



Delineation Soil Sampling Plan

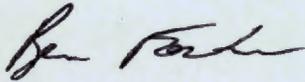
June 2, 2015

Florida Power & Light Company
HWR-442/File-16360/IW-79
Miami, Florida



Professional Certification

The geological services addressed herein, as defined in Chapter 492, Florida Statutes and in accordance with applicable provisions of Chapter 62-780 of the Florida Administrative Code, have been performed by and under the responsible charge of the professional geologist named below. These geological services are based upon the named professional's knowledge, information and belief, and in accordance with commonly accepted procedures consistent with applicable standards of practice. This certification is not a guaranty or warranty, either expressed or implied.



Ben T. Foster, P.G., Principal Hydrogeologist
Florida Professional Geologist No. 1872

Date: June 2, 2015



Prepared for:
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408

1. Introduction and Background

This soil sampling plan was prepared at the request of the Miami-Dade County Department of Regulatory and Economic Resources-Division of Environmental Resources Management (DERM). The proposed soil sampling addresses comment #1 from the October 17, 2014 DERM letter regarding the Florida Power & Light Company (FPL) former Cutler Power Plant property located at 14925 SW 67th Avenue, Miami, Florida. The referenced DERM comment is provided below. As discussed with DERM, FPL will conduct the work associated with this soil sampling plan separate and apart from the onsite work associated with remedial action plan submittals for the Cutler property.

“As discussed in the September 19, 2014 DERM/FPL meeting, current elevation differences between the northern FPL boundary and the abutting residential properties are not representative of conditions that existed prior to development of the homes. Contaminant impacts are present at this northern boundary that require delineation (i.e. B5-3N, B5-3 SB003, SB004, B6-3N, SB005, SB006, SB020, B6-1, B7-2, B8-1, B9-2, etc.). Therefore, you are required to continue delineation for all chemicals of concern (i.e. arsenic and vanadium) to the north. Please provide a sampling plan for prior review and approval and copy DERM on all site access requests and agreements. Equivalent depths based on previous elevations shall be considered in the plan.”

The Cutler property and surrounding area are shown on **Figure 1**. The majority of the area was developed by dredge and fill activities conducted from about 40 to 70 years ago. The Cutler power plant was constructed in the late 1940s and placed into operation in 1949. Since then residential development has continued in the area around the plant.

FPL began decommissioning the Cutler power plant in 2012. The plant structures have now been removed and site evaluation and cleanup work have been conducted under DERM's oversight. During the last two years, a considerable amount of site evaluation work has been performed at Cutler to assist in transitioning the property to benefit the local community. Assessments show that certain compounds such as arsenic and vanadium were detected at various locations on the property. Vanadium can be found in compounds commonly contained in the fuels used for power generation. Arsenic is one of the most common compounds found in the environment, with its occurrence attributable to both natural and man-made sources. Arsenic historically has been used as a component in pesticides and herbicides for agricultural, commercial, railroad and residential applications. Environmental studies conducted in Miami-Dade County show that typical background levels for arsenic in the Cutler area generally range from 5.2 milligrams per kilogram (mg/kg) to more than 7 mg/kg, with observed concentrations ranging up to more than 25 mg/kg. These conditions are true for land located in pristine natural settings, residential neighborhoods, parks, commercial properties and urban areas.

To complete the assessment work, DERM directed that FPL focus additional soil sampling for arsenic and vanadium near the northern property boundary of Cutler. The work includes both onsite and offsite sampling locations. FPL is agreeing to conduct the sampling with the acknowledgement that offsite land elevations are higher to the north. The finished

building floor grade elevations of the residential properties are on average 4.9 feet higher than the immediately adjacent land on the FPL Cutler property. Over the years, developers have continued to build up land elevations in order to meet Miami-Dade County building codes. The result of the development work makes it difficult to attribute soil conditions at the surface to any specific sources. In any case, and as directed, the information provided below describes the proposed offsite soil sampling work.

