

# *ARTHUR KILL 3*

## **US Army Corps of Engineers NEW YORK DISTRICT**

### **NOISE MONITORING REPORT EASTERN SHORE**

**(WEEK OF OCTOBER 07, 2013– OCTOBER 13, 2013)**

SITE NAK-1 – DUARTE MARTI SCHOOL, FRONT STREET, ELIZABETH, NEW JERSEY

SITE # NAK-2 – 21 ARLINGTON AVENUE, STATEN ISLAND, NEW YORK

SITE # NAK-3 – 238 FRONT STREET, ELIZABETH, NEW JERSEY

SITE # NAK-4 – 3290 RICHMOND TERRACE, STATEN ISLAND, NEW YORK

#### **LEQ COMPARISON TO NYC CODE CRITERIA (ABSOLUTE LEVELS CRITERIA)**

BACKGROUND AND DREDGE SOUND LEVEL MONITORING PROGRAM –  
SAK-2, SAK-3

JUNE 18, 2007 – OCTOBER 13, 2013



**(CONTRACT W912DS-09-D-0009 (IDC – 3002) TASK ORDER 0016)**

**TABLE OF CONTENTS**

1.0 INTRODUCTION ..... 1

2.0 MONITOR SITE LOCATIONS, DESCRIPTIONS & EXISTING CONDITIONS..... 1

3.0 LONG TERM NOISE MEASUREMENT METHODS & PROCEDURES..... 1

4.0 NOISE MONITORING DATA ANALYSIS ..... 1

5.0 LONG TERM FIELD MONITORING SUMMARY ..... 7

6.0 WEEK PERIOD SUMMARY..... 7

## **1.0 INTRODUCTION**

The purpose of the report is to provide an update to the on-going long-term measurements at noise-sensitive locations in the project area. This update incorporates long term baseline data collection and compares it to the NYC Code Criteria for absolute sound levels. This report includes noise monitoring data, dredging operations and a discussion of measured noise level exceedances above the impact criteria levels, if any, as defined by a “substantial” increase above baseline conditions.

## **2.0 MONITOR SITE LOCATIONS, DESCRIPTIONS & EXISTING CONDITIONS**

Noise monitoring locations were selected based on a survey of the project area and where landowner permission was granted. These locations are representative of noise-sensitive sites with the potential to be affected by dredge operation noise. Dredges ceased to operate in the KVK area during August 2011. Dredging commenced in the sAK-2 area in September 2011. Site NAK-4 was relocated to 3290 Richmond Terrace, Staten, Island, New York on May 12, 2011 and NAK-3 previously located on the Nicholas Street was relocated to 238 Front Street, Elizabeth, New Jersey on May 30, 2011. Site NAK-2 was relocated to 21 Arlington Avenue, Staten Island, New York on October 5, 2011 and Site NAK-1 was relocated to 182 West 8<sup>th</sup> Street, Bayonne, New Jersey on October 8, 2011. Site NAK-1 was relocated to the roof top of Duarte Marti School on April 8, 2013. The locations of the monitoring sites are shown on the following regional aerial. The descriptions, existing conditions, and other monitor site photos are presented in the following sections.

Please note that the aerial Photographs (2006) are copied from US Geological Survey web site (<http://seamless.usgs.gov/index.asp>). Street views and bird’s eye views are taken from previous USACE reports and were reported to have been copied from Google Earth or from Virtual Earth sources. The solid red dots represent the noise monitor locations. The solid yellow dot represent the co-location of the Noise monitor and a Sound recorder location. Various symbols as defined in the legend are used to represent the various dredge locations as provided by the Contractor, if any, during the period.

## **3.0 LONG TERM NOISE MEASUREMENT METHODS & PROCEDURES**

During these measurements, the noise monitors are programmed to calculate sound levels for one-hour intervals and provide the results in terms of the Leq, Lmax, L1, L10, L33, L90, and L99 metrics. All long-term noise measurements were performed with instruments that are in compliance with criteria for a Type 1 (Precision) Sound Level Meter as defined in the current version of ANSI Standard S1.4.

