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Reconnaissance Investigation Report for the Hackensack River Study Area

Peninsula Restoration Group
Kearny, New Jersey

May 2005

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engineers, scientists, economists

CERTIFICATION
Pursuant to N.J.A.C. 7:26C-1.2

Regarding the *Reconnaissance Investigation Report for the Hackensack River Study Area* dated May 2005 (including all attachments and enclosures, the "Submission") submitted herewith and prepared by Blasland, Bouck & Lee, Inc. (BBL) for the Peninsula Restoration Group in connection with a reconnaissance investigation of a portion of the Hackensack River beginning 1/2 mile upstream from the northern side of the Diamond Site and ending 1/2 mile downstream from southern side of the Koppers Seaboard Site (the "Study Area"), the undersigned officer of BBL does state as follows:

"I certify under penalty of law that I have personally examined and am familiar with the Submission and that all the information provided therein is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information, and that I am committing a crime of the fourth degree if I make a written false statement that I do not believe to be true. I am also aware that, if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

BLASLAND, BOUCK & LEE, INC

By: _____ 5/19/05
Robert Romagnoli — Date
Vice President

Sworn to and subscribed before me on this 19th day of May, 2005

_____
Signature of Notary Public
(Stamp and Seal/Commission Expiration Date)

JOYCE M. WHEELER
Notary Public In The State Of New York
Qualified In Onon. Co. No. 4239828
My Commission Expires Dec. 31, 2005

CERTIFICATION
Pursuant to N.J.A.C. 7:26C-1.2

Based on the attached Certification of Robert Romagnoli, Vice President of BLASLAND, BOUCK & LEE, INC, regarding the *Reconnaissance Investigation Report for the Hackensack River Study Area* dated May 2005 (together with all attachments, the "Submission") prepared for the Penninsula Restoration Group in connection with a reconnaissance investigation of a portion of the Hackensack River beginning 1/2 mile upstream from the northern side of the Diamond Site and ending 1/2 mile downstream from southern side of the Koppers Seaboard Site (the "Study Area") in Kearny, NJ, each of the undersigned member companies of the Peninsula Restoration Group, by their duly authorized officers does certify as follows:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein including all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, to the best of my knowledge, I believe the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information, and that I am committing a crime of the fourth degree if I make a written false statement that I do not believe to be true. I am also aware that, if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

BEAZER EAST, INC.

By: Robert S. Maskwell
[NAME]. Robert S. Maskwell
[TITLE] Vice President

Sworn to and subscribed before me this 18th day of May, 2005:

Maureen M. Stetzer
Signature of Notary Public

(Stamp and Seal/Commission Expiration Date)

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Maureen M. Stetzer, Notary Public
City Of Pittsburgh, Allegheny County
My Commission Expires July 3, 2008
Member, Pennsylvania Association Of Notaries

STANDARD CHLORINE CHEMICAL CO., INC.

By: Margaret W. Kelly
Margaret W. Kelly, Esq.
Vice President

Sworn to and subscribed before me this 13 day of May, 2005:

Signature of Notary Public

(Stamp and Seal/Commission Expiration Date)

CRAIG WEXLER
Notary Public, State of New York
No. 01WE6071493
Qualified in New York County
Commission Expires March 18, 2006

TIERRA SOLUTIONS, INC.

By:
David Rabbe
President

Sworn to and subscribed before me this 16th day of May, 2005

Signature of Notary Public

(Stamp and Seal/Commission Expiration Date)

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1. Introduction

The purpose of this report is to document the activities (and associated results) conducted as part of the Hackensack River Study Area (HRSA) Reconnaissance Investigation. As discussed further herein, this program was implemented in accordance with the Reconnaissance Phase Work Plan for the Hackensack River Study Area (Work Plan) [Blasland, Bouck & Lee, Inc. (BBL), November 2004], as approved by the New Jersey Department of Environmental Protection (NJDEP). This documentation report has been developed by BBL on behalf of Beazer East, Inc., Standard Chlorine Chemical Company, Inc., and Tierra Solutions, Inc. (collectively referred to as the Peninsula Restoration Group, or the PRG).

As shown in Figure 1-1, the HRSA is approximately 2.7 miles in length, with the upper and lower boundaries located approximately one-half mile from the Former Diamond Shamrock Site and the Former Koppers Seaboard Site, respectively. As described in the Work Plan, the Reconnaissance Investigation included the following three tasks:

- Task 1 – Data Compilation and Review;
- Task 2 – Collection of Field Data and Information; and
- Task 3 – Source Identification.

In general, Task 1 consisted of collecting and reviewing historical literature (including pertinent data) that described and/or quantified various features of the Hackensack River. This task (which is still on-going) assisted in focusing the Reconnaissance effort, and will be useful in guiding any future sampling efforts. Task 2 included implementation of a field-based investigation that was meant to characterize HRSA physical features, such as water depths, soft sediment depths, and ecological habitat. Finally, Task 3 centers on identifying potential sources to the River, including, but not limited to, permitted and un-permitted direct or indirect dischargers, potential groundwater discharges, treatment plant outfalls, storm water outfalls, and combined sewer overflows. Similar to Task 1, this work was initiated as part of the Reconnaissance Investigation, but has not yet been completed.

As indicated above, Tasks 1 and 3 are still ongoing and, as such, a preliminary Conceptual Site Model (CSM) has not been included in this report. Given the project's expedited field schedule (as requested by NJDEP at our January 20, 2005 meeting in Trenton, New Jersey), these tasks could not be completed in the manner and

sequence presented in the Work Plan. Despite this, the PRG remains committed to completing these efforts in a timely manner, and will provide updates to NJDEP on a regular basis.

The results of this Reconnaissance Investigation can serve multiple purposes, including functioning as a precursor to subsequent sampling efforts, assisting in identifying other potentially responsible parties, and possibly further supporting a Screening Level Ecological Risk Assessment (SLERA). In addition, and as suggested earlier, results obtained from this program (together with historical information/data) will assist in developing a preliminary CSM for the HRSA. More specifically, this effort will attempt to preliminarily identify and understand local geomorphic features, historical dredging activities, sedimentation processes, contaminant distribution in sediments, and the system's ecology (including a list of potential ecological receptors/pathways).

A more detailed description of Tasks 1, 2, and 3 are presented and described herein, including, as appropriate, associated raw data.

2. Task 1 – Data Compilation and Review

This section generally summarizes the Data Compilation and Review process. The objective of this task was to gather pertinent existing information for the tidal portions of the Hackensack River extending from its confluence with Newark Bay to the Oradell Dam (also referred to as the Inventory Area; see Figure 2-1). This task includes, but is not limited to, gathering information associated with the following categories:

- geomorphology (i.e., information describing how the river banks and bed have changed over time, sedimentation processes, important river features and formations);
- hydrology (i.e., historical flows, and magnitude and frequency of flood events);
- historical bathymetric surveys;
- chemical data for constituents in sediment, water and biota;
- historical and/or on-going chemical sources for constituents in sediment, water and biota;
- chemical and solids fate and transport (i.e., data or studies describing how either chemicals or sediment are transported in the River);
- sediment geotechnical properties (e.g., grain-size);
- ecology; and
- pertinent remedial documents for the Former Diamond Shamrock Site; Standard Chlorine Chemical Company, Inc. Site; Former Koppers Seaboard Site; and Public Service Enterprise Group (PSEG) Former West End Manufactured Gas Plant Site.

Relevant reports and papers published by federal and state agencies [i.e., United States Environmental Protection Agency (USEPA), NJDEP, United States Army Corps of Engineers (USACE), National Oceanic and Atmospheric Administration (NOAA), and the United States Geological Survey (USGS)], universities, and others are being obtained and reviewed to develop an understanding of the River's environmental setting, flows, and sediment transport mechanisms. These documents will be used to ultimately develop a preliminary CSM for the HRSA.

2.1 Data Inventory/Search

A systematic approach was used to search for historical data and information from environmental investigations conducted in the Inventory Area. This included the following steps:

- Conducting a series of internet-based library and other database searches;
- Searching internet sites of regulatory agencies and other institutions (both governmental and non-governmental) that have been involved in the New York/New Jersey (NY/NJ) Harbor Estuary Program (HEP); and
- Contacting key regulatory agencies, universities, and other institutions that have conducted or are currently conducting, or are otherwise involved in, environmental studies or investigations in the Inventory Area.

2.2 Results

To date, the PRG has obtained approximately 260 documents relating to the Hackensack River Inventory Area. The table below further segregates these reports into particular areas of interest.

Type of Data	Number of Documents
Air Quality, Meteorology, Geology and Misc.	9
Bathymetry	2
Bioaccumulation	32
Biological Communities	48
Dredging	4
Habitat	38
Human Use	11
Hydrodynamics	24
Sediment	24
Sources	14
Toxicology	3
Water	51

Additional documents are being added to this inventory as they are identified. For example, the PRG is currently in the process of attempting to obtain documents related to the PSEG Former West End Manufactured Gas Plant Site in Jersey City through the Open Public Records Act (OPRA).

Once it is believed that readily available and pertinent documents have been obtained, the PRG will move forward in developing a preliminary CSM for the HRSA.

3. Task 2A – Geophysical Surveys

This section generally summarizes Task 2A – Geophysical Surveys, which included the implementation of both a bathymetric survey and a side-scan sonar survey. This work was conducted by Ocean Surveys, Inc. (OSI) (Old Saybrook, Connecticut) from March 18, 2005 through March 31, 2005. Data collected from these two geophysical surveys will be used in conjunction with sediment probing information (discussed in Section 4) to identify various geomorphic features of the HRSA.

The results of Task 2A are described below.

3.1 Bathymetric Survey

The objective of the bathymetric survey was to acquire data in such a manner as to provide an accurate representation of the depth and morphology of the HRSA relative to known horizontal and vertical datums. For the purposes of this project, vertical data were corrected to the North American Vertical Datum of 1988 (NAVD88), and horizontal coordinates have been referenced to the New Jersey State Plane Coordinate System, North American Datum of 1983 (NAD83).

The bathymetric survey was conducted using single-channel sonar along 150 transects distributed throughout the HRSA. The survey transects were oriented perpendicular to the River and spaced at approximately 100-foot (ft) intervals. More closely-spaced, shorter transects were also positioned to provide detailed representation of depths adjacent to shoreline structures and bridge crossings. All transects were located and positioned using RTK global positioning system (RTK/GPS). Bathymetric survey results are presented on Figure 3-1, and in Appendix A. In addition, the bathymetric Profile Report developed by OSI is included as Appendix B. (Please note that when viewing such profiles, the left side of the image represents the southern/western shoreline of the River.)

To aid in obtaining and interpreting the bathymetric data, OSI installed a tide gage during the mobilization process. Water surface elevation measurements were recorded at 6-minute intervals from March 18, 2005 through April 21, 2005, and are presented in Appendix C.

One notable Work Plan deviation occurred during the bathymetric survey. Specifically, the vertical datum was changed in the field from National Geodetic Vertical Datum 1929 (NGVD29) to NAVD88. This change was instituted since the field benchmarks were more easily set to the NAVD88 datum.

3.2 Side-Scan Sonar Survey

The side-scan sonar survey was conducted within the HRSA to characterize the surficial texture of the riverbed (which will assist in mapping the distribution of sediment types) and identify debris (either natural or man-made) that may be present at the riverbed surface. As with the bathymetric data, horizontal coordinates were referenced to the New Jersey State Plane Coordinate System (NAD83).

The side-scan sonar survey was performed along a series of longitudinal transects, oriented parallel to the River axis such that sufficient overlap between neighboring beam patterns provided near full-bottom coverage. The resultant side-scan sonar information was processed, analyzed, and displayed as a mosaic of the riverbed. Results of the side-scan sonar survey are presented in Appendix D.

Two notable deviations from the Work Plan occurred prior to commencement of the side-scan sonar survey. The Work Plan indicated that the side-scan sonar survey would be conducted along three longitudinal transects; however, during conversations with OSI prior to initiation of the work, it was decided that additional transects would be necessary to provide adequate spatial coverage of the riverbed. In addition, while 200% coverage was specified in the Work Plan, this was determined unnecessary given the geography of the HRSA, and the fact that 100% coverage would provide for a comprehensive representation of the riverbed surface.

4. Task 2B – Sediment Probing and Grab Sampling

This section generally summarizes Task 2B – Sediment Probing and Grab Sampling, as conducted by BBL from March 17, 2005 through April 14, 2005. Both activities were implemented to assess spatial and vertical variation in soft sediment thicknesses, and to help identify locations where fine materials (and therefore constituents) may be present. Each activity is described further below.

4.1 Sediment Probing

BBL obtained soft sediment thickness measurements along a total of 30 transects, each spaced approximately 500 ft apart, and oriented perpendicular to River flow. Along each transect, probing activities were conducted at approximately 50-foot intervals. RTK/GPS was used to locate both the probing transects and the individual probing locations.

