GZA
GeoEnvironmental, Inc.

Engineers and
Scientists

August 12, 2011
File No. 05.0043654.00

Mr. Joseph Martella
RI Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908

Re: *Supplemental Site Investigation Work Plan (SSIWP) Addendum*
Former Tidewater Facility
Pawtucket, Rhode Island
RIDEM Case No. 95-022

530 Broadway
Providence
Rhode Island
02909
401-421-4140
Fax: 401-751-8613
http://www.gza.com

Dear Mr. Martella:

On behalf of our client, The Narragansett Electric Company d/b/a National Grid (National Grid), GZA GeoEnvironmental Inc. (GZA) is pleased to provide the attached *Supplemental Site Investigation Work Plan* (SSIWP) *Addendum* for the Former Tidewater Facility located in Pawtucket, Rhode Island (Site).

The schedule for the exploration program described herein is dependent upon approval from the Coastal Management Resource Council (CRMC) and coordination with the City of Pawtucket. Should you have any questions or comments, please feel free to contact us at (401) 421-4140, or via e-mail at *margaret.kilpatrick@gza.com*.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Margaret S. Kilpatrick, P.E.
Senior Project Manager

John P. Hartley
Consultant/Reviewer

James J. Clark, P.E.
Principal

MSK/JJC:tja

Attached: Supplemental Site Investigation Work Plan Addendum

Cc: Michele Leone, National Grid

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1.00 INTRODUCTION

On behalf of The Narragansett Electric Company, d/b/a National Grid (National Grid), GZA GeoEnvironmental Inc. (GZA) has prepared this *Supplemental Site Investigation Work Plan (SSIWP) Addendum* describing additional investigation activities to be performed at the former Tidewater facility located at the terminus of Tidewater and Merry Streets in Pawtucket, Rhode Island (refer to Figure 1 for the Site *Locus Plan*). This property is herein referred to as the Site. The Site is located on the west side of the Seekonk River and is bound to the west by residential properties, to the south and southwest by the Francis J. Varieur School and Max Read Athletic Field, and to the north by undeveloped property owned by the City of Pawtucket. It encompasses approximately 23 acres and was the location of the former Tidewater Manufactured Gas Plant (MGP) and the Pawtucket No. 1 Power Station. The Site is currently largely vacant with the exception of an active natural gas regulating station, an active switching station and electric substation, and two transmission towers owned and operated by National Grid.

The investigation tasks described herein were developed to fill a data gap identified following completion of recent Site investigation activities at the Site (2010). These investigations were performed consistent with the November 2009 and October 2010 SSIWPs submitted to the Department. The results of these investigations were combined with previous studies to develop a *Site Investigation Data Report* (SIDR), which was submitted to the Department in January of 2011. This SIDR was prepared consistent with applicable sections of Rule 7.00 of the Rhode Island Department of Environmental Management's (RIDEM) Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations–DEM-DSR-01-93). A *Remedial Alternative Evaluation* was performed and submitted to the Department on July 29, 2011. This evaluation, combined with the January 2011 SIDR will fulfill the requirements of Sections 7.03, 7.04, and 7.05 of the Remediation Regulations for a *Site Investigation Report* (SIR).

The Site has been subdivided into four areas based on their geographic location, past use and/or past occupants. The identified data gaps addressed in this SSIWP pertain to the South Fill Area (SFA) only. Figure 2, *Previous Exploration Locations* and Figure 3, *Proposed Exploration Locations*, present the location and configuration of the SFA.

This *SSIWP Addendum* is organized as follows:

- Section 1.00 contains this introduction;
- Section 2.00 describes the SFA data gap to be investigated; and
- Section 3.00 presents the proposed scope of this study.

For details regarding the existing and historic Site conditions, including Site plans, previous Site investigations, hydrogeologic setting and observed impacts, please refer to the January 2011 SIDR.