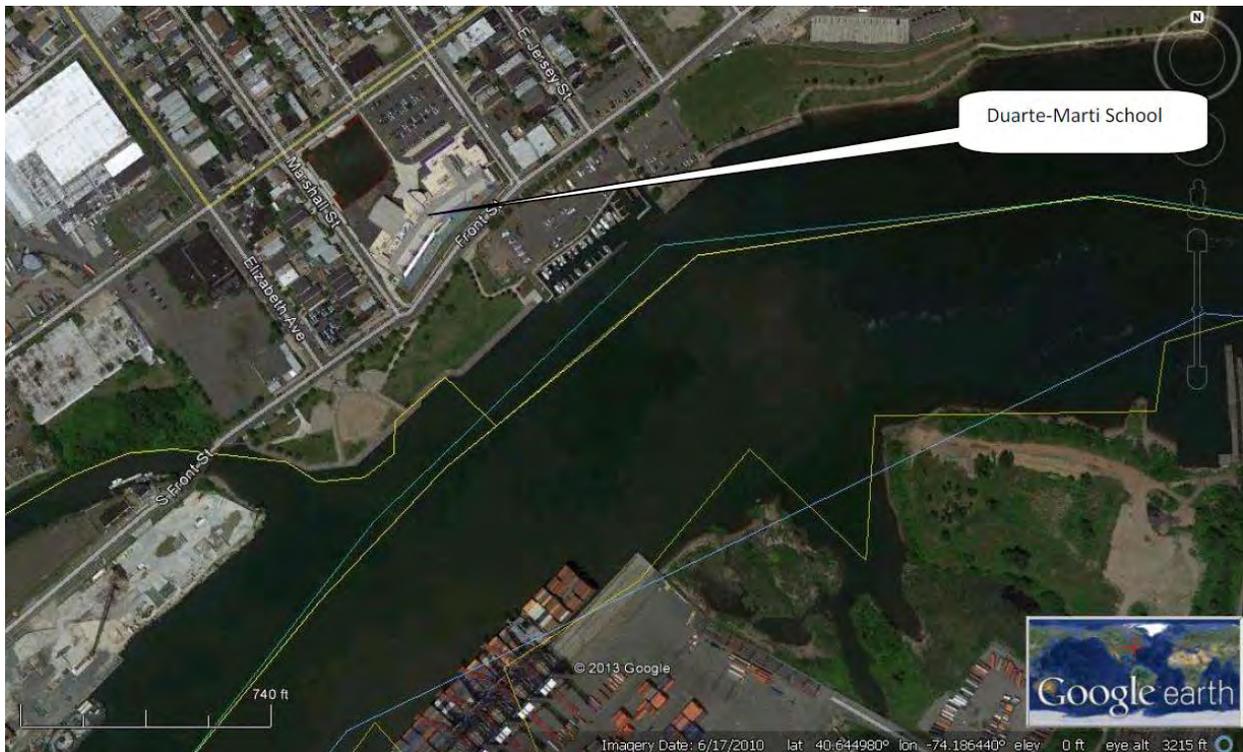
## **4.0 NOISE MONITORING DATA ANALYSIS**

Currently, long term hourly background data collections have been tabulated into median background levels. Since the new guidance was released by NYCDEP, the absolute level criteria has been replaced by the increase over existing sound level criteria. These potential criteria impacts occur when levels exceed 10 dBA or more during the daytime baseline conditions (7 AM-10 PM) and 7 dBA or more during the nighttime baseline conditions (10 PM-7 AM) at a residence as adopted from Local Laws of the City of New York No. 113, an amendment of the administrative code.

Though not directly applicable to the dredging, the increase over existing criteria is suggested to be the best available one to assess changes in the regional sound level environment. The reason that the absolute criteria is not as good a barometer to assess potential noise impacts is because the existing sound levels are usually above the Code at several sites, especially during the nighttime hours. Therefore, a typical person will tend to notice and react to an increase above their baseline environment more than if a dredge generated noise were to reach an absolute decibel level such as 60 or 65 dBA. Below is a brief description of the Monitoring sites used in this investigation.