As specified in the Work Plan, a 5/8-inch diameter probe rod was used to measure soft sediment thickness; however, a larger diameter probe rod (approximately 1-inch) was used in areas of deeper water and stronger current. The rod was pushed through the sediment until refusal using reasonable human force. The depth of refusal was interpreted as the interface between softer sediments and stiff clay or rock. Recorded field documentation included water depth, total sediment depth, general physical characteristics of the sediment based on the feel of the probe rod as it penetrated through the sediment layers (to the extent possible), and other field observations (e.g., debris encountered, boulders, etc.). Because sediment cores were not collected as part of this task (to visually observe the penetrated sediment), sediment types are to be considered "best estimates." Water depths less than 20 ft were obtained using a survey rod, while depths greater than 20 ft were obtained using a Raytheon Fathometer.

Appendix E contains a download of sediment probing data from the electronic field database. Sediment probing locations are presented on Figure 3-1.

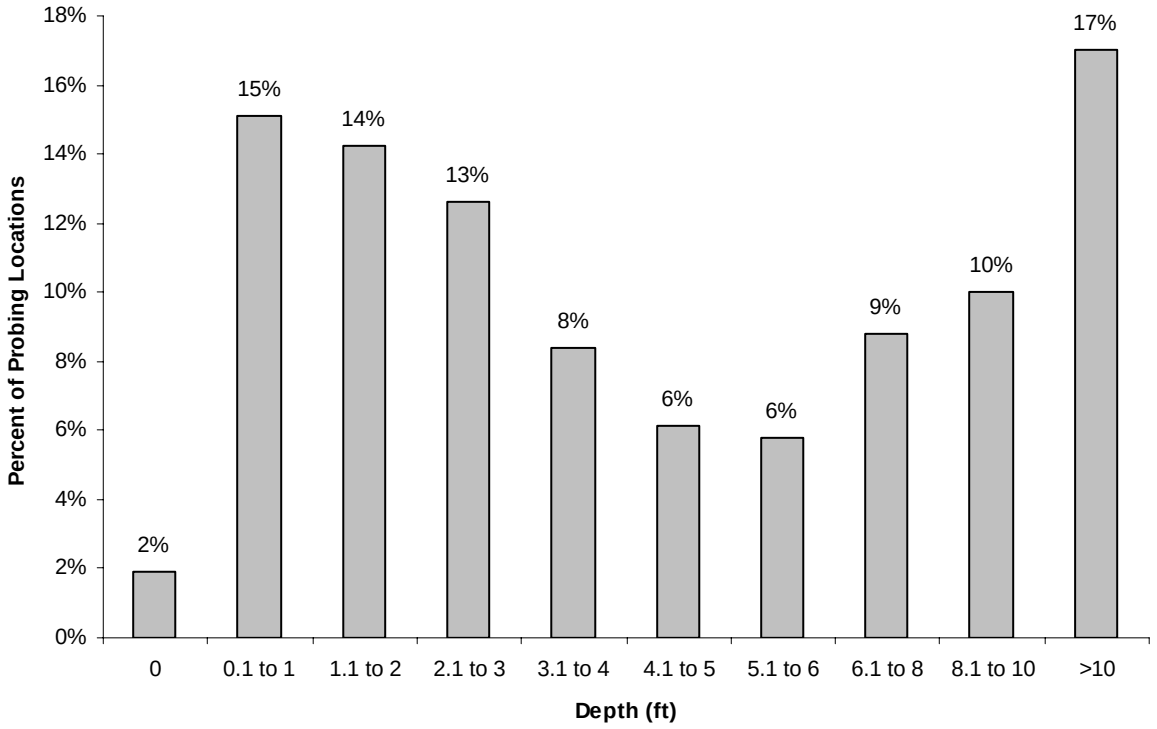
Sediment probing was attempted at a total of 636 locations within the HRSA. Of these 636 locations, 559 showed sediment thicknesses ranging from 0.1 to 32.4 feet. The remaining 77 locations recorded a sediment thickness of "0 ft", indicating either 1) probing could not be conducted at the target location due to physical obstacles, or 2) no sediment could be found at the target location.

Of these 77 locations, 65 could not be probed due to one or more of the following conditions:

- the target locations were on shore during high tide;
- a barge was located over the target location;
- the target location was behind a sheet pile wall;
- the target location was under a bridge [probing could not be conducted under bridges due to the lack of RTK/GPS coverage]; or
- a gas pipeline was located in the target probing area.

Aside from the physical obstacles described above, one additional Work Plan deviation occurred during sediment probing activities. Probing locations along Transect 28 were modified in the field due to the presence of the New Jersey Turnpike Bridge. The revised Transect 28 can be seen on Figure 3-1.

The following chart provides a detailed breakdown of soft sediment thicknesses (by depth range). (Please note that percentages exclude the 65 locations where probing could not be conducted.)



4.2 Sediment Grab Sampling

A total of 20 sediment grab samples were collected from the biologically active zone (i.e., depths of up to 6 inches) within the HRSA, and sent to Lancaster Laboratories (Lancaster, Pennsylvania) for grain-size and Total Organic Carbon (TOC) analyses. Fifteen samples were generally collected along sediment probing transects in an alternating left-of-river center, center-of-river, and right-of-river center pattern (Figure 3-1). Five additional samples were collected at systematically spaced locations along sediment probing transects. RTK/GPS was used to locate the 20 sediment grab sampling locations.

Two notable deviations from the Work Plan occurred during sediment grab sampling activities. The first deviation occurred during the collection of sample HRFRSED004A, located in the left-of-center position on Transect 7. This sample could not be collected due to the absence of sediment in the area. As a result, sample HRFRSED004A was abandoned and a replacement sample (HRFRSED021A) was collected in the right-of-center position along Transect 20.

The second deviation occurred during the processing of sample HRFRSED005A, located in the center-of-river position along Transect 9. While processing this sample for submittal to the laboratory, it was noted that there was not enough sediment to send for both grain size and TOC analysis. Several attempts were made to obtain enough sediment at this location; however, the necessary material was not present. As a result, this sample was only analyzed for grain size.

Appendix F contains a download of the sediment grab sampling field data from the electronic field database, while Appendix G contains photographs taken during grab sampling activities. Preliminary grain size and TOC results are discussed below.

4.2.1 Grain Size

Nineteen field samples and one duplicate were sent to Lancaster Laboratories for grain size analysis via method ASTM D-422. A summary of the grain size data is presented in Table 4-1.

4.2.2 Total Organic Carbon

Nineteen field samples and one duplicate were sent to Lancaster Laboratories for TOC analysis via the Lloyd Kahn method. A summary of the TOC data is presented in Table 4-2.

4.2.3 Data Packages

Appendix H contains the laboratory data packages for both grain size and TOC data, as provided by Lancaster Laboratories. In addition, Appendix I contains the validated data package for TOC data as provided by BBL.

Two notable deviations from the USEPA Lloyd Kahn method occurred during sample analysis for TOC. Precision and accuracy, and laboratory duplicate relative percent difference (RPD) values were not determined by the laboratory as described in the method. As such, all TOC data have been qualified as "estimated" and appended with a "J" qualifier (see Table 4-2).

5. Task 2C – Habitat/Shoreline Characterization

This section generally summarizes Task 2C – Habitat and Shoreline Characterization, as conducted by BBL from March 21, 2005 through March 24, 2005. The objectives of the habitat and shoreline characterization and assessment activities were to:

- understand the ecosystem that is potentially at risk within the HRSA, as well as the stressors – both physical and chemical – that may be affecting components of the ecosystem;
- identify environmentally sensitive habitats/natural resources that may occur in the HRSA and surrounding environs; and
- identify potential contaminant migration pathways to any environmentally sensitive habitats.

Characterization and assessment activities included visual observation, photography, and videography of the HRSA. Wildlife observations, shoreline conditions, habitat types, adjacent land uses, and other pertinent information were recorded. Habitat boundaries, wildlife observation locations, and locations of pertinent features (i.e., outfalls, sheens, mudflats, and structures) were recorded using differential global positioning system (DGPS) coordinates. Each component is discussed below.

This task was also used to initiate Task 3 (Source Identification) through observing and identifying potential sources (primarily outfalls) to the River.

5.1 Habitat Characterization

Various types of habitat for both terrestrial and aquatic animals were identified within the HRSA. These habitats include old pilings, decaying wooden bulkheads, rock piles, mudflats, and tidal marshes. The locations of habitats were recorded using DGPS coordinates, and each habitat was described and photographed. Figure 5-1 presents locations of significant habitats and corresponding photographs.

5.1.1 Intertidal Mudflats

Intertidal mudflats are of particular interest, as they provide substrate for benthic organisms and foraging habitat for terrestrial animals. Twelve mudflats were identified within the HRSA, ranging in both length and width. Figure 5-2 presents the observed mudflat locations, while select corresponding photographs are provided in Appendix J.

5.1.2 Outfalls/Tide Gates

Outfalls can serve as a means of constituent introduction into the system to the River. Preliminary reviews of public records identified seven permitted outfalls within the HRSA. Each of these outfalls was located, described and photographed during the low tide event. An additional nine outfalls were also located, described, and photographed during Reconnaissance activities. In addition to the 16 outfalls, four tide gates were identified within the HRSA. Figure 5-2 presents outfall and tide gate locations; corresponding photographs are provided in Appendix K.

As indicated previously, this information will be used as part of the Source Identification process (Task 3) in understanding current and/or historic discharges to the River.

5.1.3 Wildlife Observations

Wildlife observations were also recorded during this task. Observations included species identification (or lowest possible taxa), type of sighting (i.e., fly-over, perched, feeding), and estimated number of individuals when groups were observed. The habitat in which the wildlife species was observed was also recorded. Table 5-1 presents wildlife observations organized by habitat; a brief description of each habitat category is included.

5.2 Shoreline Characterization

Shoreline observations were made from a boat while navigating along the HRSA. Two shoreline events were performed (one during high tide and one during low tide) to evaluate features during different tidal stages. Types of shoreline stabilization, adjacent land use, and vegetation above the high tide line were characterized during the high tide assessment event. Observations of mudflats, habitat, outfalls, and other pertinent features

were also made, where possible. Mudflat locations and length, intertidal vegetation, depositional characteristics, and outfalls/discharge points were documented during the low tide assessment event. Video footage and still photographs of the shoreline were collected during each event. A DVD containing the video footage is included as Appendix L. A representative selection of photographs is presented in Figure 5-2, and Table 5-2 shows the composition of shoreline types within the HRSA.

No notable deviations from the Work Plan occurred during either habitat or shoreline characterization activities.

6. Task 3 – Source Identification

As indicated in Section 1, the Source Identification Task is on-going. Observable outfalls were identified and recorded as part of Task 2C. Also, information regarding NJDEP Known Contaminated Sites, NJPDES Discharges, NJDEP enforcement actions and groundwater discharges within the Inventory Area has been acquired from the NJDEP's website. In addition, the Federal Resource Conservation and Recovery Information System (RCRIS) and Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) databases have been accessed, and information is being compiled. Landfill locations within the Inventory Area have also been obtained from information compiled by the USACE.

This information is being entered into a database for mapping and further assessment. The PRG will continue to update NJDEP as this task progresses.

7. References

Blasland, Bouck & Lee, Inc. (BBL). 2004. Reconnaissance Phase Work Plan for the Hackensack River Study Area. November.

Tables

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TABLE 4-1

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SUMMARY OF GRAIN SIZE DATA

Sample Name	Date Collected	Time Collected	Lab Sample ID	SDG	Analyte	Result Value	Lab Units	Lab Qualifiers	MDL	Dilution Factor
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	19 mm	97.2	% passing		0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	4.75 mm	80.3	% passing		0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	3.35 mm	75.8	% passing		0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	2.36 mm	70.2	% passing		0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	1.18 mm	61.4	% passing		0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	0.6 mm	51.3	% passing		0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	0.3 mm	30.0	% passing		0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	0.15 mm	4.5	% passing		0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	0.075 mm	0.9	% passing	J	0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	4.75 mm	88.5	% passing		0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	3.35 mm	81.5	% passing		0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	2.36 mm	74.8	% passing		0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	1.18 mm	64.4	% passing		0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	0.6 mm	55.3	% passing		0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	0.3 mm	44.5	% passing		0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	0.15 mm	26.1	% passing		0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	0.075 mm	6.6	% passing		0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	19 mm	43.0	% passing		0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	4.75 mm	10.3	% passing		0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	3.35 mm	8.8	% passing		0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	2.36 mm	7.4	% passing		0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	1.18 mm	5.4	% passing		0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	0.6 mm	3.6	% passing		0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	0.3 mm	1.4	% passing		0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	0.15 mm	0.5	% passing	J	0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	0.075 mm	0.5	% passing	U	0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	4.75 mm	99.9	% passing		0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	3.35 mm	99.7	% passing		0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	2.36 mm	98.4	% passing		0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	1.18 mm	93.4	% passing		0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	0.6 mm	59.5	% passing		0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	0.3 mm	38.6	% passing		0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	0.15 mm	10.7	% passing		0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	0.075 mm	1.7	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	19 mm	88.3	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	4.75 mm	32.2	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	3.35 mm	24.5	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	2.36 mm	19.4	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	1.18 mm	14.9	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	0.6 mm	10.6	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	0.3 mm	3.3	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	0.15 mm	1.2	% passing		0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	0.075 mm	0.5	% passing	J	0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	4.75 mm	99.9	% passing		0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	3.35 mm	99.0	% passing		0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	2.36 mm	95.5	% passing		0.5	1