2.00 DATA GAP IDENTIFICATION

Test boring TB-18 was performed as part of the 1996 Site investigation work conducted by GEI Consultants, Inc. (formerly Atlantic Environmental Solutions, Inc.). This boring is located adjacent to the western limit of the SFA on A.P. 65B Lot 648 within the eastern boundary of the Max Read Field. Visual observations of fill materials were encountered in TB-18 (refer to Figure 2). The investigations performed to date may not fully characterize the extent of the fill materials in this portion of the SFA. Additional investigations, as described below, are proposed to further define the limits of these fill materials.

3.00 PROPOSED SCOPE OF WORK

GZA proposes to perform a supplemental subsurface investigation program consisting of the completion of soil borings designed to address the data gap identified in Section 2.00. Proposed exploration locations are shown on the attached Figure 3. Please note that based on field conditions and the results of utility clearance, the exact locations of the proposed explorations are subject to modification. Consistent with the SIDR, in areas where significant visual impacts have been identified or are observed, analytical testing will be limited. Visual and olfactory observations will be used as the primary investigation tool in further defining the limits of observed fill in this area of the Site. (Refer to the Soil/Waste Characterization Protocol For Former Manufactured Gas Plants provided in Appendix A). Fieldwork associated with the subsurface exploration program will be completed in accordance with the *Health and Safety Plan* (HASP) prepared for the project.

The following paragraphs summarize the work scope included in this SSIWP Addendum.

CRMC Permitting

A portion of the proposed investigation included in this SSIWP Addendum falls within 200-feet of the coastal feature, and as such, is subject to the jurisdiction of the Coastal Resource Management Council (CRMC). As part of the recent investigation work performed at the Site, a CRMC permit was obtained (F2009-12-034), which is effective until December 11, 2012. GZA has prepared an application package requesting a modification to the existing CRMC permit to cover completion of this proposed exploration program and submitted it to CRMC for their review.

Coordination with the City of Pawtucket

Proposed exploration locations are shown on the attached Figure 3 on the City of Pawtucket property (A.P. 65B Lot 648) directly proximate to the Max Read Field. This work will require coordination with the City of Pawtucket to allow access via the Max

Read Field. It is anticipated that the work described herein will be completed during the summer months when school is not in session. In addition, GZA will attempt to schedule the drilling at times when the athletic field is not in use.

Soil Borings

GZA proposes to perform five additional test borings (designated TB-342 to TB-346) to be completed at the locations shown on Figure 3. Prior to performing the borings, GZA will conduct Site reconnaissance to coordinate DigSafe® clearance, and to visually evaluate access restrictions. As noted, some of the boring locations may be modified due to the presence of underground utilities or other Site features. As described previously, the intent of these borings is to further define the limits of fill observed at TB-18.

The test borings will be installed utilizing a Geoprobe® rig. Based on our understanding of subsurface conditions, soil boring depths are anticipated to be approximately 25 to 30 feet below ground surface. The drilling tools will be steam-cleaned between each monitoring well location, depending on the level of impacts noted at the exploration. A GZA geologist or engineer will be present during drilling to classify soil conditions and prepare boring logs.

Soil cuttings and wash water (*i.e.*, decontamination water) generated during drilling will be field-screened for total volatile VOCs with a photoionization detector (PID) and then placed in 55-gallon drums for subsequent characterization and off-Site disposal at an appropriate facility.

Soil samples will be collected at 4-foot sampling intervals. Soil samples will be screened in the field for total VOCs using a PID and classified in the field consistent with the key provided in Appendix A. It is not anticipated that any soil samples will be submitted for laboratory analysis, as the laboratory testing previously performed has adequately characterized soil concentrations in this area. However, in the event that field conditions warrant laboratory testing, the soil samples may be analyzed for VOCs using EPA Method 8260B, TPH using EPA Method 8100M, PAHs using EPA Method 8270, total cyanide and/or EPA 13 Priority Pollutant Metals. The soil samples will be collected in glass jars and will be kept cool during shipment under chain-of-custody documentation to GZA's ECL.

Spoils from each boring location will be immediately containerized within labeled and sealed 55-gallon drums for subsequent characterization and off-Site transport. These drums will be relocated to a secure portion of National Grid's property at the end of each work day; no material or equipment will be stored on City property.