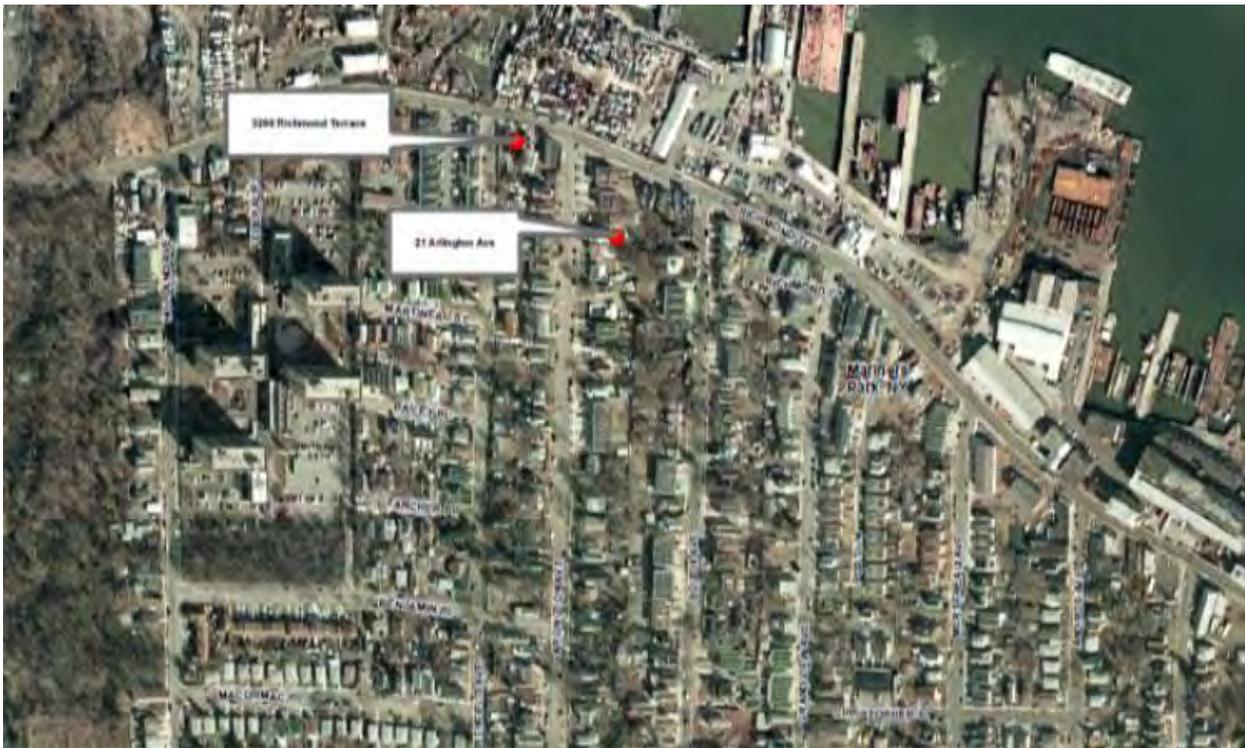
**Site NAK-1: Duarte Marti School, Front Street, Elizabeth, New Jersey**

The Noise monitor is located on the roof of Duarte Marti School. There are single and multi-family homes along with commercial interests in the area. Traffic from Front Street is the major noise contributor in addition to the channel traffic, School and neighborhood activities.



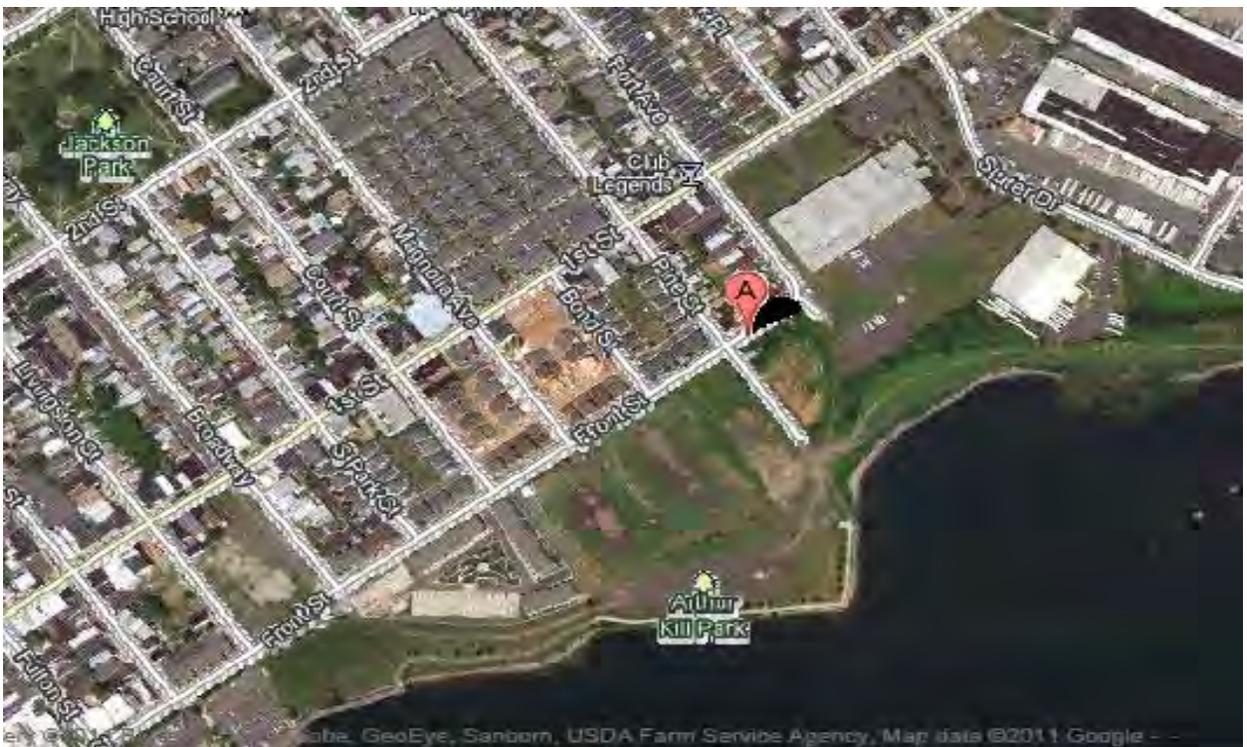
**Site NAK-2: 21 Arlington Avenue, Staten Island**

There are single and multi-family homes along with commercial interests across Richmond Terrace. Traffic from Arlington Avenue and Richmond Terrace are the major noise contributor in addition to the channel traffic and neighborhood activities. The microphone has a direct line of sight to the water, partially obstructed because of trees and other structures.



**Site NAK-3: 238 Front Street, Elizabeth, New Jersey 07206**

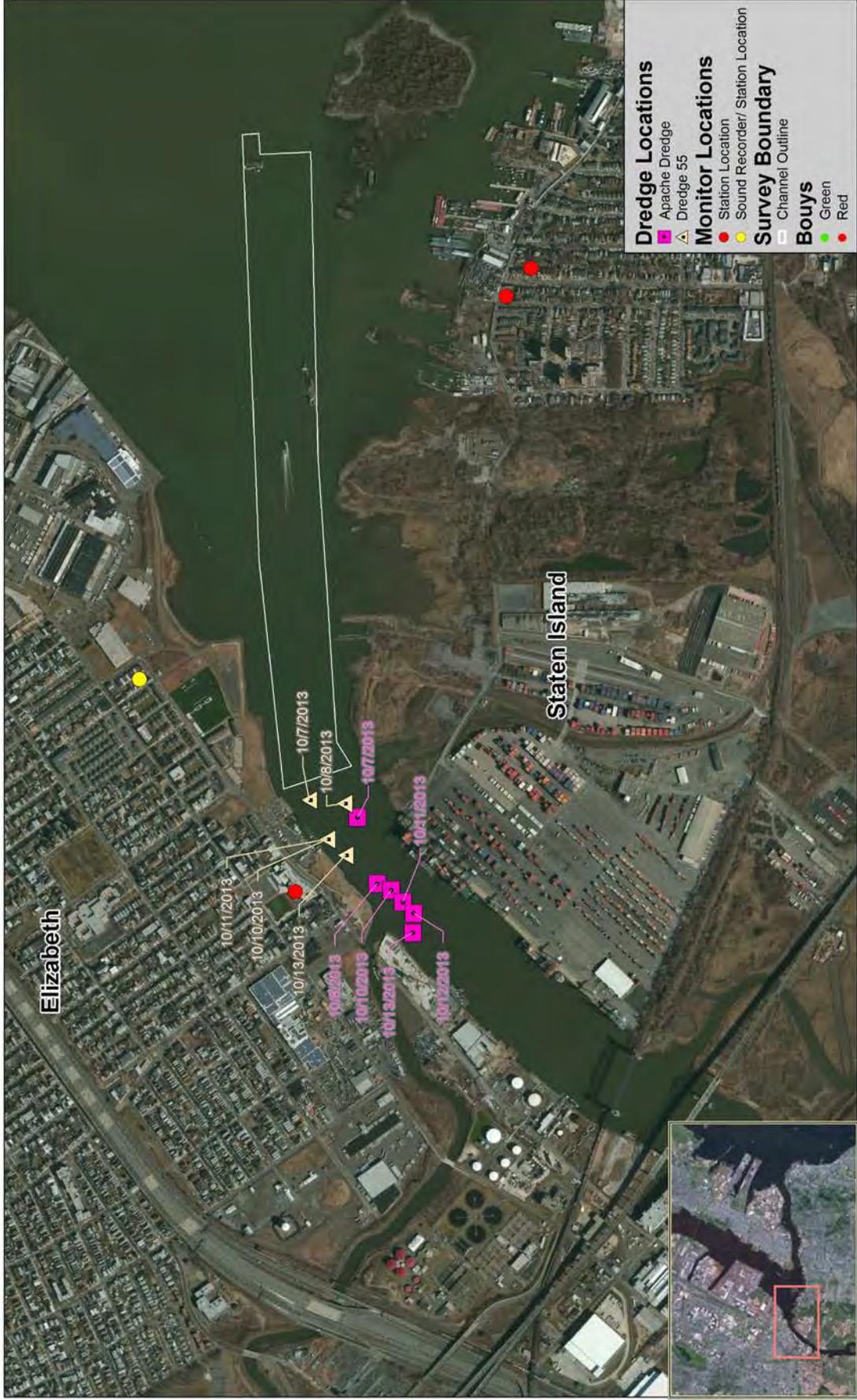
There are single and multi-family homes along with commercial interests in the area. Traffic from Front Street is the major noise contributor in addition to the channel traffic and neighborhood activities.



**Site NAK-4: 3290 Richmond Terrace, (KVK 9 - Staten Island, NY)**

This area includes single family residences. This site was retained in case of dredge activities in the AK2 area of the project grid. The location is within the first block of residences, slightly set back from Richmond Terrace. The microphone is located in the backyard of the house located in the southeast corner of Northfield and Richmond Terrace.





## 5.0 LONG TERM FIELD MONITORING SUMMARY

The regional sound levels are typical of a densely developed urban area with a mix of heavy industry, warehouses, commercial, marine, water transit, and single and multi-family residential land use types with a mix of parks, and commercial buildings. Typical regional noise generators include water traffic (plus on-site area noise from the Staten Island Ferry), aircraft, local construction, local vehicular traffic (Richmond Terrace is dominant), pedestrian and neighborhood activities, and home maintenance.

A summary of the weather conditions, events, dredge operations and other factors is presented in Section 6.0. When the dredges are in operation, sound levels that increase greater than the applicable daytime and nighttime impact criteria levels as defined by the substantial increase criteria are examined.

## 6.0 WEEK PERIOD SUMMARY

### Weather:

Day	Date	Average Wind Speed (mph)	Average High Wind Speed (mph)	Gust Speed (mph)	General Wind Direction	Meteorological Event/Amount
Monday	10/07/13	9	31	44	S	0.3 Inches, Rain
Tuesday	10/08/13	9	17	23	N	None
Wednesday	10/09/13	12	18	25	NNE	None
Thursday	10/10/13	13	18	25	NNE	0.02 Inches, Rain
Friday	10/11/13	13	20	26	NNE	0.04 Inches, Rain
Saturday	10/12/13	13	23	29	NE	None
Sunday	10/13/13	11	17	24	NE	None

Note: 1 inch of precipitation is equal to approximately 10 inches 14of snow.  
Source: Newark Airport Weather Data [Weather Underground]

**Dredge Operations:** The dredge operations at **sAK-2** are as listed below.

Day	Date	Dredge 54	Apache	Dredge 55	JP Boisseau	Delaware	Drill Boat Kraken	Information Source For Dredge Activity
Monday	10/07/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Tuesday	10/08/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Wednesday	10/09/13	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Thursday	10/10/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Friday	10/11/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Saturday	10/12/13	Inactive	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Sunday	10/13/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers

**Meteorological Information:** The winds gusts were Moderate. Minor rainfall was recorded on Monday, Thursday, and Friday.

**Newspaper Reports:** According to the Staten Island Advance, there were no reported activities that might have influenced the recordings.

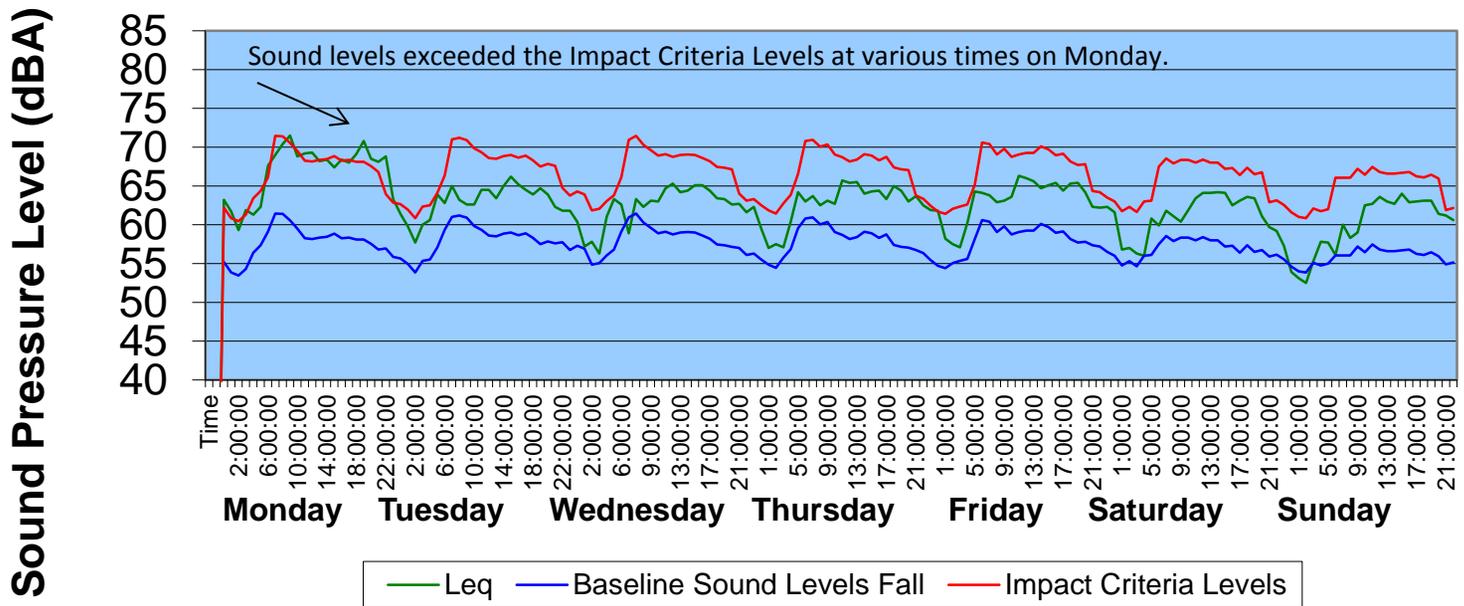
**Field Reports:** Noise monitoring in KVK-1 was discontinued during the first week of October, 2011. Four noise monitors were relocated to the sAK-2 area. One sound recorder was also installed at the new location on October 8, 2011, to correlate noise to sounds in the area to better correlate the exceedance, if any. Bayonne Noise Monitoring station was shut down during the afternoon on March 15, 2013 and On April 5, 2013 NAK-1 station has been relocated to Duarte Marti School, Front Street, Elizabeth, New Jersey.