TABLE 4-1

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Sample Name	Date Collected	Time Collected	Lab Sample ID	SDG	Analyte	Result Value	Lab Units	Lab Qualifiers	MDL	Dilution Factor
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	1.18 mm	64.9	% passing		0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	0.6 mm	40.1	% passing		0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	0.3 mm	23.6	% passing		0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	0.15 mm	11.9	% passing		0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	0.075 mm	3.5	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	4.75 mm	90.0	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	3.35 mm	82.4	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	2.36 mm	76.4	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	1.18 mm	68.3	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	0.6 mm	56.5	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	0.3 mm	33.1	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	0.15 mm	9.3	% passing		0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	0.075 mm	2.4	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	4.75 mm	80.7	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	3.35 mm	70.6	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	2.36 mm	61.0	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	1.18 mm	46.2	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	0.6 mm	28.7	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	0.3 mm	13.2	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	0.15 mm	4.7	% passing		0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	0.075 mm	2.0	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	4.75 mm	93.2	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	3.35 mm	84.9	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	2.36 mm	73.5	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	1.18 mm	52.0	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	0.6 mm	32.2	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	0.3 mm	13.6	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	0.15 mm	2.9	% passing		0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	0.075 mm	0.5	% passing	U	0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	4.75 mm	99.5	% passing		0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	3.35 mm	98.0	% passing		0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	2.36 mm	92.9	% passing		0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	1.18 mm	67.7	% passing		0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	0.6 mm	50.0	% passing		0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	0.3 mm	37.9	% passing		0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	0.15 mm	21.0	% passing		0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	0.075 mm	5.1	% passing		0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	75 mm	100.0	% passing		0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	37.5 mm	100.0	% passing		0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	19 mm	100.0	% passing		0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	4.75 mm	77.9	% passing		0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	3.35 mm	70.5	% passing		0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	2.36 mm	62.9	% passing		0.5	1

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Sample Name	Date Collected	Time Collected	Lab Sample ID	SDG	Analyte	Result Value	Lab Units	Lab Qualifiers	MDL	Dilution Factor
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	1.18 mm	49.3	% passing		0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	0.6 mm	29.0	% passing		0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	0.3 mm	10.3	% passing		0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	0.15 mm	4.2	% passing		0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	0.075 mm	0.5	% passing	J	0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	19 mm	97.2	% passing		0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	4.75 mm	88.6	% passing		0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	3.35 mm	79.3	% passing		0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	2.36 mm	72.3	% passing		0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	1.18 mm	49.8	% passing		0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	0.6 mm	27.5	% passing		0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	0.3 mm	10.0	% passing		0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	0.15 mm	2.1	% passing		0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	0.075 mm	0.5	% passing	U	0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	19 mm	58.1	% passing		0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	4.75 mm	13.7	% passing		0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	3.35 mm	10.5	% passing		0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	2.36 mm	8.5	% passing		0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	1.18 mm	5.5	% passing		0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	0.6 mm	2.8	% passing		0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	0.3 mm	1.3	% passing		0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	0.15 mm	0.5	% passing	J	0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	0.075 mm	0.5	% passing	U	0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	4.75 mm	95.2	% passing		0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	3.35 mm	93.7	% passing		0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	2.36 mm	92.1	% passing		0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	1.18 mm	82.7	% passing		0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	0.6 mm	31.4	% passing		0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	0.3 mm	6.5	% passing		0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	0.15 mm	0.5	% passing	U	0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	0.075 mm	0.5	% passing	U	0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	4.75 mm	99.9	% passing		0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	3.35 mm	99.4	% passing		0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	2.36 mm	94.0	% passing		0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	1.18 mm	65.1	% passing		0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	0.6 mm	42.4	% passing		0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	0.3 mm	27.9	% passing		0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	0.15 mm	9.5	% passing		0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	0.075 mm	0.9	% passing	J	0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	4.75 mm	99.8	% passing		0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	3.35 mm	99.2	% passing		0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	2.36 mm	97.0	% passing		0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	1.18 mm	72.6	% passing		0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	0.6 mm	54.4	% passing		0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	0.3 mm	41.2	% passing		0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	0.15 mm	26.2	% passing		0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	0.075 mm	12.3	% passing		0.5	1

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Sample Name	Date Collected	Time Collected	Lab Sample ID	SDG	Analyte	Result Value	Lab Units	Lab Qualifiers	MDL	Dilution Factor
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	4.75 mm	99.8	% passing		0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	3.35 mm	98.7	% passing		0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	2.36 mm	95.7	% passing		0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	1.18 mm	68.2	% passing		0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	0.6 mm	48.5	% passing		0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	0.3 mm	29.3	% passing		0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	0.15 mm	13.7	% passing		0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	0.075 mm	4.8	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	4.75 mm	83.9	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	3.35 mm	76.9	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	2.36 mm	65.7	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	1.18 mm	47.8	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	0.6 mm	32.5	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	0.3 mm	17.0	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	0.15 mm	4.0	% passing		0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	0.075 mm	1.5	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	75 mm	100.0	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	37.5 mm	100.0	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	19 mm	100.0	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	4.75 mm	99.8	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	3.35 mm	98.0	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	2.36 mm	91.9	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	1.18 mm	62.5	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	0.6 mm	43.0	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	0.3 mm	30.9	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	0.15 mm	20.5	% passing		0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	0.075 mm	11.2	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	75 mm	100.0	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	37.5 mm	100.0	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	19 mm	100.0	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	4.75 mm	99.6	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	3.35 mm	98.3	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	2.36 mm	95.2	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	1.18 mm	67.2	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	0.6 mm	42.9	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	0.3 mm	23.6	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	0.15 mm	9.4	% passing		0.5	1
HRFRSEDDUP2-1	4/13/2005	14:39	SW4504566	HRN01	0.075 mm	3.0	% passing		0.5	1

Notes:
% passing = percent passing
mm= millimeters
MDL = Method Detection Limit
SDG = Sample Delivery Group
J = The associated numerical value is an estimated value only.
U = Not Detected

TABLE 4-2

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SUMMARY OF TOTAL ORGANIC CARBON DATA

Sample Name	Date Collected	Time Collected	Lab Sample ID	SDG	Analyte	Result value	Lab Qualifiers	Validation Qualifiers	Lab Units	MDL	Dilution Factor
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	Percent Moisture	27.6			%	0.5	1
HRFRSED001A-01	4/13/2005	12:39	SW4504553	HRN01	TOC	6,100		J	mg/kg	680	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	Percent Moisture	36.8			%	0.5	1
HRFRSED002A-01	4/13/2005	12:57	SW4504554	HRN01	TOC	16,000		J	mg/kg	1,700	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	Percent Moisture	17.6			%	0.5	1
HRFRSED003A-01	4/13/2005	13:27	SW4504557	HRN01	TOC	15,000		J	mg/kg	250	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	Percent Moisture	49.7			%	0.5	1
HRFRSED006A-01	4/13/2005	15:27	SW4504563	HRN01	TOC	33,000		J	mg/kg	2,600	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	Percent Moisture	24.8			%	0.5	1
HRFRSED007A-01	4/13/2005	15:05	SW4504561	HRN01	TOC	75,000		J	mg/kg	930	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	Percent Moisture	48.9			%	0.5	1
HRFRSED008A-01	4/13/2005	14:39	SW4504560	HRN01	TOC	18,000		J	mg/kg	2,100	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	Percent Moisture	36.3			%	0.5	1
HRFRSED009A-01	4/13/2005	14:22	SW4504559	HRN01	TOC	12,000		J	mg/kg	1,200	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	Percent Moisture	38.4			%	0.5	1
HRFRSED010A-01	4/13/2005	10:34	SW4504550	HRN01	TOC	15,000		J	mg/kg	1,200	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	Percent Moisture	37.7			%	0.5	1
HRFRSED011A-01	4/13/2005	13:54	SW4504558	HRN01	TOC	2,300		J	mg/kg	270	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	Percent Moisture	46			%	0.5	1
HRFRSED012A-01	4/13/2005	8:30	SW4504547	HRN01	TOC	22,000		J	mg/kg	2,300	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	Percent Moisture	23.4			%	0.5	1
HRFRSED013A-01	4/14/2005	8:08	SW4504590	HRN02	TOC	14,000		J	mg/kg	240	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	Percent Moisture	31.9			%	0.5	1
HRFRSED014A-01	4/14/2005	7:41	SW4504568	HRN01	TOC	4,100		J	mg/kg	1,000	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	Percent Moisture	16.1			%	0.5	1
HRFRSED015A-01	4/14/2005	7:17	SW4504567	HRN01	TOC	5,500		J	mg/kg	110	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	Percent Moisture	27.5			%	0.5	1
HRFRSED016A-01	4/13/2005	15:18	SW4504562	HRN01	TOC	13,000		J	mg/kg	890	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	Percent Moisture	27.8			%	0.5	1
HRFRSED017A-01	4/13/2005	11:25	SW4504552	HRN01	TOC	6,300		J	mg/kg	600	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	Percent Moisture	53.8			%	0.5	1
HRFRSED018A-01	4/13/2005	10:57	SW4504551	HRN01	TOC	28,000		J	mg/kg	2,600	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	Percent Moisture	54.4			%	0.5	1
HRFRSED019A-01	4/13/2005	9:33	SW4504549	HRN01	TOC	28,000		J	mg/kg	2,500	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	Percent Moisture	57.2			%	0.5	1
HRFRSED020A-01	4/13/2005	9:10	SW4504548	HRN01	TOC	44,000		J	mg/kg	2,700	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	Percent Moisture	53.2			%	0.5	1
HRFRSED021A-01	4/14/2005	8:38	SW4504591	HRN02	TOC	45,000		J	mg/kg	5,500	1
HRFRSEDDUP1-1	4/13/2005	14:22	SW4504565	HRN01	Percent Moisture	36.2			%	0.5	1
HRFRSEDDUP1-1	4/13/2005	14:22	SW4504565	HRN01	TOC	15,000		J	mg/kg	2,100	1

Notes:
mg/kg = milligrams per kilogram
% = percent
J = The associated numerical value is an estimated value only.

TABLE 5-1

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

WILDLIFE OBSERVATIONS

	OW	PM	SM	MF	OP	LF
Mammals						
Ondatra zibethica (Muskrat)		o	t			
Procyon lotor (Raccoon)		t	t			
Rattus norvegicus (Norway Rat)		t	t			
Birds						
Agelaius phoeniceus (Red-winged Blackbird)		r	r			r
Anas platyrhynchos (Mallard)	r	h	h	h		
Anas rubripes (American Black Duck)			h	h		
Anas strepera (Gadwall)	r					
Ardea herodias (Great Blue Heron)	f	h	h			
Branta canadensis (Canada Goose)	r	r	h	r		
Bucephala albeola (Bufflehead)	h					
Buteo jamaicensis (Red-tailed Hawk)		f	f			r
Buteo lineatus (Red-shouldered Hawk)						r
Charadrius vociferous (Killdeer)				h		
Circus cyaneus (northern harrier)		h				
Clangula hyemalis (Oldsquaw)	h					
Columba livia (Rock Dove)					r	
Corcus brachyrynochos (Common Crow)						r
Falco sparverius (American Kestrel)	f					
Fulica americana (American Coot)			h			
Gavia stellata (Red-throated Loon)	h					
Larus argentatus (Herring Gull)	r	r	r	r	r	r
Larus delawarensis (Ring-billed Gull)	r	r	r	r	r	
Larus marinus (Great Black-backed Gull)	r	f	r	r	r	r
Mergus merganser (Common Merganser)	h					
Nycticorax nycticorax (Black-crowned Night-Heron)		r	r			
Pandion haliaetus (Osprey)	f					
Phalacrocora auritus (Double-crested Cormorant) h		f	f	r	r	
Sturnus vulgaris (Starling)	f	r	f		r	
Turdus migratorius (Robin)						r

Notes:
o = observed
t = tracks
r = resting
f = flying
h = feeding

TABLE 5-1

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

WILDLIFE OBSERVATIONS

Habitat Classifications

OW= Open Water
Open water habitat is defined as the water area with in the confines of the River. The River serves as a major feeding area for a number of species and resting area for others.

PM=*Phragmites* -dominated Marsh
Phragmites australis marsh is the areas along the river that are dominate by common reed (*P. australis*). The dense growth of the phragmites marsh has been well documented in its decrease of wildlife use by a number of species.

SM=Salt Marsh
Salt marsh habitat is tidal marsh that is dominated by species salt marsh cordgrass (*Spartina alterniflora*), big cordgrass (*Spartina cynosuroides*), saltmeadow cordgrass (*Spartina patens*), and saltgrass (*Distichlis spicata*) with eastern false-willow (*Bacharis halimifolia*) and big-leaf sumpweed (*Iva frutescens*). The narrow tidal creeks though the marsh were included as a component of the habitat. Salt marsh is documented as the most productive habitat along the coast. Many times, *S. alterniflora* and *P. australis* dominated the same marsh in different areas, *S. alterniflora's* tolerance of tidal inundation frequently results in a *S. alterniflora* fringe along a marsh where the upper marsh is dominated by *P. australis* .

