12-01-04, DATE FLOWN MARCH 26, 1999. THE TOPOGRAPHY OF THE LAGOONS, THE 1998, 2001 AND 2004 SOIL STOCK PILES WERE UPDATED BY INSTRUMENT SURVEY CONDUCTED BY GZA PERSONNEL IN SEPTEMBER 2004 THROUGH FEBRUARY 2005.

2. THE LOCATIONS AND ELEVATIONS OF MONITORING WELLS AND EXPLORATIONS WERE APPROXIMATELY DETERMINED BY SURVEY. THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

<p>PROJ. MGR. SMA</p> <p>CHK'D BY: EAS</p> <p>REVD BY: PPV</p> <p>DRAWN BY: SMA/CRB</p> <p>SCALE: AS NOTED</p> <p>DATE: APRIL, 2007</p>			
<p>CHARBERT A DIVISION OF NFA CORP. 299 CHURCH STREET ALTON, RHODE ISLAND 02832</p>			
<p>EXISTING CONDITIONS/ WETLAND PLAN</p>			
PROJECT NO.	32795.17		
FIGURE NO.	2		
REV#	DESCRIPTION	BY	DATE

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