ARTHUR KILL 3

US Army Corps of Engineers
NEW YORK DISTRICT

NOISE MONITORING REPORT
EASTERN SHORE

(WEEK OF AUGUST 26, 2013– SEPTEMBER 1, 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 – SEPTEMBER 01, 2013

URS

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

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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, 2011and Site NAK-1 was relocated to 182 West 8th 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.

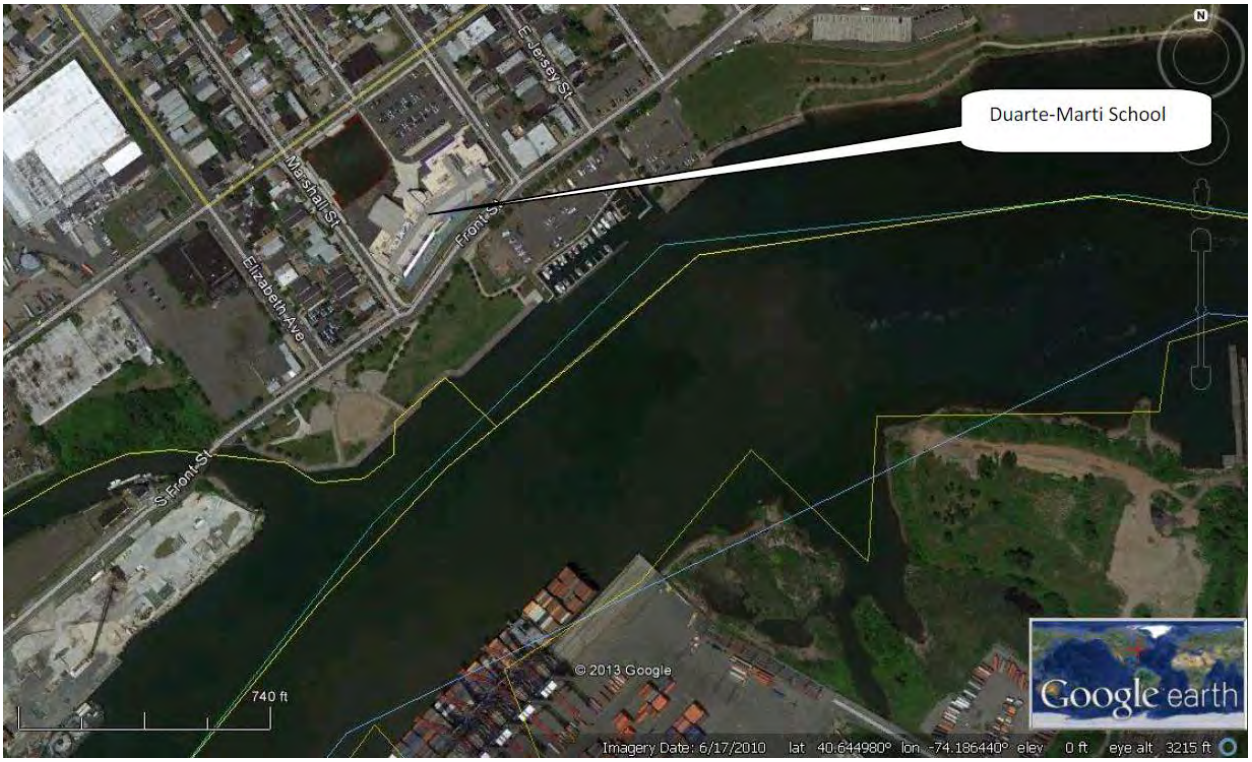
4.0 NOISE MONITORING DATA ANALYSIS

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.

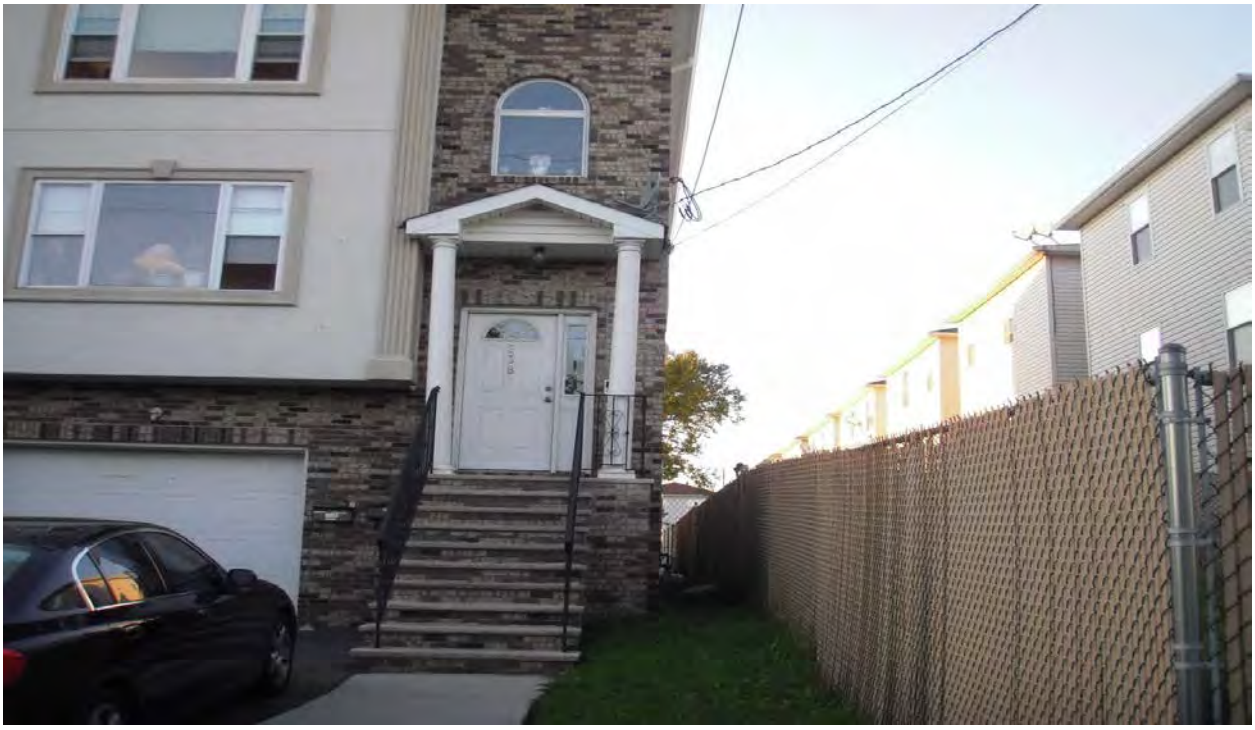


Site NAK-2: 21 Arlington Avenue, Staten Island

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.

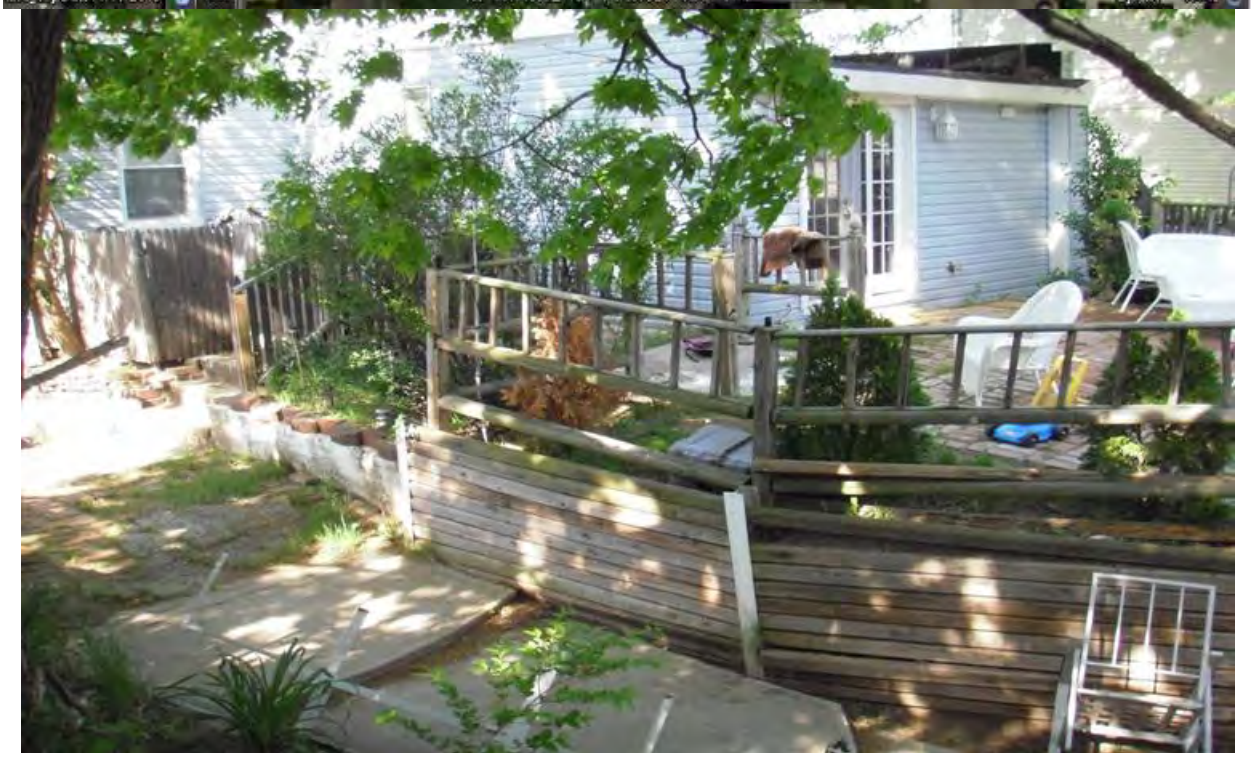
Site NAK-3: 238 Front Street, Elizabeth, New Jersey 07206

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.



Elizabeth
Staten Island
8/27/2013
8/26/2013
8/29/2013
8/28/2013
9/1/2013
8/31/2013
8/28/2013
8/30/2013
8/27/2013
8/31/2013
8/31/2013
8/28/2013
8/31/2013
8/28/2013
8/28/2013
8/28/2013
8/30/2013
9/1/2013
Dredge Locations
Apache Dredge
Dredge 55
Monitor Locations
Station Location
Sound Recorder/ Station Location
Survey Boundary
Channel Outline
Bouys
Green
Red
Source: ESRI ArcGIS High Resolution Imagery
Scale: 0 800 1,600 Feet

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	08/26/13	12	21	28	SW	0.01 Inches, Rain
Tuesday	08/27/13	9	24	29	NW	0.02 Inches, Rain
Wednesday	08/28/13	3	16	24	NE	1.34 Inches, Rain
Thursday	08/29/13	6	13	NP	ENE	Trace, Rain
Friday	08/30/13	10	17	25	SW	None
Saturday	08/31/13	10	17	22	SW	None
Sunday	09/01/13	6	13	16	S	Trace, Rain

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 55	Apache	FJ Belesimo	JP Boisseau	Delaware	Drill Boat Kraken	Information Source For Dredge Activity
Monday	08/26/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Tuesday	08/27/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Wednesday	08/28/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Thursday	08/29/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Friday	08/30/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Saturday	08/31/13	Inactive	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers
Sunday	09/01/13	Active	Active	Inactive	Inactive	Inactive	Inactive	US Army Corps of Engineers

Meteorological Information: The winds were low to moderate. Rainfall was recorded during the week on Monday, Tuesday, Wednesday, Thursday, and Sunday. **Note:** Wind Gust for Wednesday was Not Published (NP).

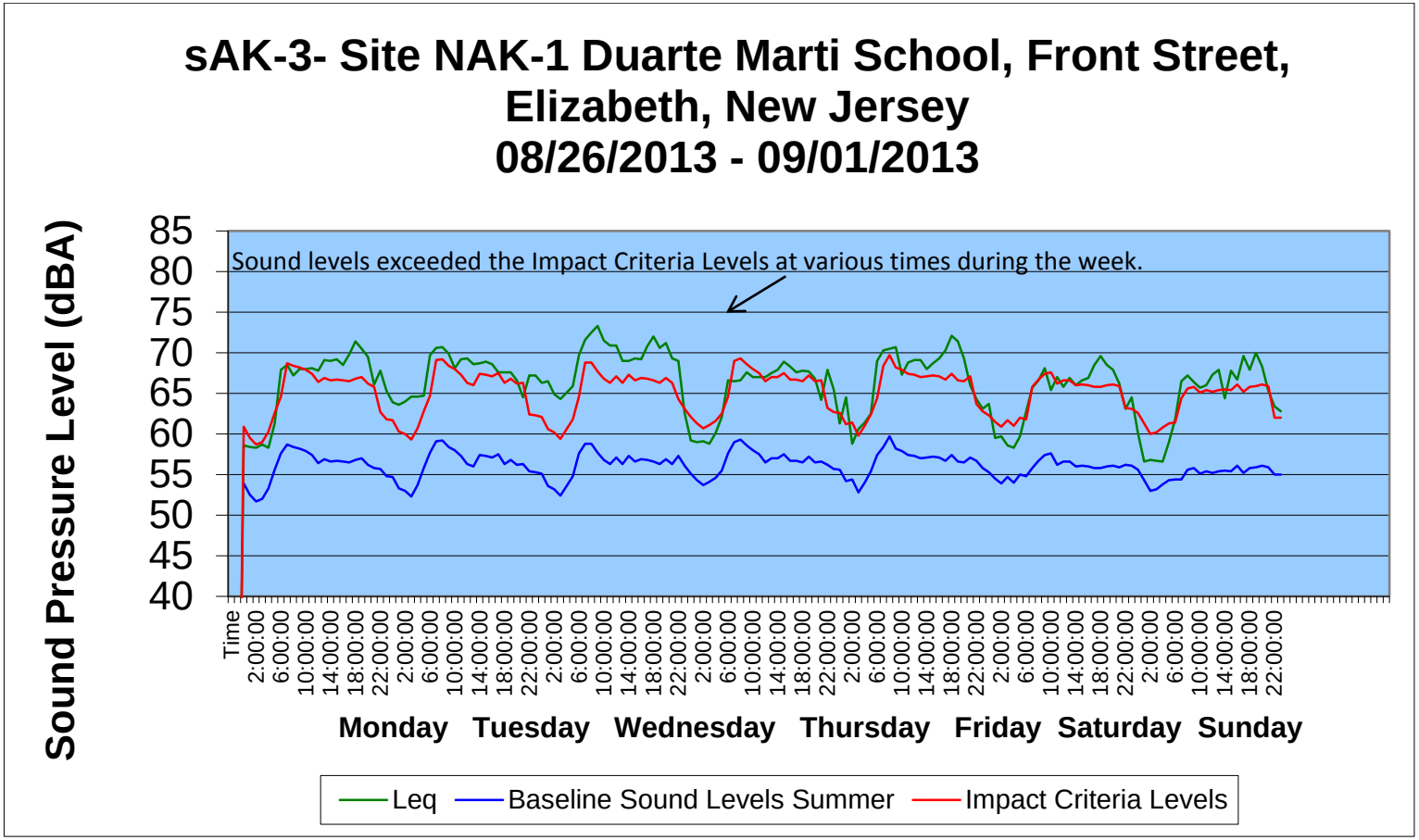
Newspaper Reports: According to the Staten Island Advance, there were no reported activities that might have influenced the recordings.

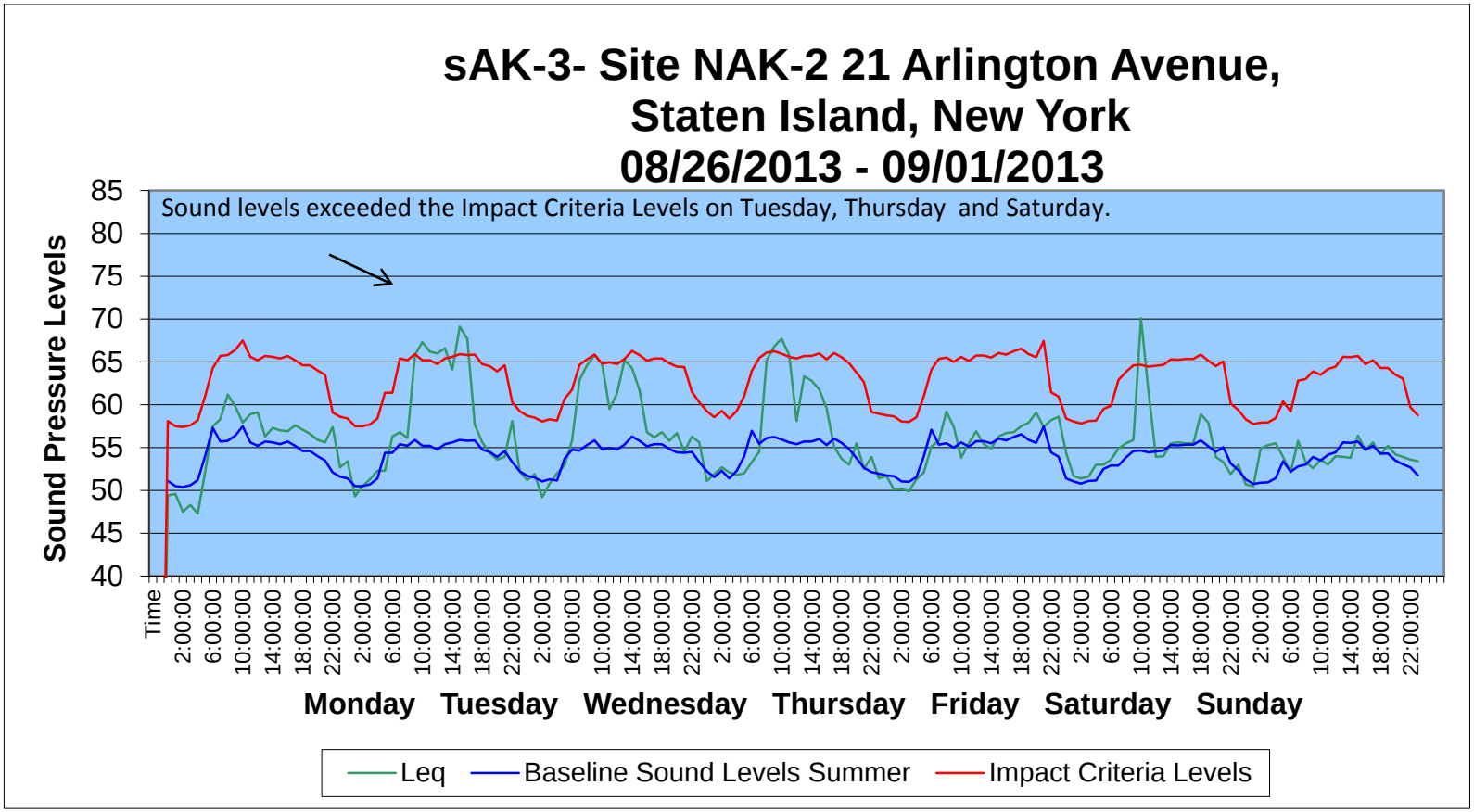
Field Reports: Noise monitoring in KVK-1 was discontinued during the first week of October, 2011. Four noise monitors were relocated to the sAK-2 area. One sound recorder was also installed at the new location on October 8, 2011, to correlate noise to sounds in the area to better correlate the exceedance, 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.

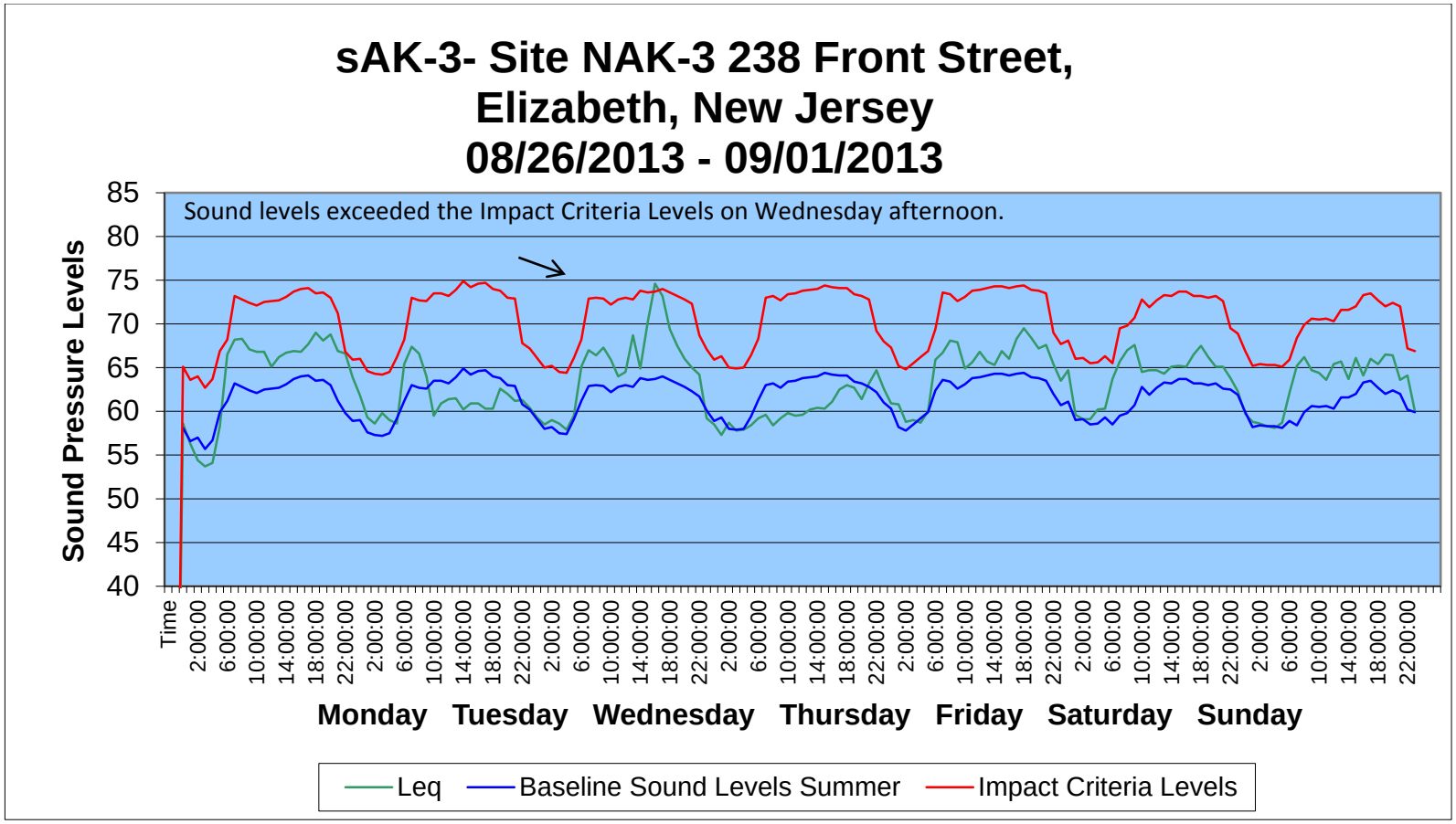
Other Information: At a March 2009 public workshop, the general public indicated to the Corps' representatives that they were under the impression that the dredges had been working recently and, in some cases, continuously for years in this area as the people have claimed to hear the dredging. Since 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.

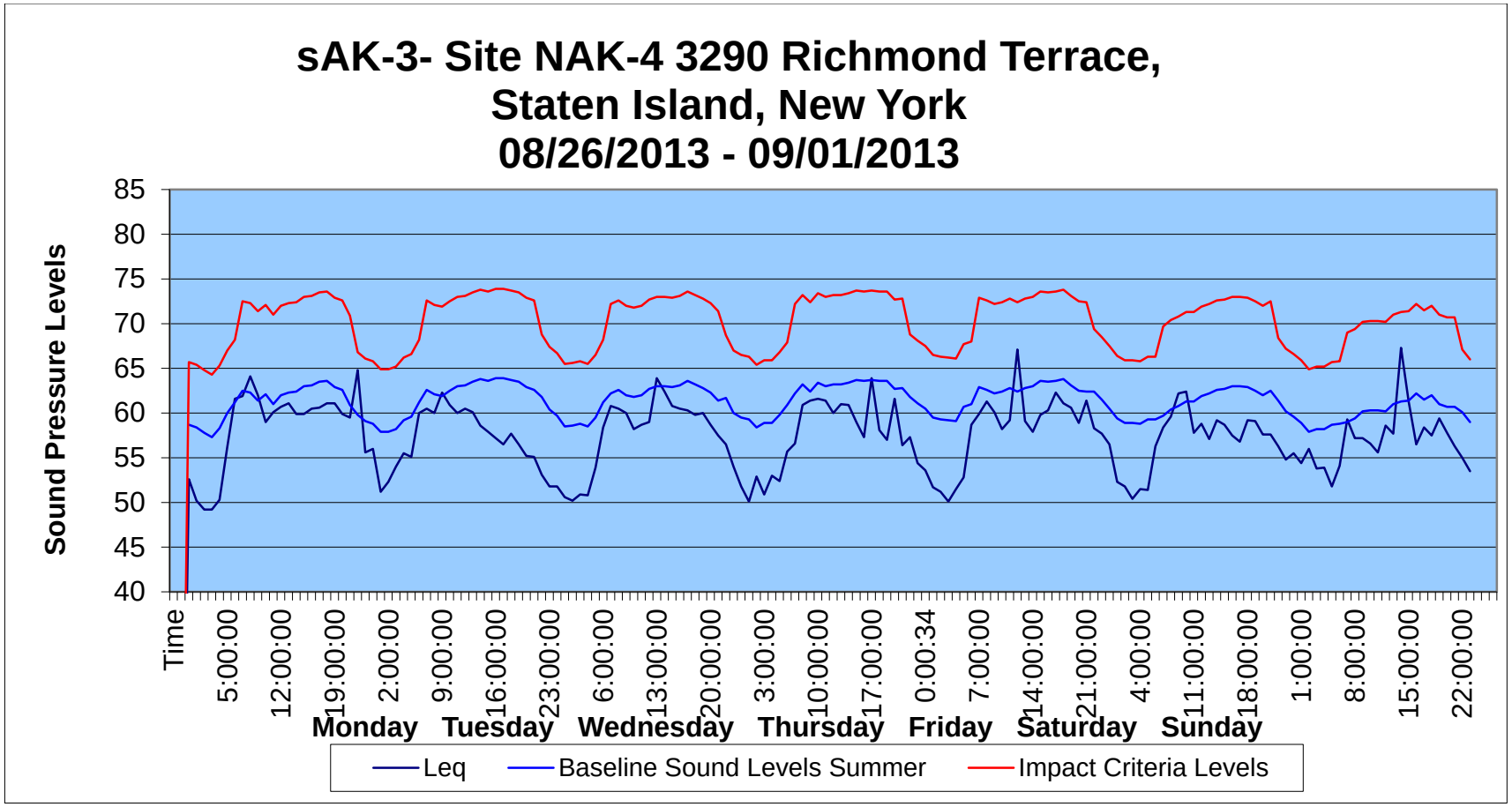
General Overview During the Week: The recorded sound levels were generally below the baseline (and, of course, the criteria), indicating that a normal person should not have been able to perceive any dredging noise unless they were genuinely attempting to focus on the noise itself. Noise monitoring station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

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




sAK-3- Site NAK-2 21 Arlington Avenue,
Staten Island, New York
08/26/2013 - 09/01/2013
Sound levels exceeded the Impact Criteria Levels on Tuesday, Thursday and Saturday.
Sound Pressure Levels
85
80
75
70
65
60
55
50
45
40
Time
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Leq
Baseline Sound Levels Summer
Impact Criteria Levels


sAK-3- Site NAK-3 238 Front Street,
Elizabeth, New Jersey
08/26/2013 - 09/01/2013
Sound levels exceeded the Impact Criteria Levels on Wednesday afternoon.
Sound Pressure Levels
85
80
75
70
65
60
55
50
45
40
Time
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Leq
Baseline Sound Levels Summer
Impact Criteria Levels


sAK-3- Site NAK-4 3290 Richmond Terrace,
Staten Island, New York
08/26/2013 - 09/01/2013
Sound Pressure Levels
85
80
75
70
65
60
55
50
45
40
Time
5:00:00
12:00:00
19:00:00
2:00:00
9:00:00
16:00:00
23:00:00
6:00:00
13:00:00
20:00:00
3:00:00
10:00:00
17:00:00
0:00:34
7:00:00
14:00:00
21:00:00
4:00:00
11:00:00
18:00:00
1:00:00
8:00:00
15:00:00
22:00:00
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Leq
Baseline Sound Levels Summer
Impact Criteria Levels