MF=Mudflats
Mudflat areas were exposed during the low tide event, and generally extended from the grass or bulkhead lower limit to the open water. A number of species were observed using mudflats as resting areas. The area will be heavily used as foraging habitat during the spring and fall migrations.

OP=Old Pilings and Structures in or along waters edge
The old pilings and deteriorating bulkheads serve as resting/perching areas for birds and also create submerged habitats for numerous species of fish. Bridges spanning the River were also included in this category, as the superstructure present similar features for perching birds and the abutments create structure below the waters surface.

LF=Landfills
Several landfills are located along the banks of the HRSA. Large trees growing atop the landfills, in conjunction with the raised elevation of the landfill itself, offer good vantage points for birds of prey. Several species of hawk were observed perched among the trees and circling above the landfill.

TABLE 5-2

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SHORELINE TYPES

Shoreline Composition/ Cover Type	**Western Shoreline (feet)**	**Eastern Shoreline (feet)**	**Total – HRSA (feet)**
Vegetated – *P. australis* marsh	490	3,113	3,603
Vegetated – *P. australis* marsh with *S. alterniflora* fringe	596	5,269	5,865
Vegetated - Other	204	2,077	2,281
Riprap	6,516	4,344	10,860
Bulkhead	6,612	3,279	9,891
Total Linear Footage	14,418	18,082	32,500

Figures

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engineers, scientists, economists

NOTES:

1. HORIZONTAL DATUM: NEW JERSEY STATE PLANE COORDINATE SYSTEM, NAD83.
2. AERIAL PHOTO DATED JULY 2002 (INTRASEARCH, ENGLEWOOD, CO).

LEGEND:

SITE BOUNDARIES

0 1,200 2,400 Feet

5/19/05 SYR-85 MTK EAB
Hackensack (09987.004)
W:\GIS\Hackensack\ReconInvestigation\mxd\StudyAreaMap.mxd

PENINSULA RESTORATION GROUP

RECONNAISSANCE INVESTIGATION REPORT FOR THE HACKENSACK RIVER STUDY AREA

HACKENSACK RIVER STUDY AREA MAP

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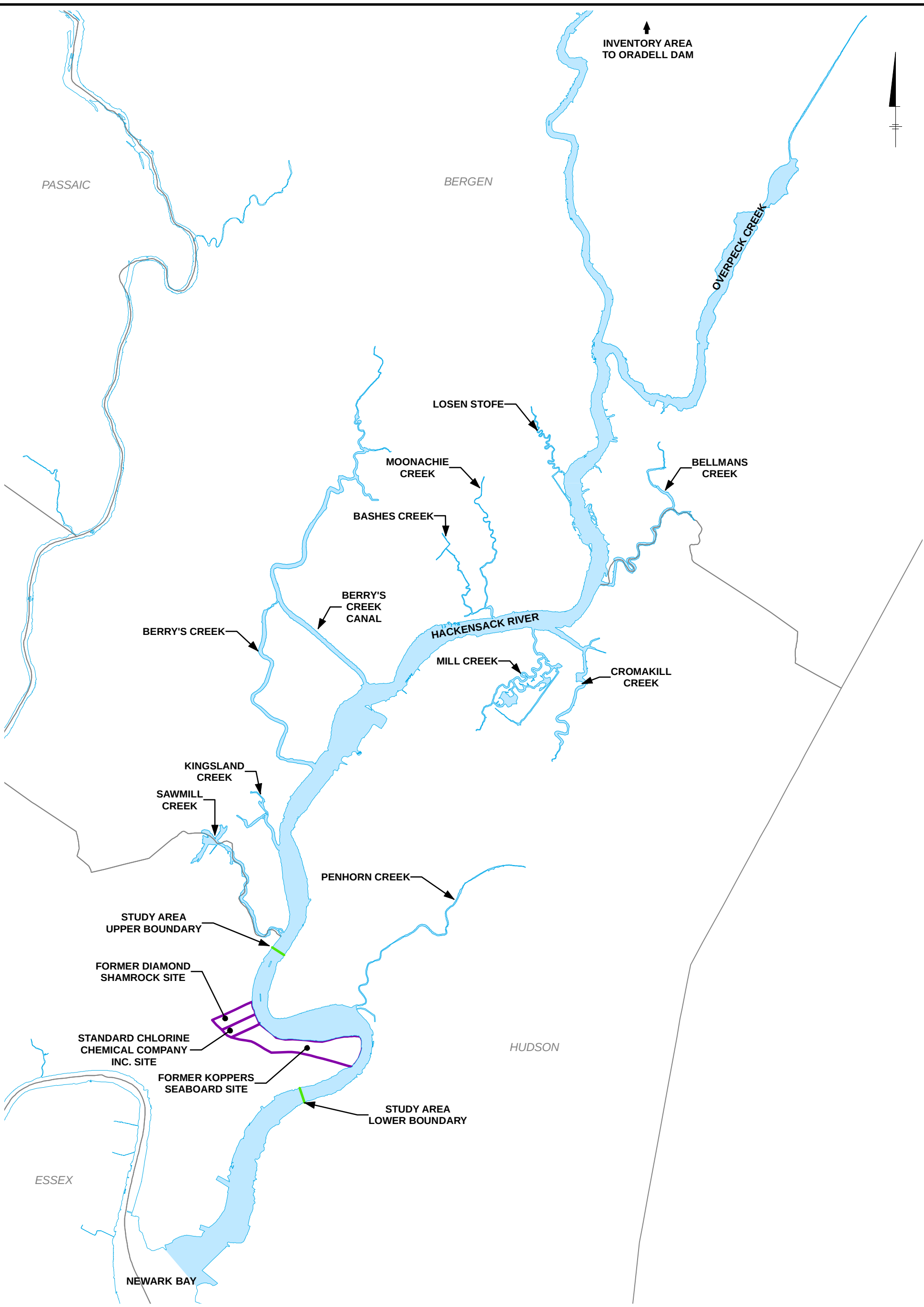
FIGURE 1-1



NOTES:

1. HORIZONTAL DATUM: NEW JERSEY STATE PLANE COORDINATE SYSTEM, NAD83.
2. SHORLINE DIGITIZED FROM AERIAL PHOTO DATED JULY 2002 (INTRASEARCH, ENGLEWOOD, CO).

LEGEND:

- SITE BOUNDARIES
- INVENTORY AREA

0 4,800 9,600 Feet

5/19/05 SYR-85 MTK EAB
Hackensack (09987.004)
W:\GIS\Hackensack\ReconInvestigation\mxd\InventoryArea.mxd

PENINSULA RESTORATION GROUP

RECONNAISSANCE INVESTIGATION REPORT FOR THE HACKENSACK RIVER STUDY AREA

HACKENSACK RIVER INVENTORY AREA

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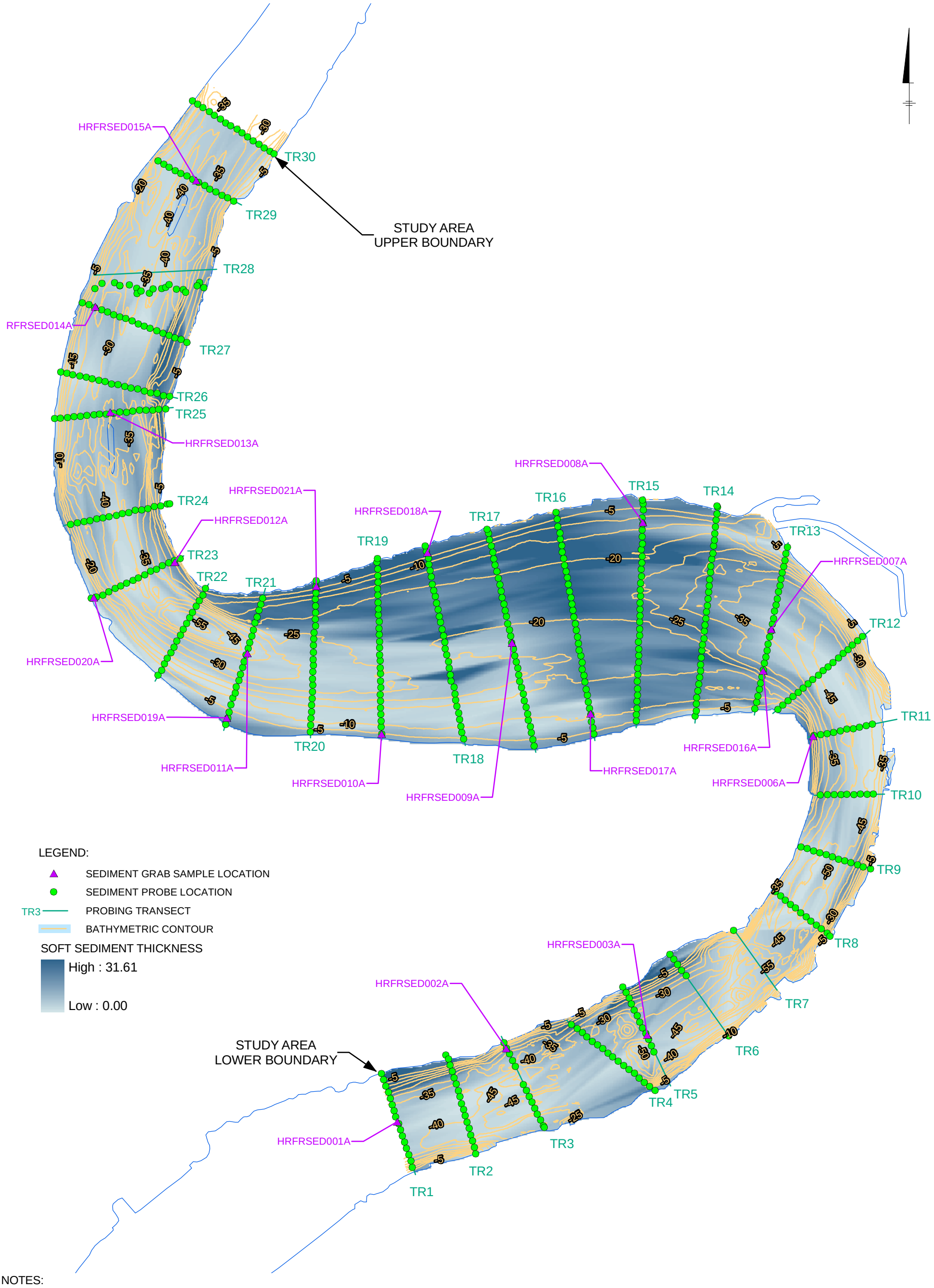
FIGURE 2-1



NOTES:

1. HORIZONTAL DATUM: NEW JERSEY STATE PLANE COORDINATE SYSTEM, NAD83.
2. BATHYMETRIC INFORMATION PROVIDED BY OSI, INC.
3. ALL PROBING, SEDIMENT GRAB SAMPLE, AND TRANSECT LOCATIONS WERE RECORDED USING RTK/GPS. HOWEVER, ACTUAL LOCATIONS (RELATIVE TO THAT SHOWN ON THIS FIGURE) MAY VARY SLIGHTLY.
4. BATHYMETRIC AND SEDIMENT THICKNESS CONTOURS ARE APPROXIMATE, AS INTERPOLATED USING ESRI'S ARCGIS VERSION 9.0 SOFTWARE WITH ESRI'S 3D ANALYST EXTENSION.
5. SHORLINE DIGITIZED FROM AERIAL PHOTO DATED JULY 2002 (INTRASEARCH, ENGLEWOOD, CO).

5/18/05 SYR-85 MTK EAB
Hackensack (09987.004)
W:\GIS\Hackensack\ReconInvestigation\mxd\bathymetricandSedThick.mxd

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT FOR THE HACKENSACK RIVER STUDY AREA

BATHYMETRIC AND SOFT SEDIMENT THICKNESS CONTOURS

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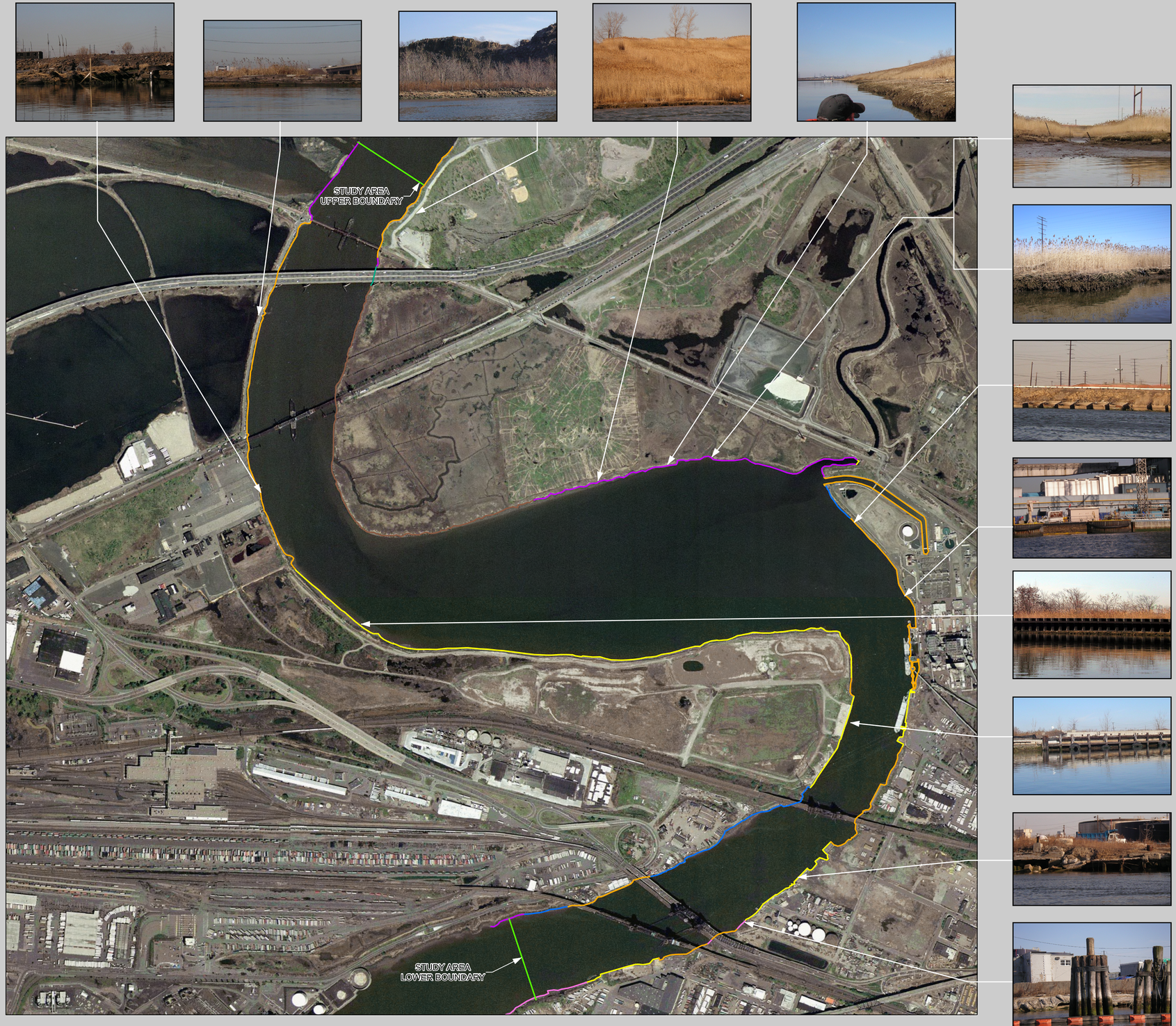
FIGURE 3-1



5/19/05 SYR-85 MTK EAB
Hackensack (09987.004)
W:\GIS\Hackensack\ReconInvestigation\mxd\HabitatLocations.mxd

LEGEND:

HABITAT CLASSIFICATION

- VEGETATED - P. AUSTRALIS DOMINATED
- VEGETATED - P. AUSTRALIS DOMINATED AND RIPRAP
- VEGETATED - P. AUSTRALIS DOMINATED WITH S. ALTERNIFLORA FRINGE
- VEGETATED - OTHER
- VEGETATED - OTHER AND RIPRAP
- RIPRAP
- BULKHEAD

NOTES:

1. HORIZONTAL DATUM: NEW JERSEY STATE PLANE COORDINATE SYSTEM, NAD83.
2. AERIAL PHOTO DATED JULY 2002 (INTRASEARCH, ENGLEWOOD, CO).
3. HABITAT CLASSIFICATIONS AND SHORELINE TYPES WERE RECORDED USING DGPS. HOWEVER, ACTUAL LOCATIONS (RELATIVE TO THAT SHOWN ON THIS FIGURE) MAY VARY SLIGHTLY.

0 500 1,000 Feet

PENINSULA RESTORATION GROUP

RECONNAISSANCE INVESTIGATION REPORT FOR THE HACKENSACK RIVER STUDY AREA

HABITAT LOCATIONS AND SELECT PHOTOGRAPHS

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

FIGURE 5-1

LEGEND:

- TIDE GATE
- OUTFALL
- MUDFLAT

0 700 1,400 Feet

NOTES:

1. HORIZONTAL DATUM: NEW JERSEY STATE PLANE COORDINATE SYSTEM, NAD83.
2. AERIAL PHOTO DATED JULY 2002 (INTRASEARCH, ENGLEWOOD, CO).
3. MUDFLAT AND OUTFALL LOCATIONS WERE RECORDED USING DGPS. HOWEVER, ACTUAL LOCATIONS (RELATIVE TO THAT SHOWN ON THIS FIGURE) MAY VARY SLIGHTLY.
4. THE RECONNAISSANCE PROGRAM ONLY IDENTIFIED THE LENGTH OF A GIVEN MUDFLAT ALONG THE SHORELINE; ITS EXTENSION INTO THE RIVER WAS NOT MEASURED/DEFINED.

5/19/05 SYR-85 MTK EAB
Hackensack (09987.004)
W:\GIS\Hackensack\ReconInvestigation\mxd\MudflatLocations.mxd

PENINSULA RESTORATION GROUP

RECONNAISSANCE INVESTIGATION REPORT FOR THE HACKENSACK RIVER STUDY AREA

MUDFLAT, OUTFALL, AND TIDE GATE LOCATIONS

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FIGURE 5-2

Appendices

BLASLAND, BOUCK & LEE, INC.
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Appendix A

Bathymetric Data
(As provided by OSI, Inc.)

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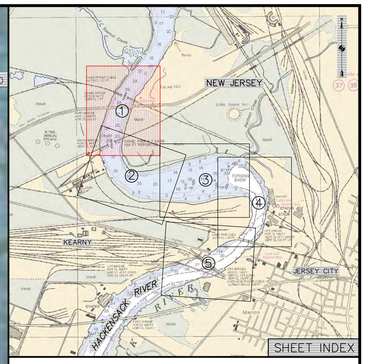

LEGEND:

- CONTROL POINT
- MAJOR CONTOUR
- MINOR CONTOUR

CONTROL POINTS			
DESIGNATION	NEW JERSEY STATE PLANE NAD 83, FEET		ELEVATION NAVD 88 FEET
	EASTING	NORTHING	
BL_HAK-01	603,928.96	698,923.23	7.28
BL_HAK-04	603,951.17	698,774.43	4.13
BL_HAK-05	603,809.56	699,274.37	7.41

NOTES:

1. GRID SYSTEM IS IN FEET AND IS THE NEW JERSEY STATE PLANE COORDINATE SYSTEM, NAD83.
2. ELEVATIONS ARE IN FEET AND ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88) BASED ON THE BENCHMARK "BL_HAK-01" WHICH HAS AN ELEVATION OF 7.28' NAVD 88 AS PROVIDED BY BLASLAND, BOUCK & LEE, INC.
3. CONTOUR INTERVAL IS ONE FOOT. CONTOURS WERE COMPUTER GENERATED USING "QUICKSURF" VERSION 5.1 (SCHREIBER INSTRUMENTS, INC.) OPERATING WITHIN AUTODESK "AUTOCAD" VERSION 14 AND MANUALLY ADJUSTED TO ELIMINATE THE IRREGULARITIES INTRODUCED BY COMPUTER CONTOURING SOFTWARE.
3. SHORELINE AND ONSHORE FEATURES ARE APPROXIMATE AND WERE TAKEN FROM DIGITAL ORTHOPHOTO QUADRANGLES FLOWN IN 2002 AND OBTAINED FROM THE NEW JERSEY GEOGRAPHIC INFORMATION NETWORK (NJGIN).
4. THE INFORMATION PRESENTED ON THIS CHART REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY OCEAN SURVEYS, INC. ON 19-30 MARCH 2005 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO OSI.

SCALE: 1"=100'

100 0 100 200 300

CHECK GRAPHIC SCALE BEFORE USING

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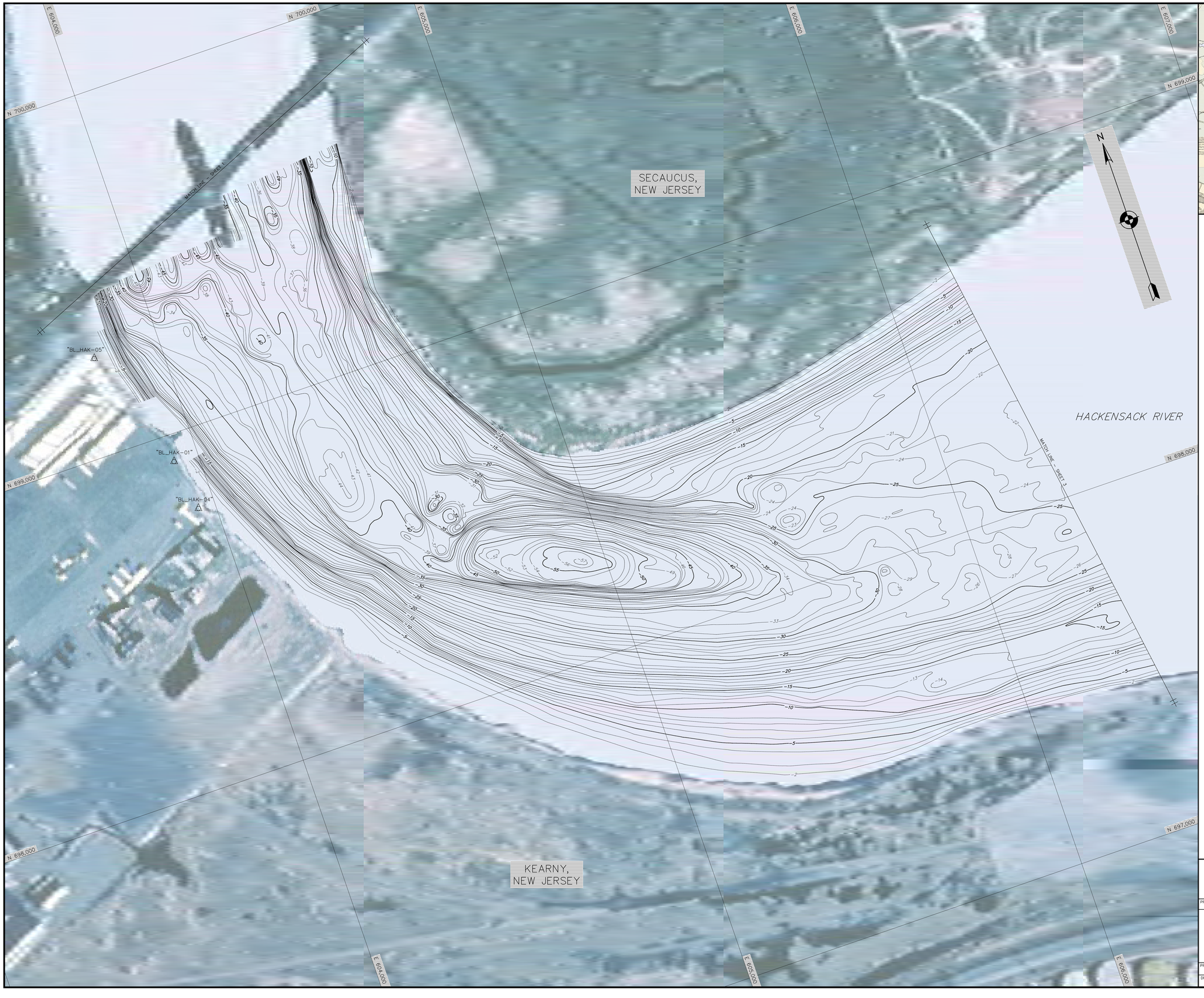
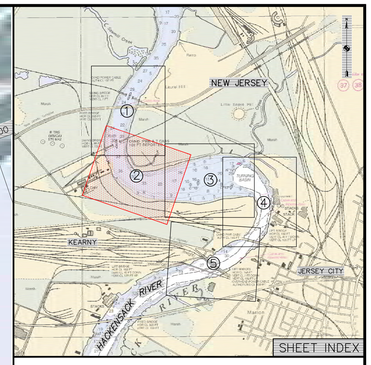
www.oceansurveys.com

PREPARED FOR: BLASLAND, BOUCK & LEE, INC.

ELEVATION CONTOURS
RECONNAISSANCE PHASE SURVEY
HACKENSACK RIVER STUDY AREA
NEW JERSEY

PROJECT MANAGER:	SURVEY DATE:	SCALE:
R.M. WALLACE	19-30 MARCH 2005	1" = 100'
DRAFTED BY:	DATE:	DRAWING NUMBER:
A.M. RIZZO	26 APRIL 2005	05ES002.1





LEGEND:

- △ CONTROL POINT
- —40— MAJOR CONTOUR
- —32— MINOR CONTOUR

CONTROL POINTS			
DESIGNATION	NEW JERSEY STATE PLANE NAD 83, FEET		ELEVATION NAVD 88 FEET
	EASTING	NORTHING	
BL_HAK-01	603,928.96	698,923.23	7.28
BL_HAK-04	603,951.17	698,774.43	4.13
BL_HAK-05	603,809.56	699,274.37	7.41

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SCALE: 1"=100'

100 0 100 200 300

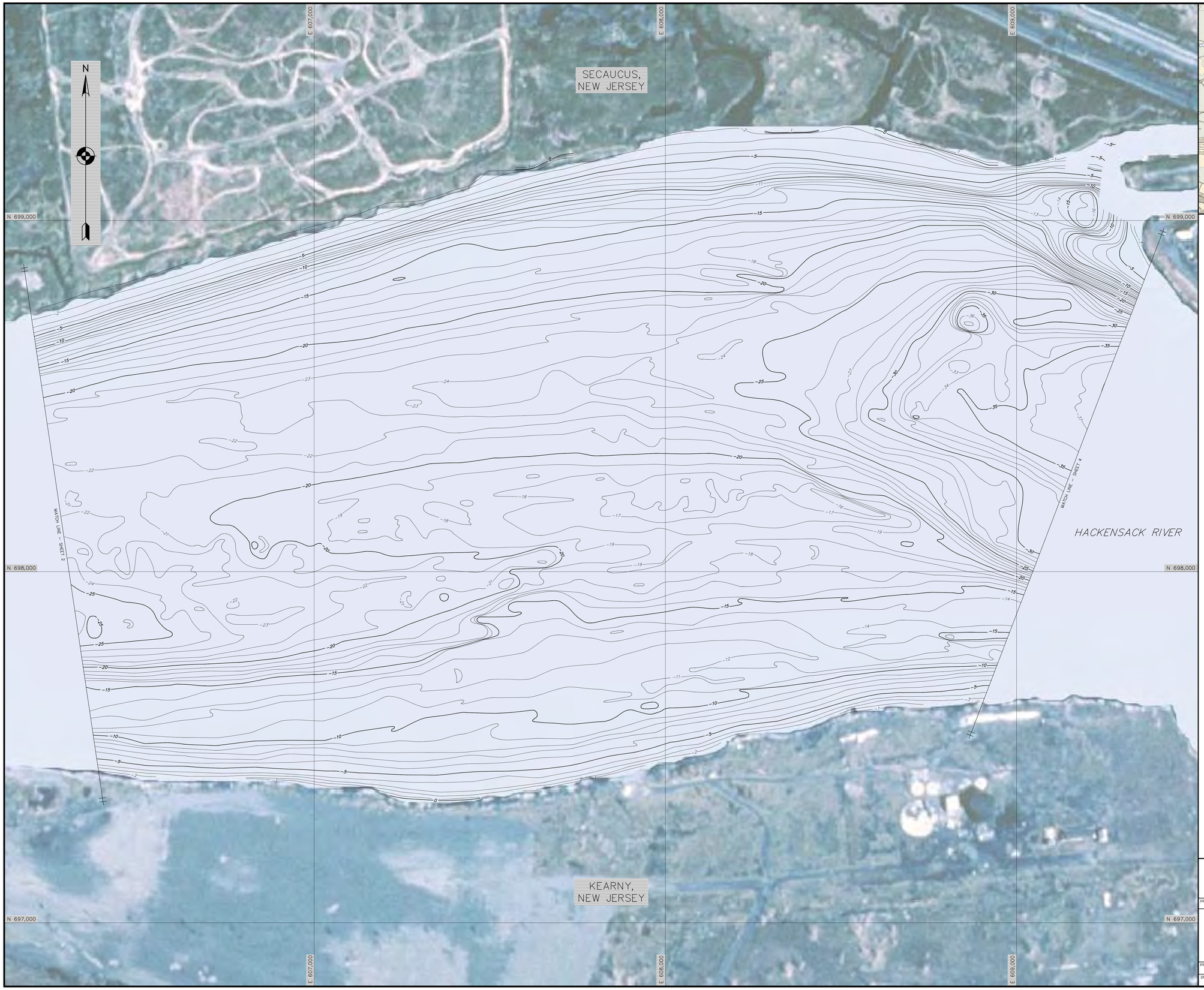
CHECK GRAPHIC SCALE BEFORE USING

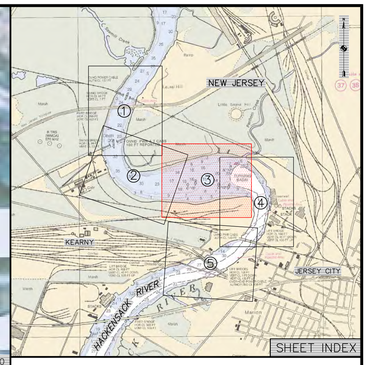
OCEAN SURVEYS, INC.
OLD SAYBROOK, CONNECTICUT
(860) 388-4631
www.oceansurveys.com

PREPARED FOR: BLASLAND, BOUCK & LEE, INC.

ELEVATION CONTOURS
RECONNAISSANCE PHASE SURVEY
HACKENSACK RIVER STUDY AREA
NEW JERSEY

PROJECT MANAGER:	SURVEY DATE:	SCALE:
R.M. WALLACE	19-30 MARCH 2005	1" = 100'
DRAFTED BY:	DATE:	DRAWING NUMBER:
A.M. RIZZO	26 APRIL 2005	05ES002.1





LEGEND:

- CONTROL POINT
- MAJOR CONTOUR
- MINOR CONTOUR

CONTROL POINTS			
DESIGNATION	NEW JERSEY STATE PLANE NAD 83, FEET		ELEVATION NAVD 88 FEET
	EASTING	NORTHING	
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100 0 100 200 300

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PREPARED FOR: BLASLAND, BOUCK & LEE, INC.

ELEVATION CONTOURS
RECONNAISSANCE PHASE SURVEY
HACKENSACK RIVER STUDY AREA
NEW JERSEY

PROJECT MANAGER:	SURVEY DATE:	SCALE:
R.M. WALLACE	19-30 MARCH 2005	1" = 100'
DRAFTED BY:	DATE:	DRAWING NUMBER:
A.M. RIZZO	26 APRIL 2005	05ESS002.1

N. 699,000
N. 698,000
N. 697,000
N. 696,000
E. 611,000
E. 610,000
E. 609,000

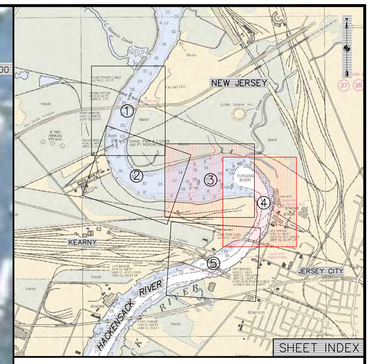
JERSEY CITY,
NEW JERSEY

KEARNY,
NEW JERSEY

HACKENSACK RIVER

MATCH LINE - SHEET 3

MATCH LINE - SHEET 5



LEGEND:

- CONTROL POINT
- MAJOR CONTOUR
- MINOR CONTOUR

CONTROL POINTS			
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100 0 100 200 300

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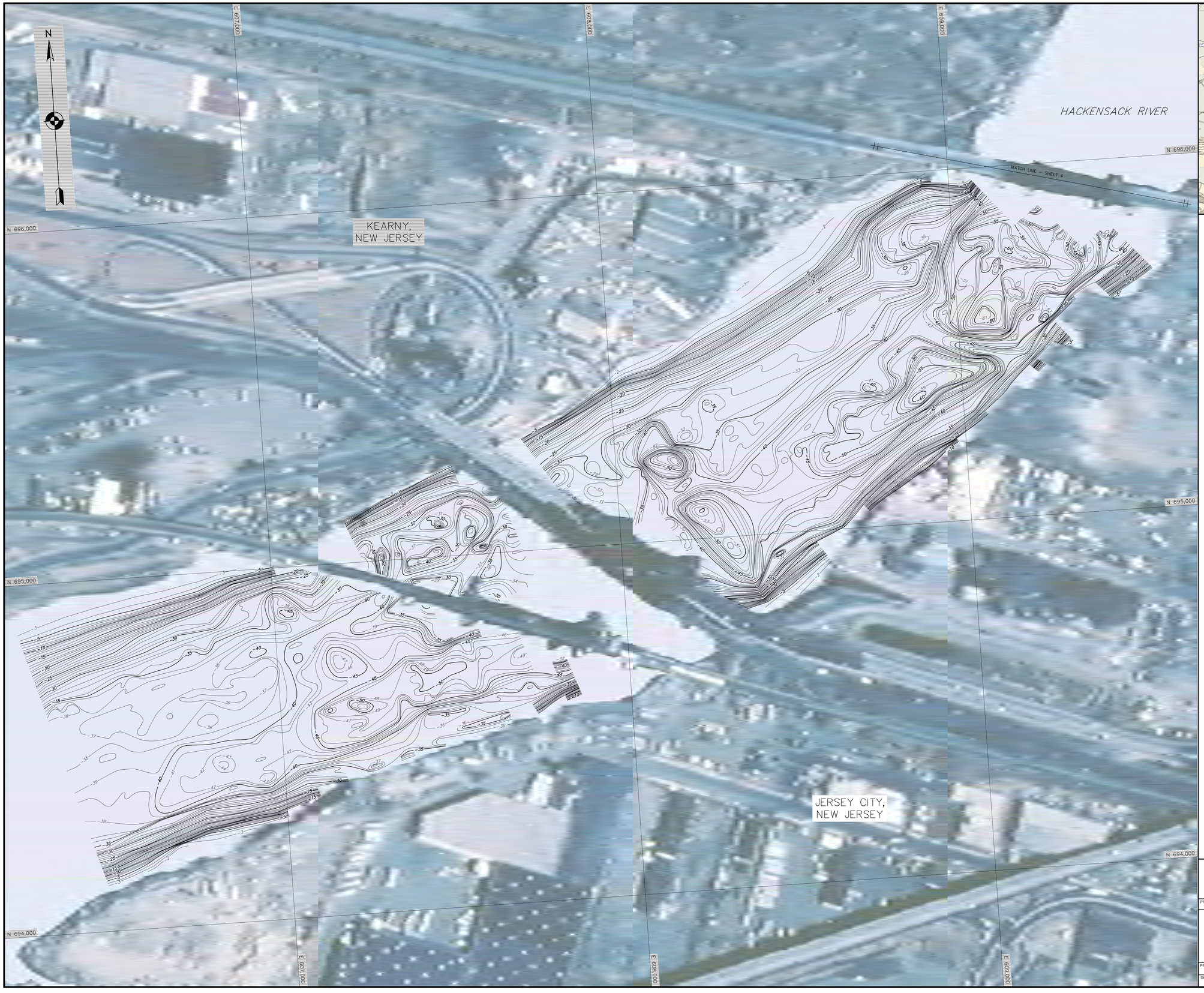
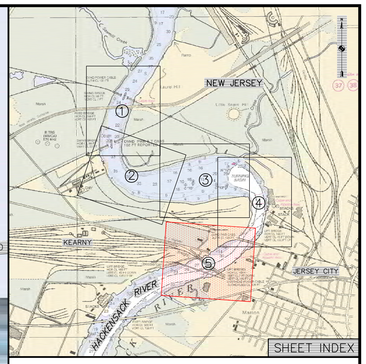
PREPARED FOR: BLASLAND, BOUCK & LEE, INC.

ELEVATION CONTOURS
RECONNAISSANCE PHASE SURVEY
HACKENSACK RIVER STUDY AREA
NEW JERSEY

PROJECT MANAGER: R.M. WALLACE	SURVEY DATE: 19-30 MARCH 2005	SCALE: 1" = 100'
DRAFTED BY: A.M. RIZZO	DATE: 26 APRIL 2005	DRAWING NUMBER: 05ESO02.1





LEGEND:

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100 0 100 200 300

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ELEVATION CONTOURS
RECONNAISSANCE PHASE SURVEY
HACKENSACK RIVER STUDY AREA
NEW JERSEY

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DRAFTED BY: A.M. RIZZO	DATE: 26 APRIL 2005	DRAWING NUMBER: 05ES002.1

Appendix B

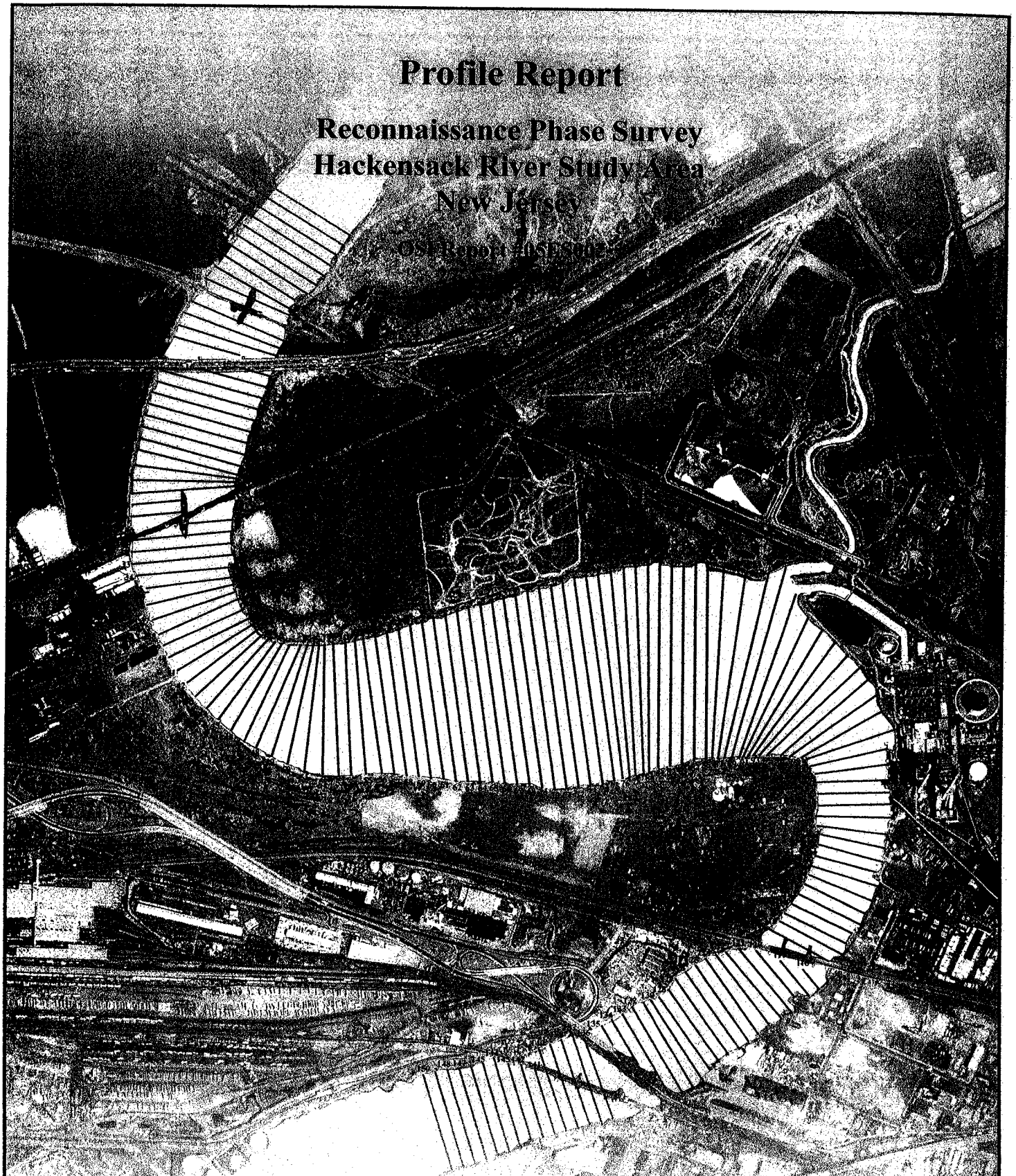
Bathymetric Profile Report (As Provided by OSI, Inc.)

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Profile Report

Reconnaissance Phase Survey
Hackensack River Study Area
New Jersey

OSI Report #05P302



BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Prepared For:
Blasland, Bouck & Lee, Inc.
6723 Towpath Rd.
Syracuse, NY 13214

OSI

Prepared By:
Ocean Surveys, Inc
91 Sheffield Street
Old Saybrook, CT 06475

PROFILE 1

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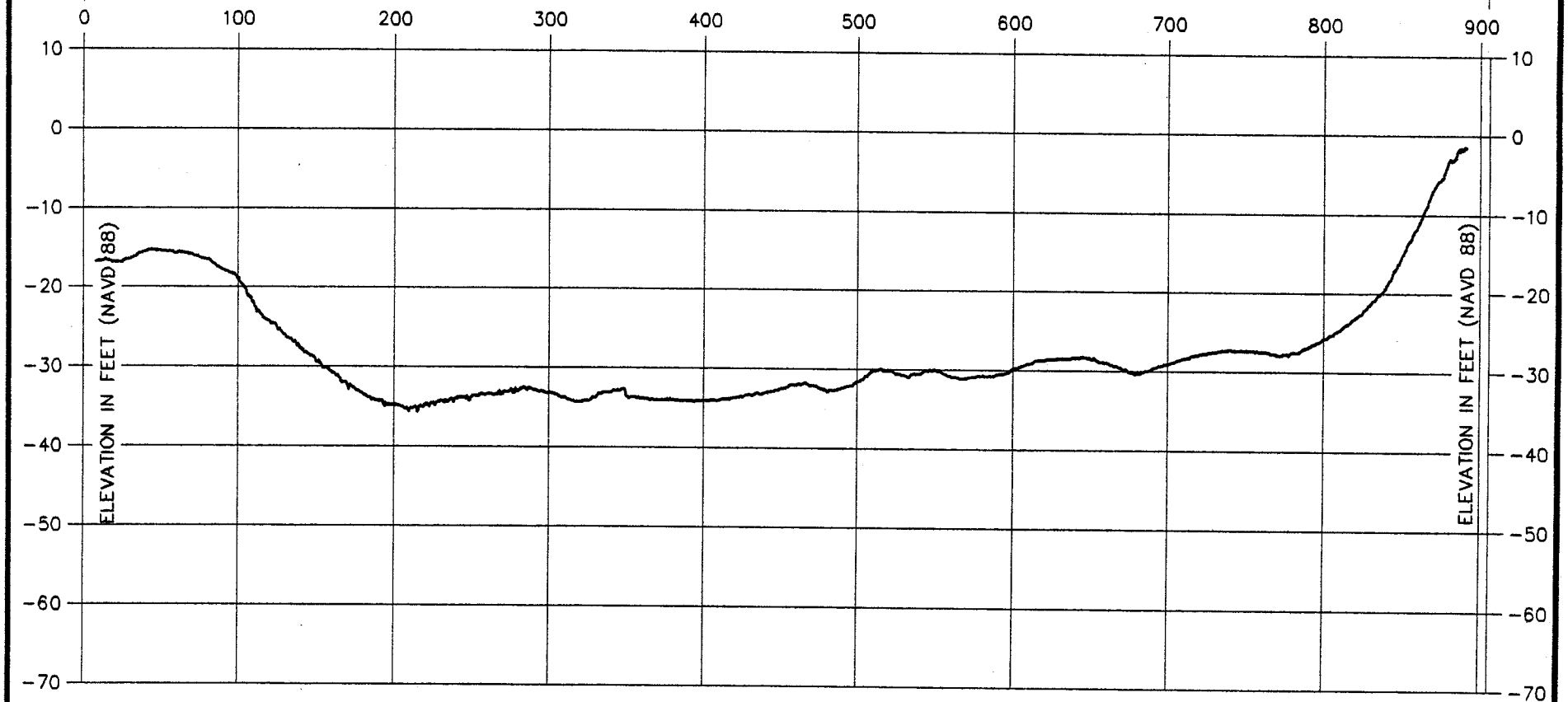
E 604860.8

N 702004.5
E 605629.7



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OSI

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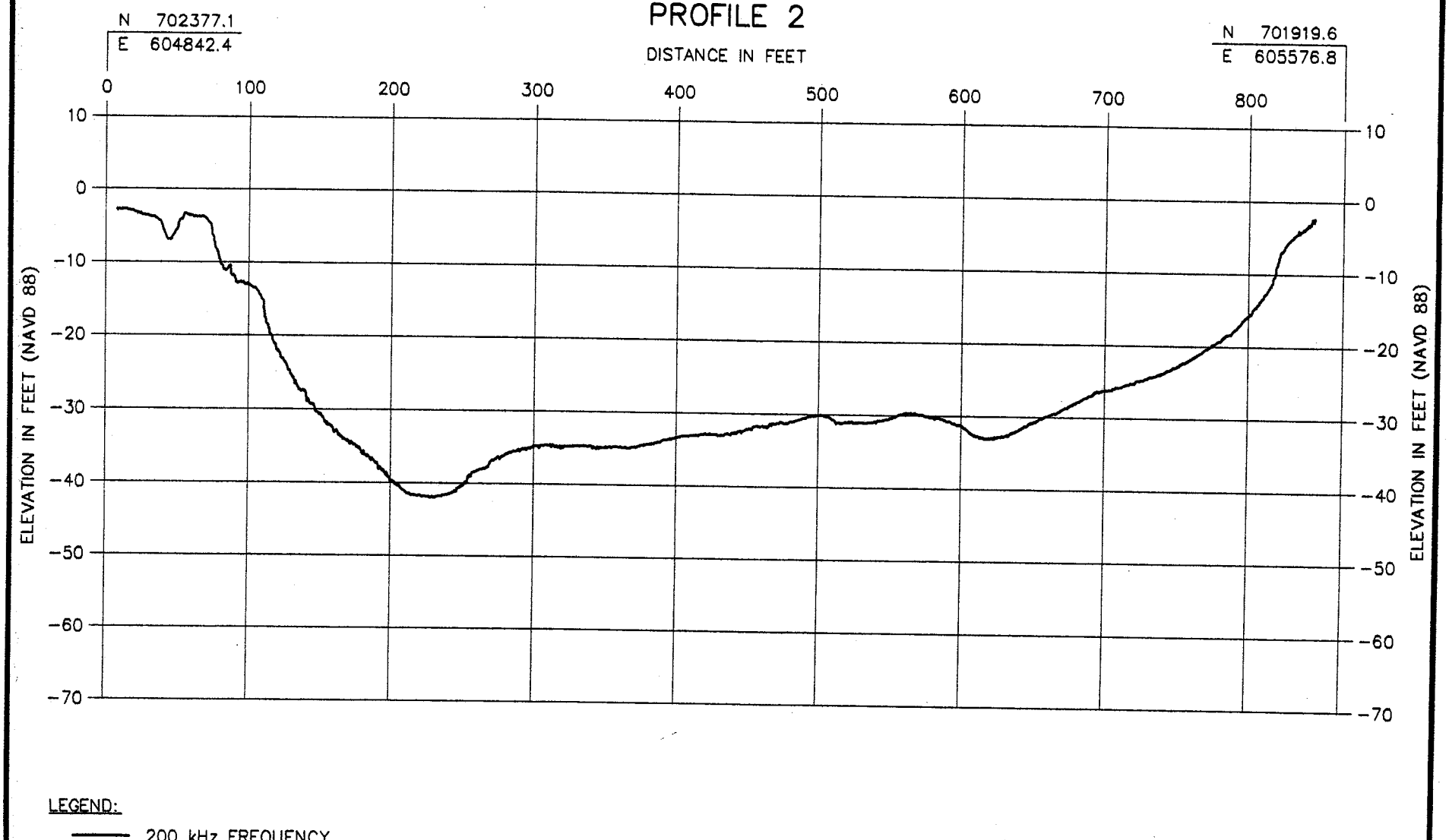

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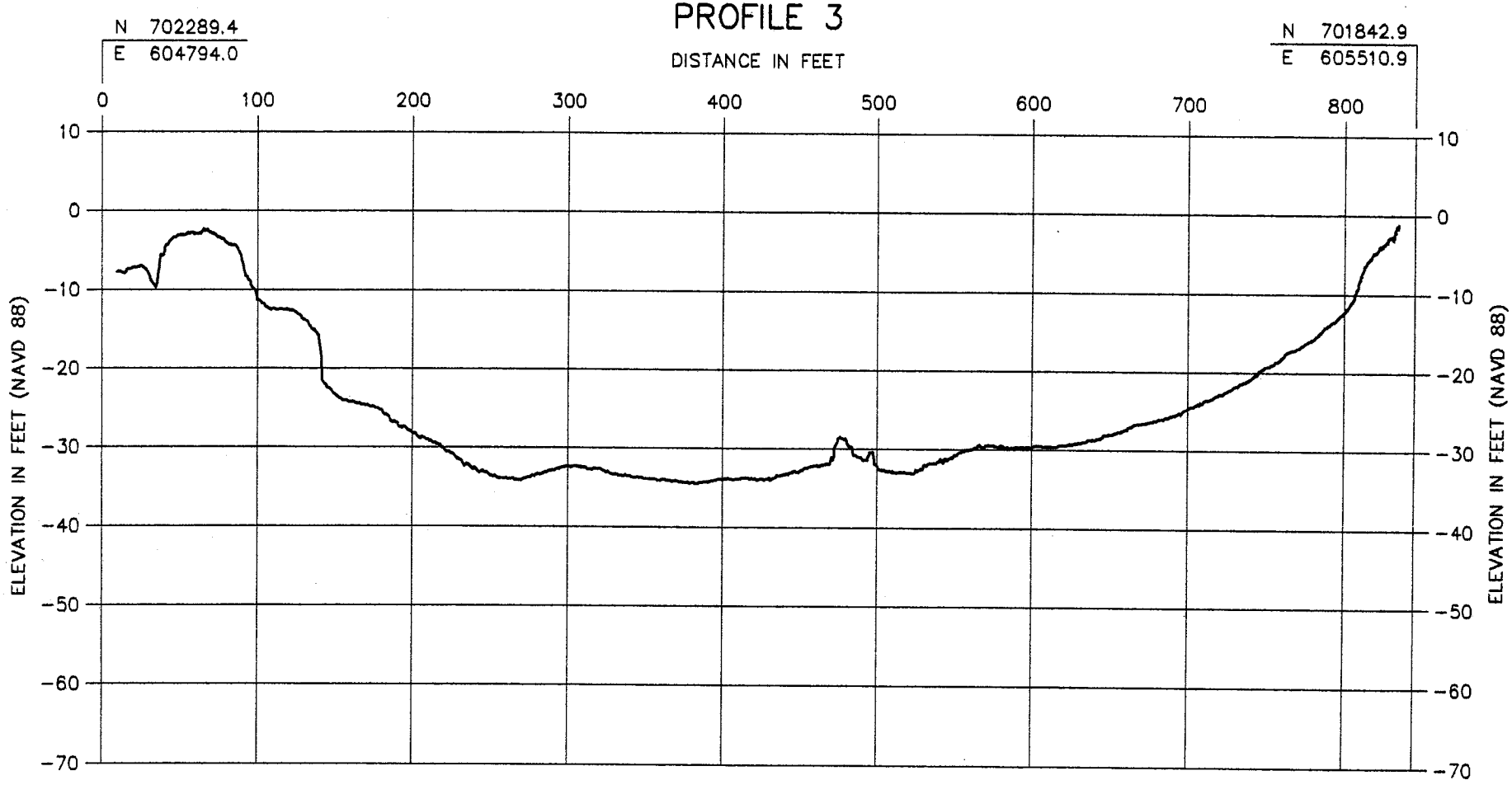