2. Proposed Soil Sampling

Given the development history of the Cutler area and the common occurrence of certain compounds within the environment, we propose a systematic approach for conducting additional soil sampling.

- Discuss the proposed sampling with DERM and receive approval for the plan prior to beginning the work;
- Inform the property owners and residents located where the proposed offsite sampling work will be conducted and obtain site access agreements;
- Conduct soil sampling in accordance with accepted industry standards and regulations;
- Evaluate and discuss the sampling results with DERM;
- Propose additional sampling if necessary based on the results and obtain site access agreements from the appropriate property owners if necessary; and
- Communicate to stake holders.

Soil borings will be advanced at the approximate locations depicted on **Figure 2**. These include 3 onsite and 6 offsite locations to continue the delineation of soil previously sampled at boring locations B5-3N, SB003, SB004, B6-3N, SB005, SB006, SB020, B6-1, B7-2, B8-1, and B9-2. The results obtained from boring location B5-3, one of the locations specified by DERM, were previously delineated by the results reported for boring SB002. **Table 1** summarizes the corresponding soil borings (previous and proposed), the approximate sampling depths and elevations, and the sampling parameters. A professional surveyor will be present during the site work to confirm the intended sampling intervals of each soil boring relative to the North American Vertical Datum of 1988 (NAVD88).

Attachment A provides more detailed views of the proposed sampling locations. The offsite sampling locations include NP001, NP002, NP003, NP004, NP005 and NP006 and the onsite locations include NP007, NP008, and NP009. The offsite soil samples are proposed for collection using a directional boring advanced from FPL's Cutler property. Some locations may not be accessible using directional boring. In those cases, a location may need to be adjusted and/or soil samples collected from a direct push drill rig or a

stainless steel hand auger used on the offsite property. As requested, DERM will be copied on all site access requests and agreements.

The onsite soil samples will be collected using a direct push drill rig.

The drilling and sampling equipment will be properly cleaned between each location. Sample collection will be conducted in accordance with standard operating procedures (DEP-SOP-001/01 FS 3000 as provided by Chapter 62-160, F.A.C.). The collected samples will be analyzed at a National Environmental Laboratory Accreditation Conference (NELAC)-certified environmental laboratory. Following receipt of the laboratory analytical reports, the sampling results will be evaluated and provided to DERM. If additional sampling is needed, FPL is prepared to work with DERM to meet the potential requirement.

Figures



TERRA CONSULTING GROUP
 9615 N. ANDRÉS WAY, SUITE #1
 FT. LAUDERDALE, FL 33309

SITE VICINITY MAP
FORMER CUTLER
POWER PLANT PROPERTY
MIAMI, FLORIDA

LEGEND:



APPROXIMATE BOUNDARY OF THE FORMER CUTLER
 POWER PLANT PROPERTY

NOTES:

SCALE:



FIGURE 1



Terra Consulting Group
TERRA CONSULTING GROUP, INC.
PHONE: (561) 333-8228
WWW.TERRACONSULTING.COM

PROPOSED SOIL BORING LOCATIONS

FORMER CUTLER POWER PLANT PROPERTY
MIAMI, FLORIDA

LEGEND:

- ▲ SOIL BORING (ARSENIC AND/OR VANADIUM EXCEEDS SCTLs)
- ▲ SOIL BORING (ARSENIC AND VANADIUM BELOW SCTLs)
- ⊙ PROPOSED SOIL BORING
- ▬ PROPOSED PARCEL DIVISIONS
- ▭ FORMER PLANT PROPERTY BOUNDARY

SCALE:

100 50 0 100
Feet

FIGURE 2

Tables

Table 1
Proposed Sample Locations, Parameters and Target Sample Depth

Reference Soil Boring	Reference Soil Boring Surface Elev. / Sample Elev	Proposed Soil Boring	Proposed Soil Boring Surface Elev. / Sample Elev	Proposed Sample Depths (ft bls)	Parameter
B5-3N	7.75/6.75	NP001	9.82/6.75	3 ft bls	Arsenic
SB003	6.50/6.25, 5.25 and 3.50	NP002	9.81/6.25, 5.25 and 3.50	3.6, 4.6, an 6.3 ft bls	Arsenic
B6-N3	5.55/4.55	NP003	8.81/4.55	4.2 ft bls	Arsenic
B6-1/SB004	5.36/0.36	NP003	8.81/0.36	8.5 ft bls	Vanadium
B6-1/SB005	4.30/4.05, 1.30 and -0.70	NP004	8.39/4.05, 1.30 and -0.70	4.3 and 7.1 ft bls	Arsenic
				9.1 ft bls	Vanadium
SB020	4.20/3.95	NP005	8.20/3.95	4.3 ft bls	Vanadium
SB006	3.62/0.62 and -1.38	NP006	7.12/0.62 and -1.38	6.5 and 8.5 ft bls	Arsenic
B7-2	3.62/-1.38	NP007	3.07/-1.38	4.5 ft bls	Arsenic
B1-8	3.51 -1.49	NP008	3.26/ -1.49	4.8 ft bls	Arsenic
B9-2	3.51/0.51	NP009	3.21/0.51	2.7 ft bls	Arsenic

Notes:

Elev- Elevation relative to North American Vertical Datum of 1988

Attachment A Sampling Areas



NP001

6420 Dolphin Drive
Parcel No.: 03-5024-002-0630

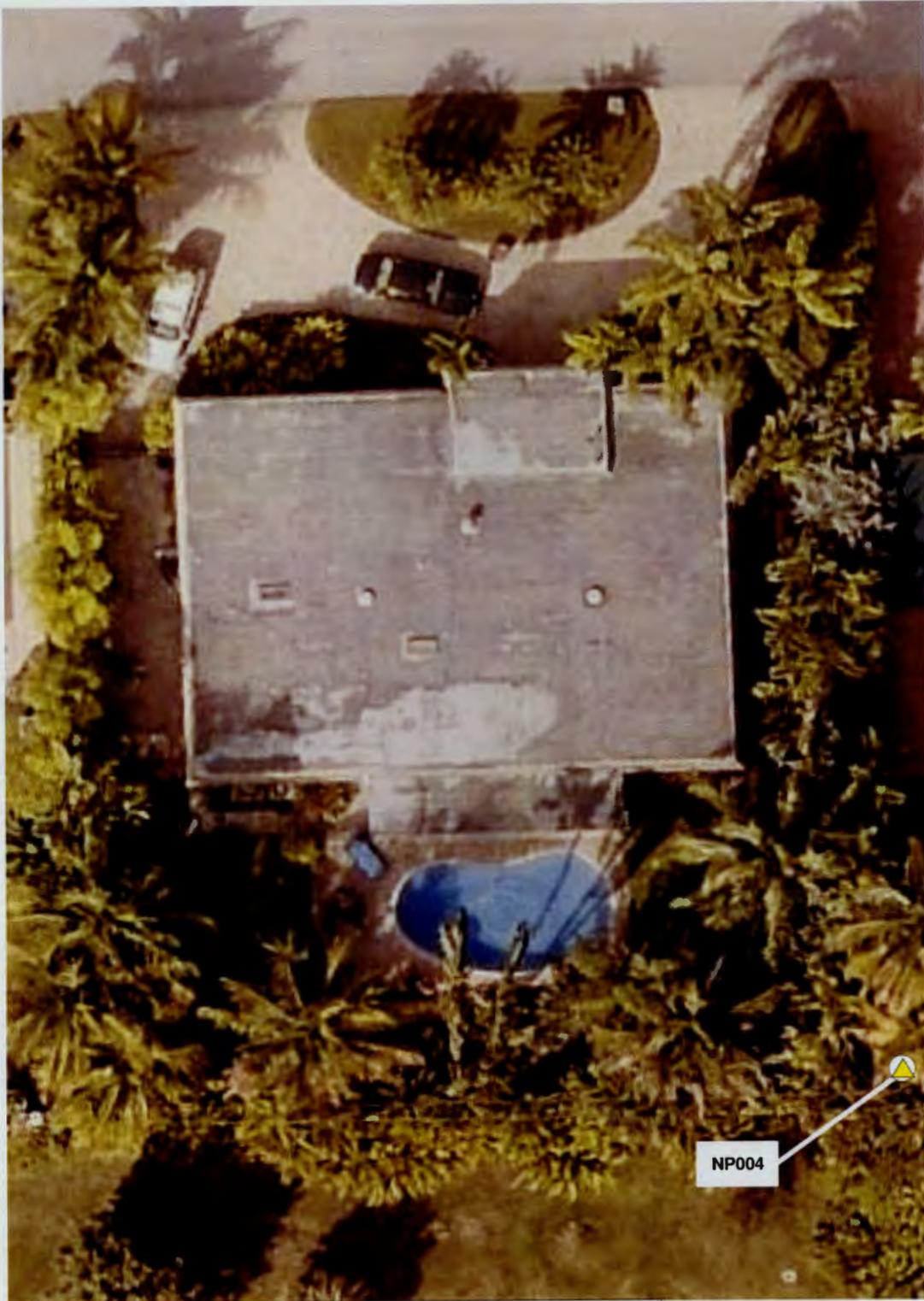


NP002

6410 Dolphin Drive
Parcel No.: 03-5024-002-0640



**6400 Dolphin Drive
Parcel No.: 03-5024-002-0650**



6380 Dolphin Drive
Parcel No.: 03-5024-002-0660



6340 Dolphin Drive
Parcel No.: 03-5024-002-0670



NP006

6330 Dolphin Drive
Parcel No.: 03-5024-002-0680



Date:

Mr./Ms. _____
Address1
Address2
City, State, Zip

Dear Mr./Ms: _____:

Florida Power & Light Company ("FPL") respectfully requests access to your property ("Property Owner") for the purpose of collecting soil samples to complete required site assessment work related to the closure of the Cutler plant. The required sampling is being completed at the request of the Miami-Dade County Department of Regulatory and Economic Resources Management (DERM).

The attached soil sampling plan provides details of the proposed work. Soil samples will be collected on your property using directional boring from FPL's Cutler property. Some locations may not be accessible using directional boring. In those cases, an onsite property location may need to be adjusted and soil samples collected from a direct-push drill rig or a stainless steel hand auger.

It is anticipated that the sampling can be completed by FPL in about two hours. Every precaution will be taken to ensure this sampling procedure does not cause any disruption. To help us minimize any impact to your daily activities, we ask that you complete the attached form to let us know if there are any special considerations that our crews should be aware of, or if you would like us to coordinate property access with your designated representative. FPL shall return any disturbed soil and sod to their original condition.

As Property Owner, you would agree to grant FPL access to your property for a period of one day by signing this document. This allows FPL to enter into a temporary access agreement to conduct sampling on your property. FPL shall contact the Property Owner 48 hours prior to start of work to notify the Property Owner of the sampling day.

The collected samples will be analyzed for selected compounds and FPL shall provide the results to the Property Owner and DERM. The compounds in question can be found on third page of the attached soil sampling plan.

Please contact FPL Representative (enter name, address, phone, email) with any questions.

Thank you for your time.

Sincerely,

**FLORIDA POWER & LIGHT
COMPANY, a Florida corporation**

By: _____
Name: _____
Title: _____

PROPERTY OWNER OR REPRESENTATIVE

By: _____
Print Name: _____
Address: _____

Phone: _____
E-mail (optional for contact purposes)

Special considerations:

Signature:
