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New York State Department of Environmental Conservation
Bureau of Hazardous Waste and Radiation Management, 9th Floor
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ENVIRONMENTAL

Subject:
Former Northern Perimeter Ditch Supplemental Investigation Work Plan
Solvent Dock Area
Former Lockheed Martin French Road Facility
Utica, New York

Date:
April 16, 2010

Contact:
Christopher Motta

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Our reference:
NJ001019.0001

Dear Mr. Rosenmann:

This work plan describes the supplemental investigation that will be conducted at the former Lockheed Martin French Road facility as part of the *Corrective Measures Implementation Plan* (*CMIP*) required by the "Order On Consent," Index Number CO 6-20080321-5 (herein, the Order). The *Corrective Measures Study Report* (*CMS Report*) (ARCADIS 2009) presented the findings of the corrective measures study conducted pursuant to the *CMIP* and recommended a corrective-measures alternative for remediation of the facility. The supplemental investigation described herein further evaluates soil, groundwater, and soil-vapor quality described in the *CMS Report* associated with the Solvent Dock Area (the Site) at the French Road facility, specifically in the area of the former northern-perimeter ditch (or FNPD), located along the northern boundary of the site.

1.0 Site Description and History

In the early 1950s, General Electric Company (GE) acquired approximately 55 acres of undeveloped land on French Road in Utica, New York and constructed a 500,000-square-foot manufacturing facility. Figure 1 presents a site location map. GE production operations included the manufacturing, assembly, and testing of electrical components for the defense and aerospace industries. GE production operations continued until April 1993, when the facility was acquired by Martin Marietta Corporation (MMC). In March 1995, MMC merged with Lockheed Corporation to form Lockheed Martin Corporation (Lockheed Martin). In March 1996, Lockheed Martin sold the property to Pinnacle Park, Inc., which subsequently transferred the property

to and leased it back from the Oneida County Industrial Development Agency (OCIDA). ConMed Corporation (ConMed), a medical supplies manufacturer and distributor, now occupies the facility under a lease with OCIDA. Although Lockheed Martin no longer owns the property, Lockheed Martin retains responsibility for environmental cleanup activities related to past releases at the Solvent Dock Area.

Groundwater in the northeast portion of the main manufacturing building, an area known as the Solvent Dock, and in an area along the former northern-perimeter ditch has been adversely affected by volatile organic compounds (VOCs). The former Solvent Dock and immediate vicinity (referred to as the Solvent Dock Area) included a 275-gallon fiberglass overflow-retention tank. This tank stored spent, waste solvents, which were periodically sampled, pumped from the tank, and disposed of by waste haulers. The tank was removed in June 1990, at which time the tank was observed as dented and leaking fluid. The former northern-perimeter ditch (along the northern property boundary) was an open-drainage swale which received storm-water from the area north of the manufacturing building and conveyed the water, along with storm-water from the western portion of the property, to a manhole before discharge to the municipal storm sewer.

Since 1991, GE, MMC, and Lockheed Martin have completed groundwater investigations in these areas. In November 1994, Blasland, Bouck, & Lee, Inc. (BBL) completed an investigation of the facility storm sewer in the Solvent Dock Area. The investigation determined that VOCs detected in the storm sewer were attributable to the discharge of VOC-contaminated groundwater into the former northern-perimeter ditch and infiltration of VOC-contaminated groundwater from the Solvent Dock Area into the storm sewer beneath the building.

In May 1995, BBL completed a *Storm Sewer Investigation Report*, which recommended that the contaminated portion of the storm sewer flow be collected, treated, and discharged to meet proposed State Pollutant Discharge Elimination System (SPDES) VOC-effluent limitations. An evaluation of remedial design alternatives to address the source of VOCs entering the storm sewer that would remediate the contaminated groundwater was completed by BBL [in accordance with New York State Department of Environmental Conservation (NYSDEC) recommendations]. The results of this evaluation were presented in the *Storm Sewer Basis of Design Report* (BBL, 1995).

Based on this report, BBL completed the final design of the *French Road Facility Ground-Water Collection and Treatment System* in October 1995 and construction of

the system was completed in June 1996. The system collects groundwater from the Solvent Dock Area and the former northern-perimeter ditch area via two under-drains, conveys the collected groundwater to a treatment building where a low-profile air stripper removes the VOCs, and then discharges the treated effluent to the municipal storm-water system. After the system was installed and the ditch was replaced by a 24-inch HDPE pipe, groundwater no longer discharged into the northern-perimeter ditch. The pipe conveys storm-water that formerly flowed in the ditch. The area of the ditch was filled and contoured to match the existing grade.

A hydraulic- and chemical-oriented groundwater-monitoring program to evaluate the effectiveness of the groundwater collection and treatment system (GCTS) for the Solvent Dock Area was developed. This program, as presented in the *Ground-Water Sampling and Analysis Work Plan* (BBL, 1998), has been modified through monthly and quarterly correspondence with NYSDEC to accommodate the changing conditions over the life of the project. In response to observed groundwater contamination at the Site (as described above), Lockheed Martin voluntarily installed and operated the GCTS and began an investigation of soil vapor and indoor-air quality.

Lockheed Martin and NYSDEC entered into an Order on Consent, effective October 3, 2008 (CO 6-20080321-5). The Order identifies areas of concern (AOCs), including soil and groundwater quality. Each of these specific AOCs required further investigation and identification of corrective actions. Investigations into these AOCs were completed as part of the CMS and presented within the *CMS Report*. However, supplemental investigations into specific areas of the Site were deemed warranted by Lockheed Martin to fully characterize the extent of contamination and to confirm the effectiveness of the remedial actions recommended in the *CMS Report*. An initial supplemental investigation was completed in late-2009 and the findings summarized in the *Supplemental Investigation Report* (ARCADIS, 2010). The report confirmed the presence of VOC-impacted groundwater near the former northern-perimeter ditch and recommended further investigation into soil, groundwater, and soil-vapor quality, and groundwater flow and water-table elevation.

2.0 Objective

This FNPD supplemental investigation will further evaluate the soil, groundwater, and soil-vapor quality findings presented in the *Supplemental Investigation Report*. Additionally, soil vapor will be sampled to determine if off-site migration is a pathway of concern. Finally, groundwater elevations in the vicinity of the FNPD will be

monitored to confirm that that the existing GCTS (and specifically the FNPD under-drain) is capturing impacted groundwater. This work plan describes the processes that will be used to conduct the investigation. The proposed soil borings, groundwater-monitoring locations, and soil-vapor sampling locations were selected based on existing information (as presented in the *CMS Report* and *Supplemental Investigation Report*). The proposed locations are shown on Figure 2.

3.0 Scope of Work

3.1 Test Boring and DSITMS Program

Initially, ARCADIS will oversee the completion of a test boring program to evaluate potential sources of impacts to groundwater. A total of twelve soil borings will be drilled using a Geoprobe™ drill rig. The program includes the completion of six test borings (located to the south of the under-drain and north of the out buildings). Soils will be logged and screened for the presence of VOCs with a PID in accordance with the techniques described in the *Work Plan for Soil and Groundwater Investigation (*ARCADIS, 2008).

In addition, six test borings will be completed in a higher density in two focus areas, one adjacent to the west end of the Maintenance Building and one in an area northeast of the Storage Building (also indicated on Figure 2). It is currently anticipated that up to three additional borings will be completed in each of these two areas. Proposed test boring locations are indicated on Figure 2.

Soil samples collected from the twelve proposed borings will be subject to analysis by Direct Sampling Ion Trap Mass Spectrometry (DSITMS). DSITMS involves the continuous real-time monitoring of VOCs in soil samples collected from the soil borings as they are introduced into an ion trap mass spectrometer. Soil samples will be collected at 1-foot intervals and analyzed for VOCs using the on-site DSITMS technology.

The results of the DSITMS analysis will assist in defining the locations and screen interval depths for permanent piezometer installations (as described in section 3.2 below). It is currently assumed that the six test borings completed south of the under-drain and north of the Maintenance and Storage Buildings will each be converted to piezometers, and that two of the three test borings completed in each of

the two focus areas will also be converted to piezometers (total of ten piezometers). Further details on piezometer installations are provided in Section 3.2.

During the completion of the test borings, one soil sample from each test boring will be submitted to TestAmerica Laboratories of Amherst, New York for laboratory analysis for VOCS by EPA Method 8260 under a one-week turnaround time. Samples from each boring will be selected for chemical analysis, with preference given to those samples that show physical evidence of impacts (such as staining, odors, or elevated PID readings). Consideration to the overall distribution of soil sample selection for laboratory analysis will be given so that a broad distribution of sample depths is maintained to be representative of different exposure potentials, including possible exposure to near surface soil. QA/QC samples will be collected in accordance with the site-specific *Quality Assurance Project Plan* (QAPP, ARCADIS, 2009). The laboratory will provide NYS ASP Category B/EPA Level IV data deliverables for all samples submitted.

3.2 Piezometer Installation

Additional test borings to facilitate the installation of piezometers will be drilled using a Geoprobe™ drill rig. Initial proposed locations of these piezometers are indicated on Figure 2. A description of the proposed piezometer locations is as follows:

- Six piezometers will be installed north of the northern perimeter under-drain, but within the facility property. These piezometers will be used to evaluate potential off-site migration of constituents in groundwater, as well as the under-drain's hydraulic control. These wells will be located to provide spatial distribution north of the under-drain, from the west end of the Maintenance Building to the Groundwater Treatment Building. Each piezometer will include a 10-foot well screen proposed to be installed across the water table. These piezometers will be completed following the DSITMS work, and their final locations and well screen intervals may be modified based on earlier DSITMS results in order to preferentially investigate impacted media.

- As described in Section 3.1, six piezometers will be installed south of the under-drain and north of the out buildings adjacent to those borings where earlier DSITMS analyses were performed. Similarly, up to two piezometers will be installed adjacent to the west end of the Maintenance Building and up to an additional two piezometers will be installed in an area northeast of the Storage Building. These piezometers will be used to evaluate the presence

of constituents in groundwater within areas of potential source material. Screen intervals will be selected based on DSITMS results to target those zones where maximum soil impact was identified.

- Six piezometers will be installed in 3 north-south transects (2 piezometers per transect) extending from the south end of the Maintenance Building and Storage Building south toward the main plant facility. These piezometers are designed to provide hydraulic information relating the former northern-perimeter ditch to the rest of the Solvent Dock Area. Piezometers will be installed with 10-foot well screens positioned across the water table.

- Two piezometers will be installed within the Maintenance Building, and one piezometer will be installed within the Storage Building. These locations are designed to evaluate potential impacts to soil and groundwater beneath structures which are located within a potential source area. At each location, a piezometer with a 10-foot well screen will be installed in the completed test boring.

Piezometers will be installed in accordance with the methods identified in the *Work Plan for Soil and Groundwater Investigation (*ARCADIS, 2008). Soil samples will also be collected, consistent with the protocols described in Section 3.1 above. This includes the collection of continuous soil samples at each location, and the collection of one soil sample from each boring for submittal to the laboratory for VOCs via Method 8260.

Based on the results of the DSITMS program, piezometer locations and screen intervals may be modified from that identified above. Piezometer locations and construction will be biased toward those soil sample locations and intervals with the highest observed concentration of VOCs. Consideration may be given to also installing screens at select locations to document the boundaries of “clean” groundwater conditions.

Following installation, each newly-installed piezometer will be developed. Well development will be scheduled as soon as possible following installation, but not before a minimum of 24-hours following piezometer construction. The piezometers will be developed by bailing and/or pumping and surging to remove fine materials. The objective of piezometer development is to produce water that is visually free of sediment. The quality of water at the conclusion of development will be noted on the field logs.

Piezometers will be surveyed to the nearest 0.01 foot horizontally relative to the North American Datum (NAD) 1983. Piezometer measuring point elevations will be surveyed to the nearest 0.01 foot relative to the North American Vertical Datum (NAVD) 1988.

3.3 Groundwater Sampling

Following well development, groundwater samples will be collected from each newly installed piezometer as well as existing monitoring wells MW-6 and MW-9 and existing piezometers PZ-2 and PZ-4.

In accordance with the QAPP, groundwater samples will be collected using polyethylene disposable bailers with disposable polypropylene rope. Samples will be collected following three purged well volumes or sufficient recharge following well dewatering. Water generated as part of groundwater sampling will be containerized and processed through the groundwater collection and treatment system at the Solvent Dock Area.