Report Preparation

Results of the investigations described herein will be documented in an addendum to the SIR.

Attachments: Figure 1 – Site Locus Plan
Figure 2 – Previous Exploration Locations
Figure 3 – Proposed Exploration Locations

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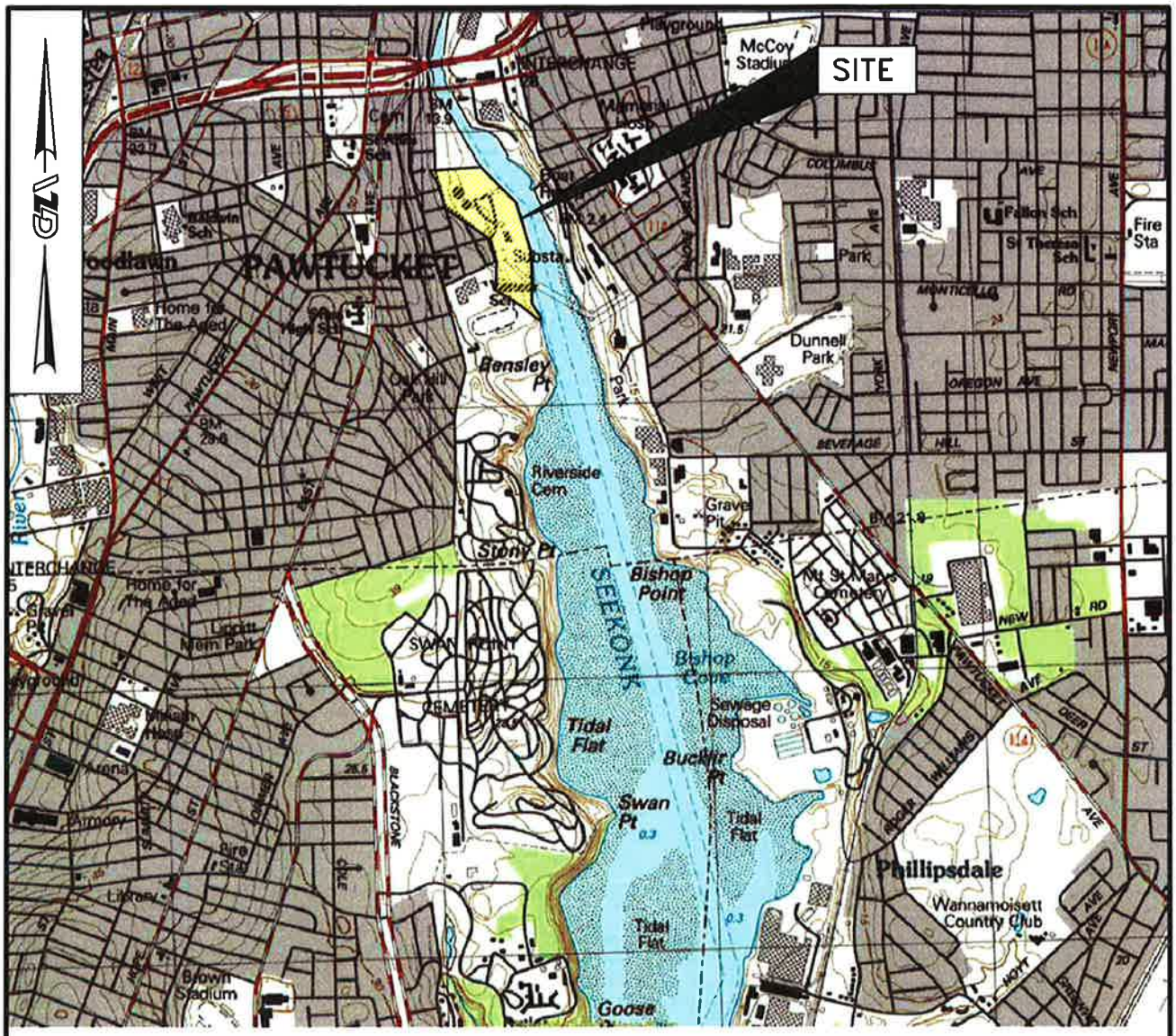
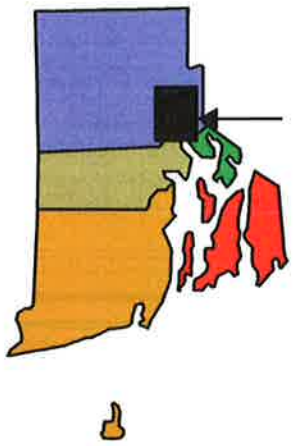
FIGURES





BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP:
PROVIDENCE, RI (2001)

DIGITAL TOPOGRAPHIC MAPS PROVIDED BY MAPTECH. INC.

CONTOUR ELEVATIONS REFERENCE NGVD 29,
CONTOURS ARE SHOWN IN METERS ABOVE NVGD AT 3 METER INTERVALS

APPROXIMATE SCALE IN FEET

0' 500' 1000' 2000'

TIDEWATER FACILITY

PAWTUCKET, RHODE ISLAND

LOCUS PLAN

JUNE 2011

FIGURE NO. 1

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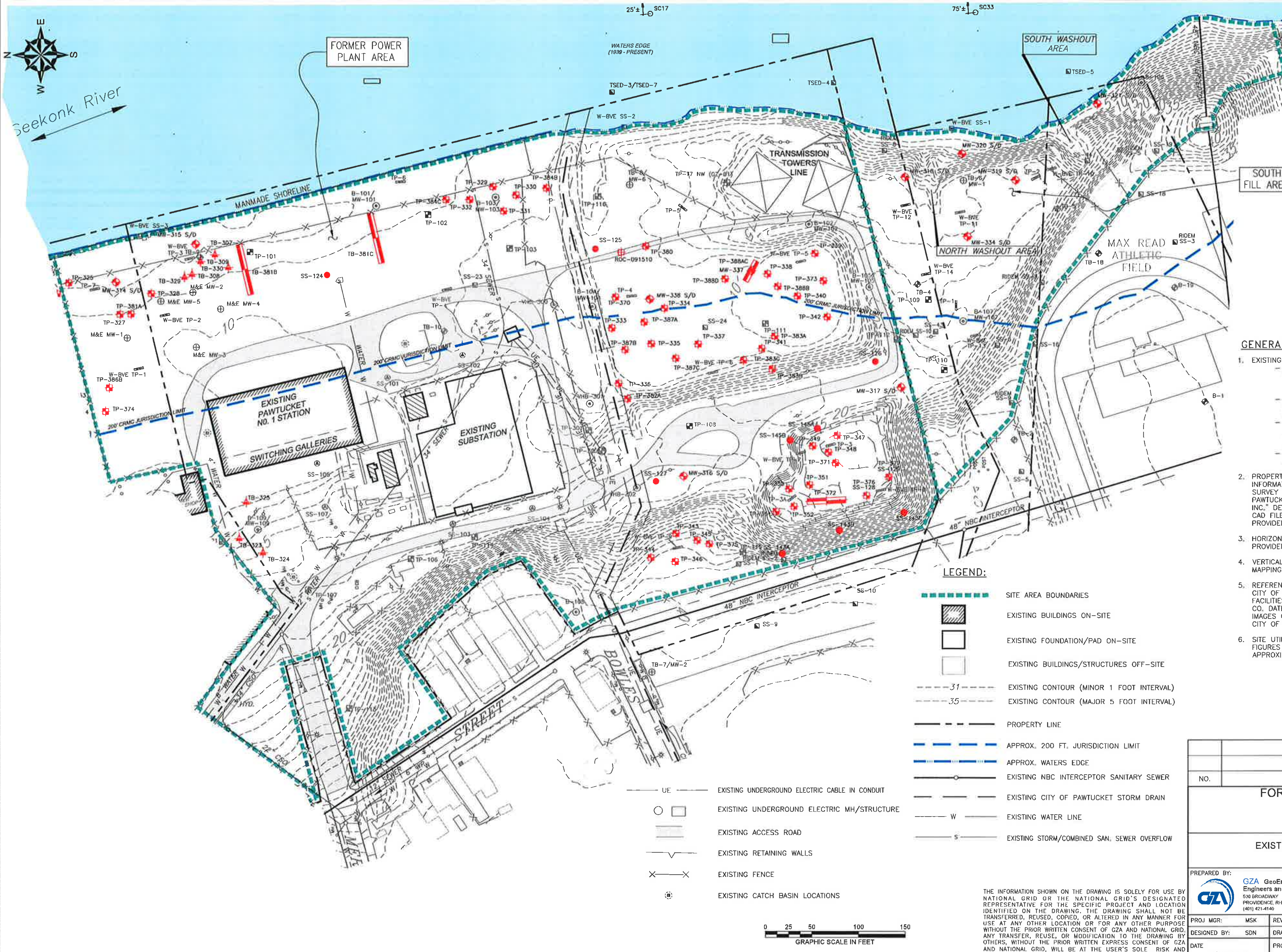