**Other Information:** At a March 2009 public workshop, the general public indicated to the Corps' representatives that they were under the impression that the dredges had been working recently and, in some cases, continuously for years in this area as the people have claimed to hear the dredging. Since the clamshell dredges operated only from late September 2008 through the end of January 2009, (and previously, not since about the year 2000), it is apparent that there are other noise sources that are being misinterpreted by the public as the dredge operations. This "mistaken identity" will have to be observed as carefully as possible in the future when the dredging operations return so as to identify the proper noise generating sources and address them accordingly.

**General Overview During the Week:** The recorded sound levels were generally below the baseline (and, of course, the criteria), indicating that a normal person should not have been able to perceive any dredging noise unless they were genuinely attempting to focus on the noise itself. Noise monitoring station NAK-1 located at Duarte Marti School, Front Street, Elizabeth, New Jersey recorded exceedance at various times on Monday. Noise monitoring station NAK-2 located at 21 Arlington Avenue, Staten Island, New York recorded exceedance at various times on Monday. Noise monitoring station NAK-3 located at 238 Front Street, Front Street, Elizabeth, New Jersey recorded exceedance on Tuesday.

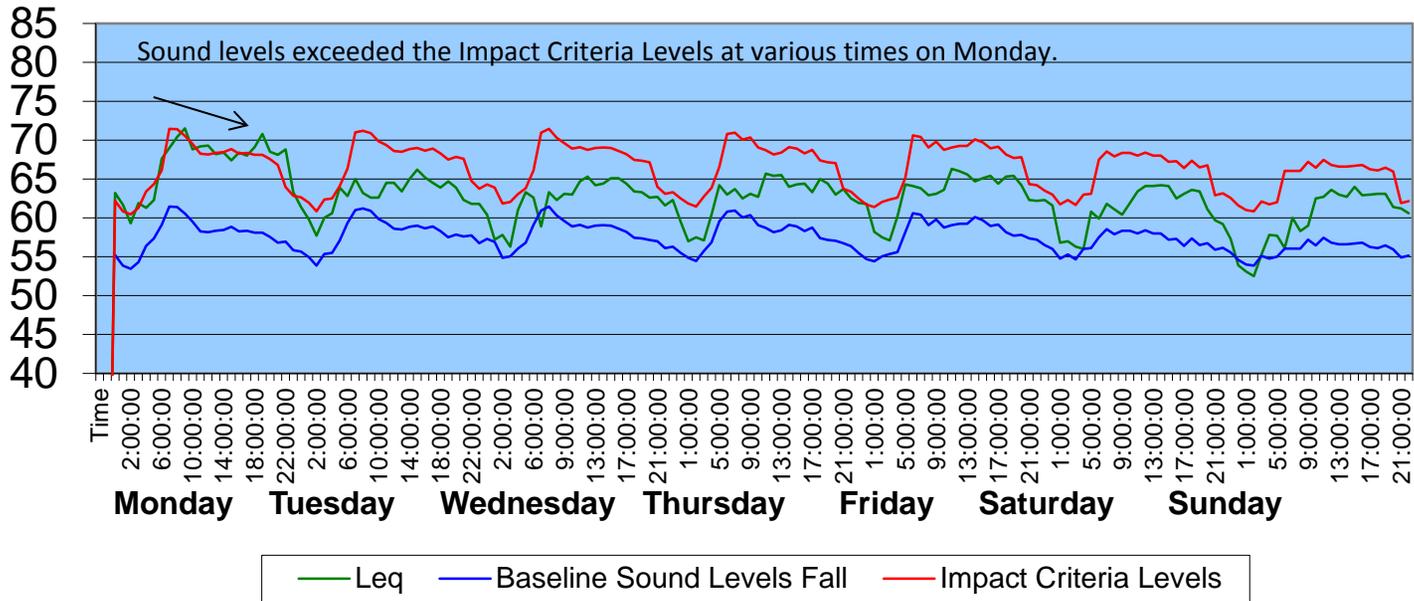
**Sites ES1 through ES7 – Leq Measurements vs. NYC Code Absolute Criteria**

**sAK-3- Site NAK-1 Duarte Marti School, Front Street,  
Elizabeth, New Jersey  
10/07/2013 - 10/13/13**

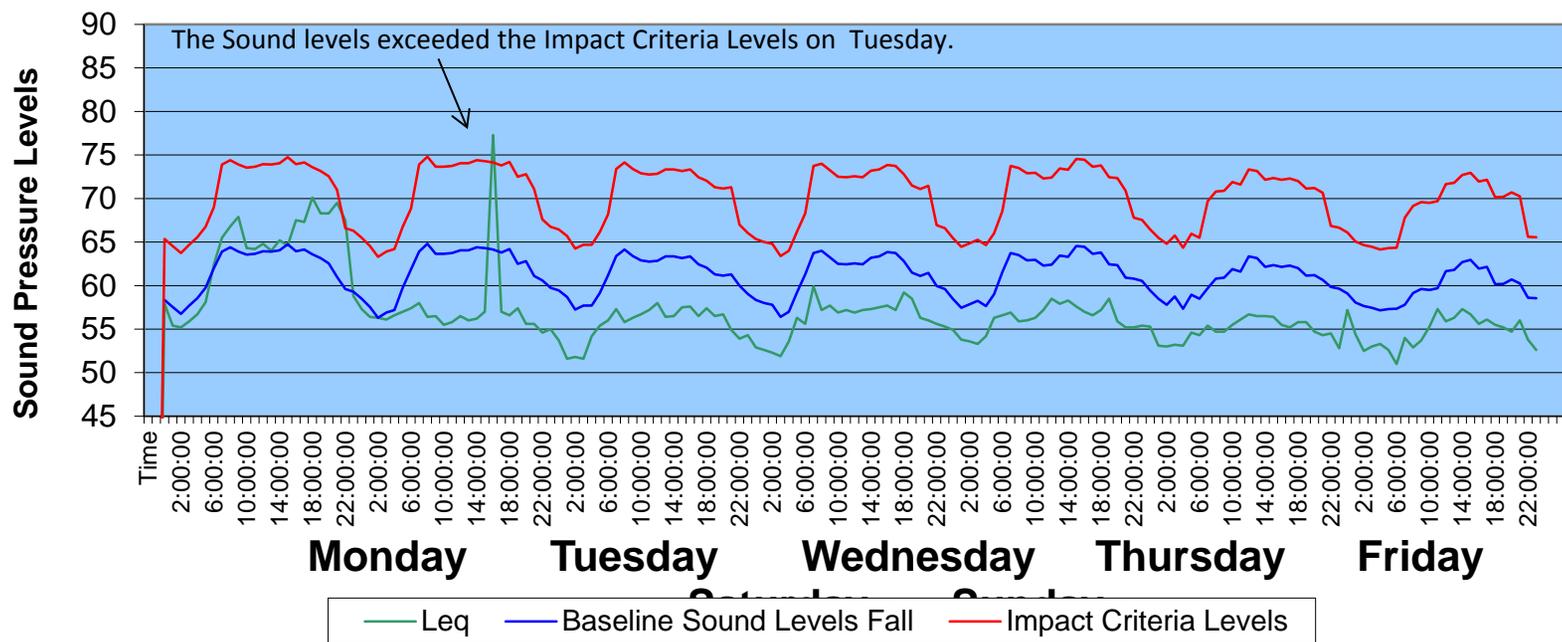


**sAK-3- Site ES-2 21 Arlington Avenue  
Staten Island, New York  
10/07/2013 - 10/13/2013**

**Sound Pressure Level (dBA)**



## sAK-3- Site ES-3 238 Front Street, Elizabeth, New Jersey 10/07/2013 - 10/13/2013



**sAK-3- Site ES-4 3290 Richmond Terrace,  
Staten Island, New York  
10/07/2013 - 10/13/2013**