Collected groundwater samples will be submitted to an analytical laboratory for analysis of VOCs by EPA Method 8260. A one-week turnaround time for results will be requested. QA/QC samples will be collected in accordance with the QAPP. The laboratory will provide NYS ASP Category B/EPA Level IV data deliverables for all samples submitted.

In addition to groundwater sampling, the groundwater elevation of all accessible piezometers and monitoring wells at the site will be gauged. Groundwater gauging will include probing each well for the potential presence of non-aqueous phase liquids and will be performed concurrent to groundwater sampling so that a synoptic depiction of groundwater elevations within the network can be assembled.

3.4 Soil-Vapor Probe Installation and Sampling

Six permanent soil-vapor probes will be installed with a Geoprobe™ drill rig concurrent with the above piezometer installation work (Figure 2). These six soil-vapor probes will be located north of the former northern-perimeter under-drain and on the facility property, in locations paired with the piezometers to be installed in the same area. Soil-vapor probes will be sampled to evaluate the potential for impacted groundwater to contribute to off-site migration of constituents via the soil-vapor pathway. Soil-vapor probes will be installed to a depth within 1 foot above the water

table. Probes will be installed in accordance with NYSDOH guidance (Final NYSDOH CEH BEEI Soil Vapor Intrusion Guidance, October 2006).

A single temporary soil-vapor probe was installed in advance of submittal of this work plan within the former Guard House (location is indicated on Figure 2). As discussed previously with NYSDEC and NYSDOH, the former guard house has recently been reoccupied to serve as ConMed's quality control department. As such, the building is considered occupied space that houses 6 to 8 employees on a regular basis during the work week. Lockheed Martin initiated sampling of this area in advance of the work plan to complete sampling activities within the heating season (prior to March 30, 2010), and to be proactive in the re-evaluation of this space now that it is occupied (note: the guard house was previously sampled for soil-vapor and indoor air, as presented within the *CMS Report*). Initial results of this sampling will be communicated to NYSDEC and NYSDOH in advance of the summary report (as described in Section 4) for the supplemental investigation proposed herein.

Following installation of each soil-vapor probe and confirmation of the probes' integrity, samples will be collected from each newly-installed location (with the exception of the guard house location identified above) as two-hour grab samples. Samples will be submitted and analyzed in accordance with the QAPP. In addition, one ambient (outdoor) air sample will be collected near the FNPD investigation area, at a location to be determined. This location will be chosen in an area representative of ambient air quality for the Site, and in an area free from interference from potential influences (such as cigarette smoke or car exhaust). Wind direction will also be considered in selecting this ambient-air sampling location.

3.5 Hydraulic Testing of Former Northern-Perimeter Ditch Under-Drain

To further evaluate the performance of the under-drain along the FNPD associated with the GCTS, a hydraulic testing program will be conducted. Initially, a round of groundwater elevation measurements from piezometers and monitoring wells in the vicinity of the former northern-perimeter under-drain will be collected to establish the groundwater configuration during system operation. After these data are collected, manhole MH-1 of the GCTS will be shut down in order to measure groundwater recovery as the water table equilibrates. Continuous groundwater elevation data will be collected at six monitoring locations by means of installed data loggers over a four-day period. These six locations will be selected following completion of the piezometer installation described above. Four rounds of manual groundwater elevation monitoring will be conducted during the first two days of the test (in addition

to continuous data logger monitoring). After 96 hours (four days) of continuous data logger monitoring, a fifth round of manual groundwater elevation monitoring will be conducted, after which time the system will be restarted.

3.6 Quality Assurance/Quality Control

QA/QC samples will be collected during the soil, groundwater, and soil-vapor investigations in accordance with the site's QAPP. Following receipt of laboratory data, a review of the deliverables (independent of the analytical laboratory) will be completed according to the guidelines established by NYSDEC for Data Usability Summary Review (DUSR). A DUSR report will be prepared for each sample data-package prepared by the laboratory. These DUSR reports will be appended to the summary report (as described below).

3.7 Management of Investigation Derived Waste

All drill cuttings will be collected in a 10-yard roll-off bin for off-site disposal. Water generated as part of well development or other investigation activities will be collected in containers. Solids (sediment) within the water will be allowed to settle out, and then sediment-free water will be processed through the on-site groundwater collection and treatment system. Any residual solids will then be collected along with the drill cuttings and disposed of off-site.

4.0 Report Preparation

The results and findings of the supplemental investigation will be presented in an addendum to the CMS. If necessary, Lockheed Martin will update the corrective-measures alternative recommended in the *CMS Report* to address the findings of the supplemental investigation described herein.

5.0 Schedule

Lockheed Martin will begin field activities immediately following NYSDEC approval of this work plan. A summary report will be provided to NYSDEC within 60 days of the receipt of all Category B analytical data from the investigation. Please contact us if you have any questions or require additional information.

Sincerely,

ARCADIS

Christopher J. Motta, C.P.G.
Project Manager

Attachments:
Figure 1: Site Location Map
Figure 2: Investigation Location Plan

Copies:

Mr. Gregory A. Rys, NYSDOH Herkimer
Mr. Charles Trione, Lockheed Martin
Mr. James Zigmont, CDM
Ms. Dale Truskett, Lockheed Martin
Ms. Kay Armstrong, Armstrong & Assoc.
Ms. Ginny Robbins, Bond, Schoeneck & King, PLLC
Mr. Paul Ragusa, ConMed
Mr. Jeffrey J. Bonsteel, ARCADIS

CITY:(MAHWAH) DIV/GROUP:(ENRI- 1) DB:(JG LD:(Opt) PIC:(Opt) PM:(CM) TM:(BM) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Mahwah\ACT\NJ001000\0001\00003\2010-04\FIG 1-Site Location.dwg LAYOUT: 1 SAVED: 4/2/2010 10:11 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ----PLOTSTYLETABLE: ----PLOTTED: 4/2/2010 10:12 AM BY: GONZALEZ, JAMES

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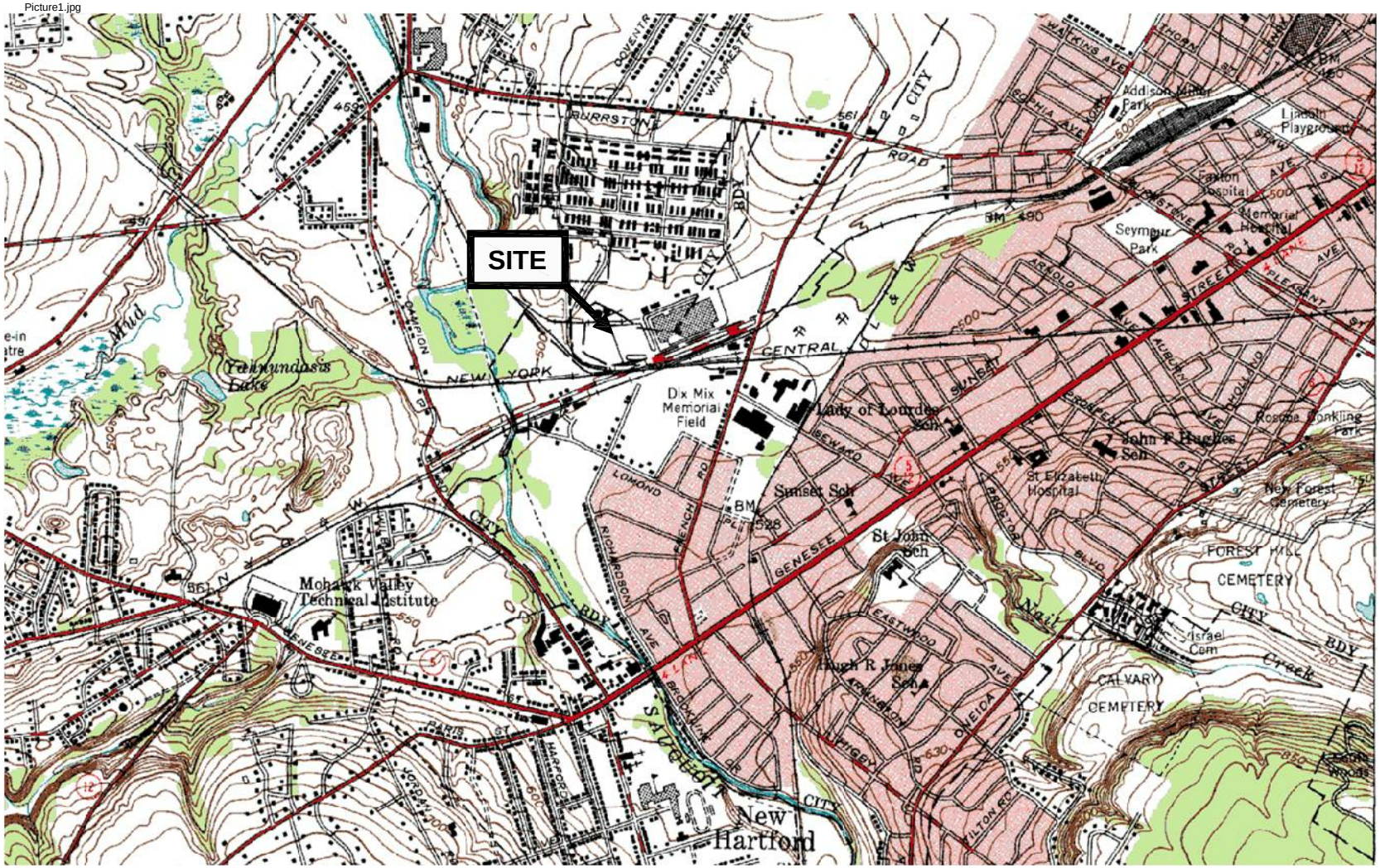

0 12000 24000
SCALE IN FEET

FNPD SUPPLEMENTAL INVESTIGATION WORK PLAN
FORMER LOCKHEED MARTIN
FRENCH ROAD PROPERTY
UTICA, NEW YORK

SITE LOCATION MAP

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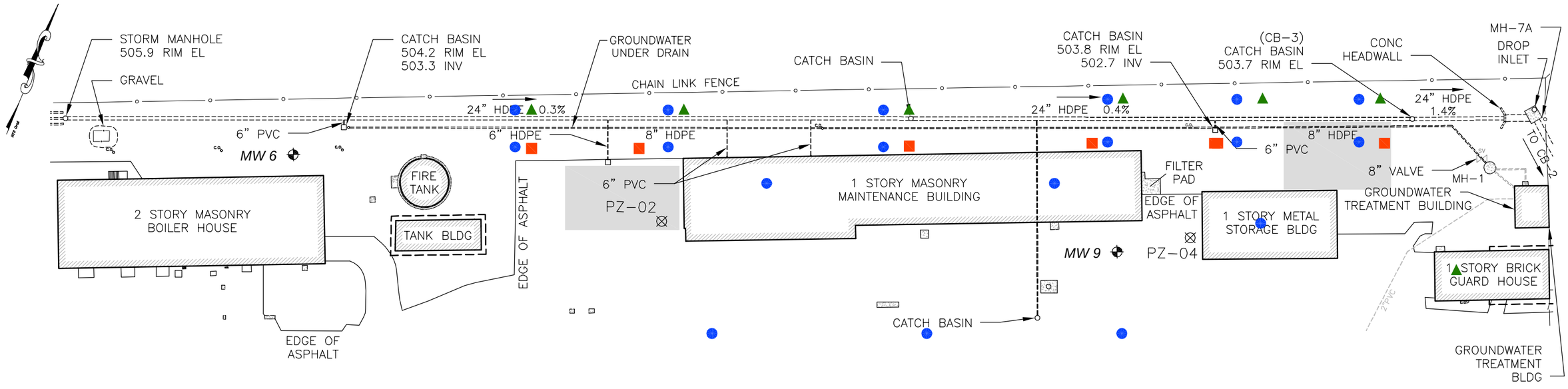
FIGURE
1



LEGEND:

- SEWER VALVE LOCATION
- MW 4 — MONITORING WELL LOCATION
- PZ-02 — PIEZOMETER LOCATION
- DSITMS LOCATION
- SOIL BORING/PIEZOMETER LOCATION
- SOIL GAS PROBE LOCATION
- AREA OF MULTIPLE DSITMS (GRID EVALUATION)

0 60' 120'

HORIZONTAL SCALE

FNPD SUPPLEMENTAL INVESTIGATION WORK PLAN
FORMER LOCKHEED MARTIN
FRENCH ROAD FACILITY
UTICA, NEW YORK

INVESTIGATION LOCATION PLAN

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FIGURE
2