LEGEND:

- SITE AREA BOUNDARIES
- EXISTING BUILDINGS ON-SITE
- EXISTING FOUNDATION/PAD ON-SITE
- EXISTING BUILDINGS/STRUCTURES OFF-SITE
- 31 — EXISTING CONTOUR (MINOR 1 FOOT INTERVAL)
- 35 — EXISTING CONTOUR (MAJOR 5 FOOT INTERVAL)
- PROPERTY LINE
- APPROX. 200 FT. JURISDICTION LIMIT
- APPROX. WATERS EDGE
- EXISTING NBC INTERCEPTOR SANITARY SEWER
- EXISTING CITY OF PAWTUCKET STORM DRAIN
- W — EXISTING WATER LINE
- S — EXISTING STORM/COMBINED SAN. SEWER OVERFLOW
- UE — EXISTING UNDERGROUND ELECTRIC CABLE IN CONDUIT
- EXISTING UNDERGROUND ELECTRIC MH/STRUCTURE
- EXISTING ACCESS ROAD
- EXISTING RETAINING WALLS
- EXISTING FENCE
- EXISTING CATCH BASIN LOCATIONS

SAMPLE LEGEND

SS-9	ATLANTIC SURFACE SOIL SAMPLE LOCATION
TSED-6	ATLANTIC SEDIMENT SAMPLE LOCATION
W-BVE SS-3	WESTON/BLACKSTONE VALLEY ELECTRIC SEDIMENT SAMPLE LOCATION
RIDEM SS-3	RIDEM SURFACE SOIL SAMPLE LOCATION
B-109/ MW-109	MONITORING WELL/BORING (VHB) SURVEYED
TP-3A	ATLANTIC TEST PIT LOCATION
W-BVE	WESTON/BLACKSTONE VALLEY ELECTRIC TEST PIT LOCATION
GZA TP-8	GZA/VALLEY GAS TEST PIT LOCATION
TB-15	ATLANTIC SOIL BORING LOCATION
MW-3	ATLANTIC MONITORING WELL LOCATION
M&E MW-1	METCALF & EDDY MONITORING WELL LOCATION
VHB-400	VHB SURFACE SOIL SAMPLE LOCATION NON-SURVEYED
TP-204	VHB TEST PIT (2006)
GZ-01	GZA TEST PIT (2009)
TB-300	GZA TEST BORING LOCATION (2010)
MW-320 S/D	GZA MONITORING WELL LOCATION (2010)
TP-306	GZA TEST PIT LOCATION (2010)
SS-100	GZA SURFACE SOIL SAMPLE LOCATION (2010)
SC31	ARCADIS SEDIMENT SAMPLE LOCATION (2008)
PIPE-1-061610	GZA RESIDUAL MATERIAL SAMPLE (2010)
TB-300	GZA PROPOSED TEST BORING LOCATION (2011)

GENERAL NOTES:

1. EXISTING CONDITIONS BASE MAP DEVELOPED FROM THE FOLLOWING:
   - ELECTRONIC FILES FROM GEI CONSULTANTS, INC. (FORMERLY AES) ENTITLED "HISTORIC STRUCTURES AND SAMPLE LOCATIONS", ORIGINAL SCALE 1"=80', DATED JULY 1999
   - ELECTRONIC FILES FROM VANASSE HANGEN BRUSTLIN, INC. ENTITLED "SOIL BORING, TEST PIT AND MONITOR WELL LOCATIONS", SCALE: 1"=60', UNDATED
   - ELECTRONIC FILES FROM WELSH ASSOCIATES LAND SURVEYORS, INC. ENTITLED "TOPOGRAPHIC SURVEY (AS-BUILT), FORMER TIDEWATER FACILITY, DEMOLITION OF GAS HOLDERS NOS. 7 & 8", DATED DECEMBER 17, 2010
   - ON-SITE INVESTIGATIONS AND SURVEYS BY GZA PERSONNEL DURING VARIOUS SITE VISITS DURING 2009 AND 2010.
2. PROPERTY LINES AND LOT INFORMATION ESTABLISHED FROM INFORMATION PROVIDED ON A DRAWING ENTITLED "PERIMETER SURVEY OF LAND AT THE TIDEWATER FORMER MGP SITE IN PAWTUCKET, RHODE ISLAND FOR ATLANTIC ENVIRONMENTAL SERVICES INC." DEVELOPED BY LOUIS FEDERICI AND ASSOCIATES AND AN AUTO CAD FILE ENTITLED "MAX READ FIELD TRACK EXPANSION 2007" PROVIDED BY THE CITY OF PAWTUCKET.
3. HORIZONTAL DATUM IS BASED ON NAD 1983 FROM BASE MAPPING PROVIDED BY GEI CONSULTANTS, INC.
4. VERTICAL DATUM IS BASED ON NGVD 1929 (MSL) FROM BASE MAPPING PROVIDED BY GEI CONSULTANTS, INC.
5. REFERENCE SEWER DATA FROM SCANNED IMAGE PROVIDED BY THE CITY OF PAWTUCKET, RHODE ISLAND, ENTITLED "STUDY OF SEWERAGE FACILITIES" BY WATERMAN ENGINEERING CO. & ANDERSON NICHOLS CO. DATED NOV. 1975, ORIGINAL SCALE 1"=400' & SCANNED IMAGES OF HISTORIC PLAN & PROFILE DRAWINGS PROVIDED BY THE CITY OF PAWTUCKET, RHODE ISLAND.
6. SITE UTILITIES TAKEN FROM 1984 SANBORN MAP AND HISTORIC FIGURES PROVIDED BY NATIONAL GRID. ALL UTILITY LOCATIONS ARE APPROXIMATE AND SHOWN FOR REFERENCE ONLY.

NO.	ISSUE/DESCRIPTION	BY	DATE

FORMER TIDEWATER FACILITY

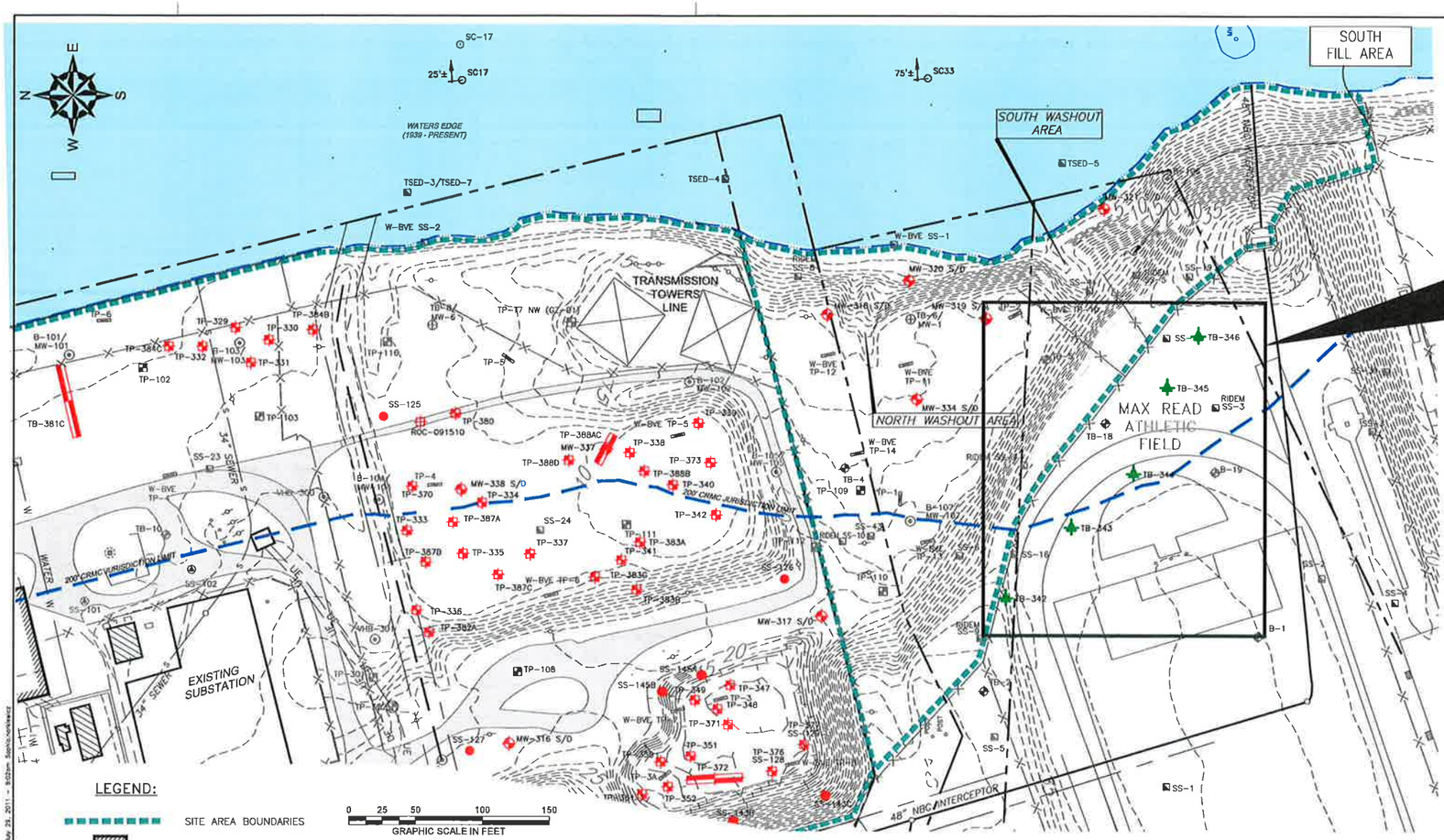
PAWTUCKET, RHODE ISLAND

EXISTING EXPLORATIONS LOCATION PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists
530 BROADWAY
PROVIDENCE, RHODE ISLAND 02909
(401) 421-4140

PREPARED FOR: NATIONAL GRID

PROJ MGR: MSK	REVIEWED BY: MSK	CHECKED BY: MSK	FIGURE 2
DESIGNED BY: SDN	DRAWN BY: CRD	SCALE: 1"=50'	
DATE JUNE 2011	PROJECT NO. 43654.00	REVISION NO. 0	SHEET NO. 2 OF 3



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THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY NATIONAL GRID OR THE NATIONAL GRID'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA AND NATIONAL GRID. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA AND NATIONAL GRID, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA AND NATIONAL GRID.

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FORMER TIDEWATER FACILITY

PAWTUCKET, RHODE ISLAND

PROPOSED EXPLORATIONS LOCATION PLAN

PREPARED BY:
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Engineers and Scientists
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(401) 421-4140

PREPARED FOR:
NATIONAL GRID

PROJ MGR: MSK	REVIEWED BY: MSK	CHECKED BY: MSK	FIGURE 3
DESIGNED BY: SDN	DRAWN BY: CRD	SCALE: AS NOTED	
DATE JULY 2011	PROJECT NO. 43654.00	REVISION NO. 0	SHEET NO. 2 OF 2