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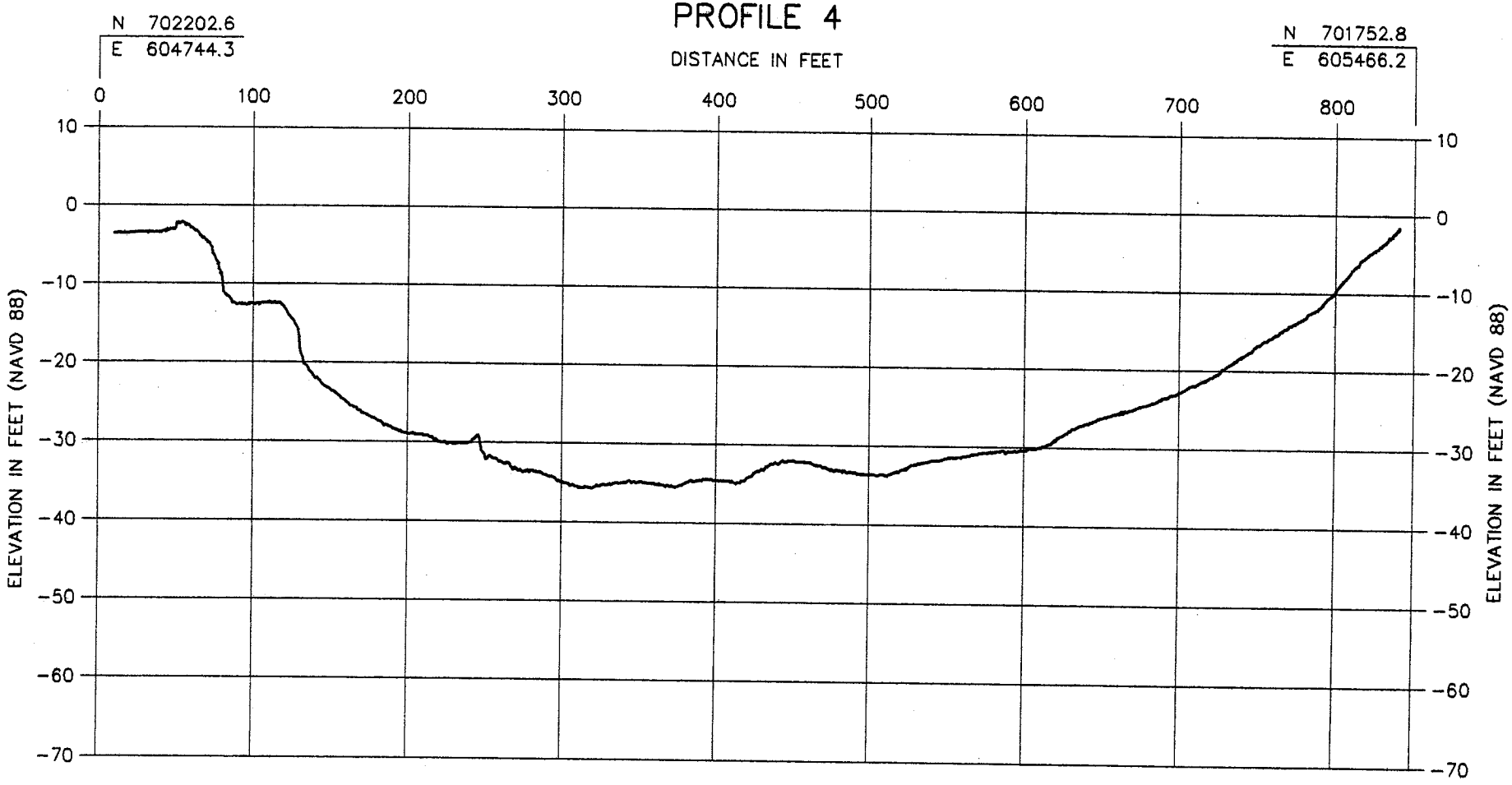

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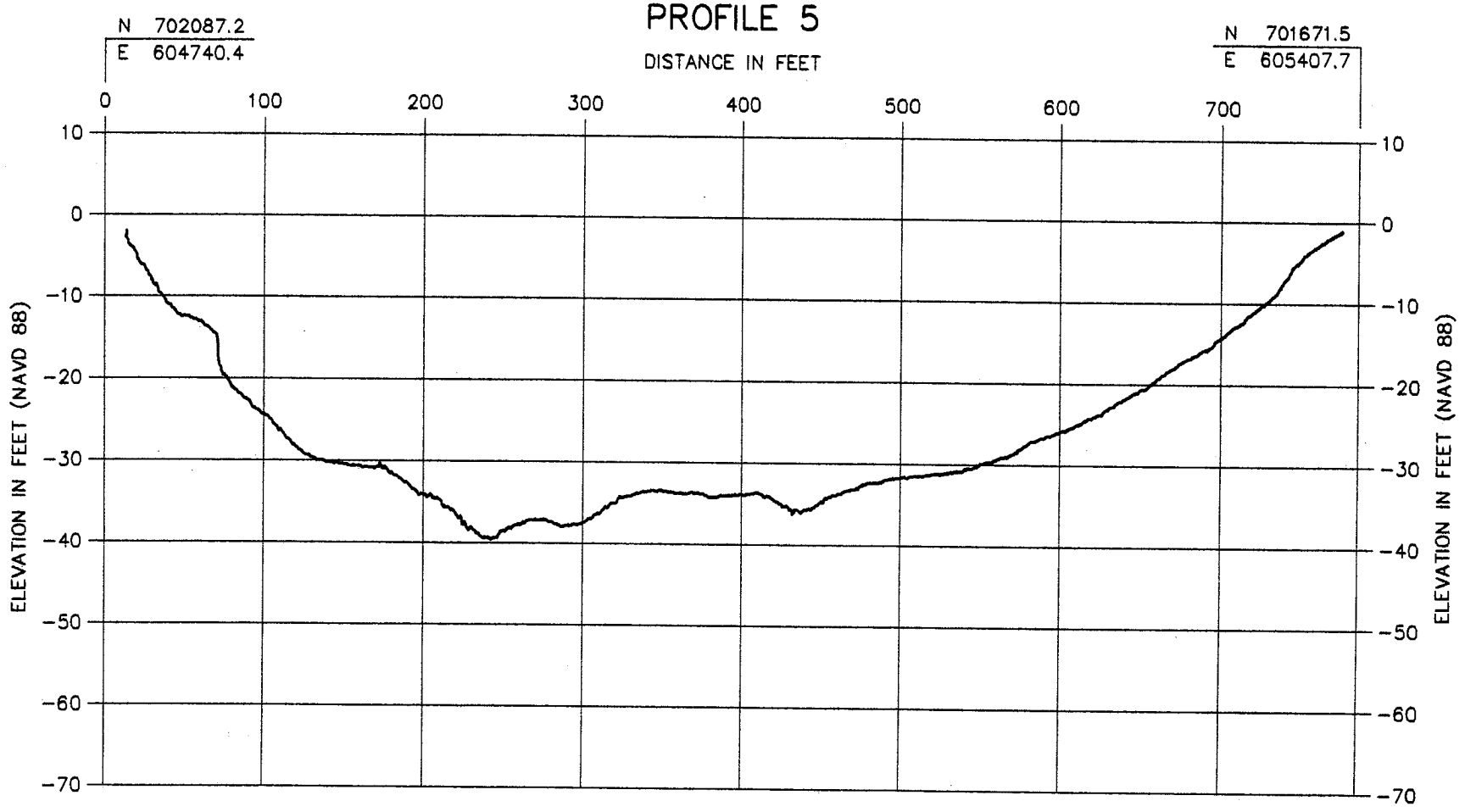

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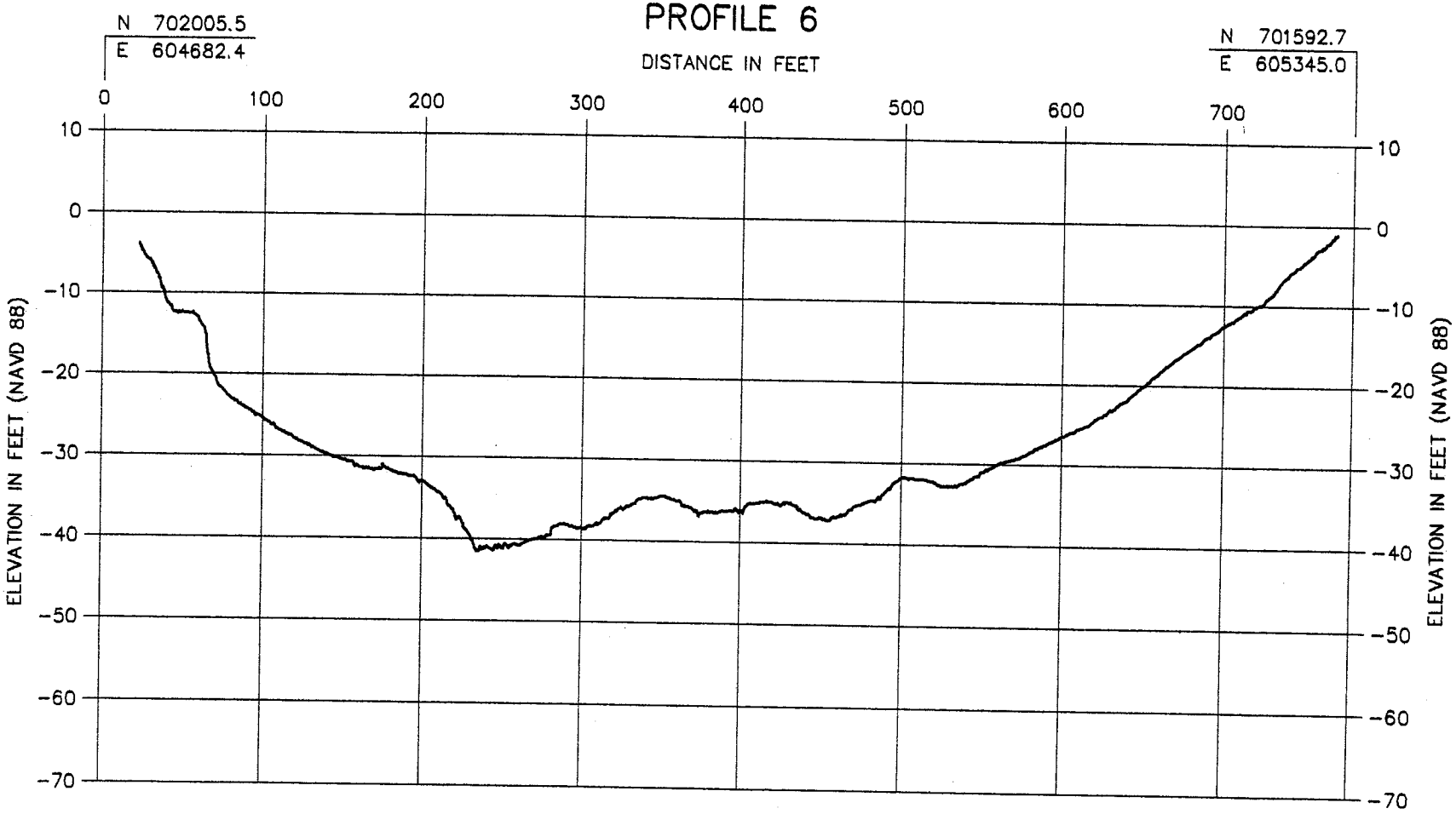

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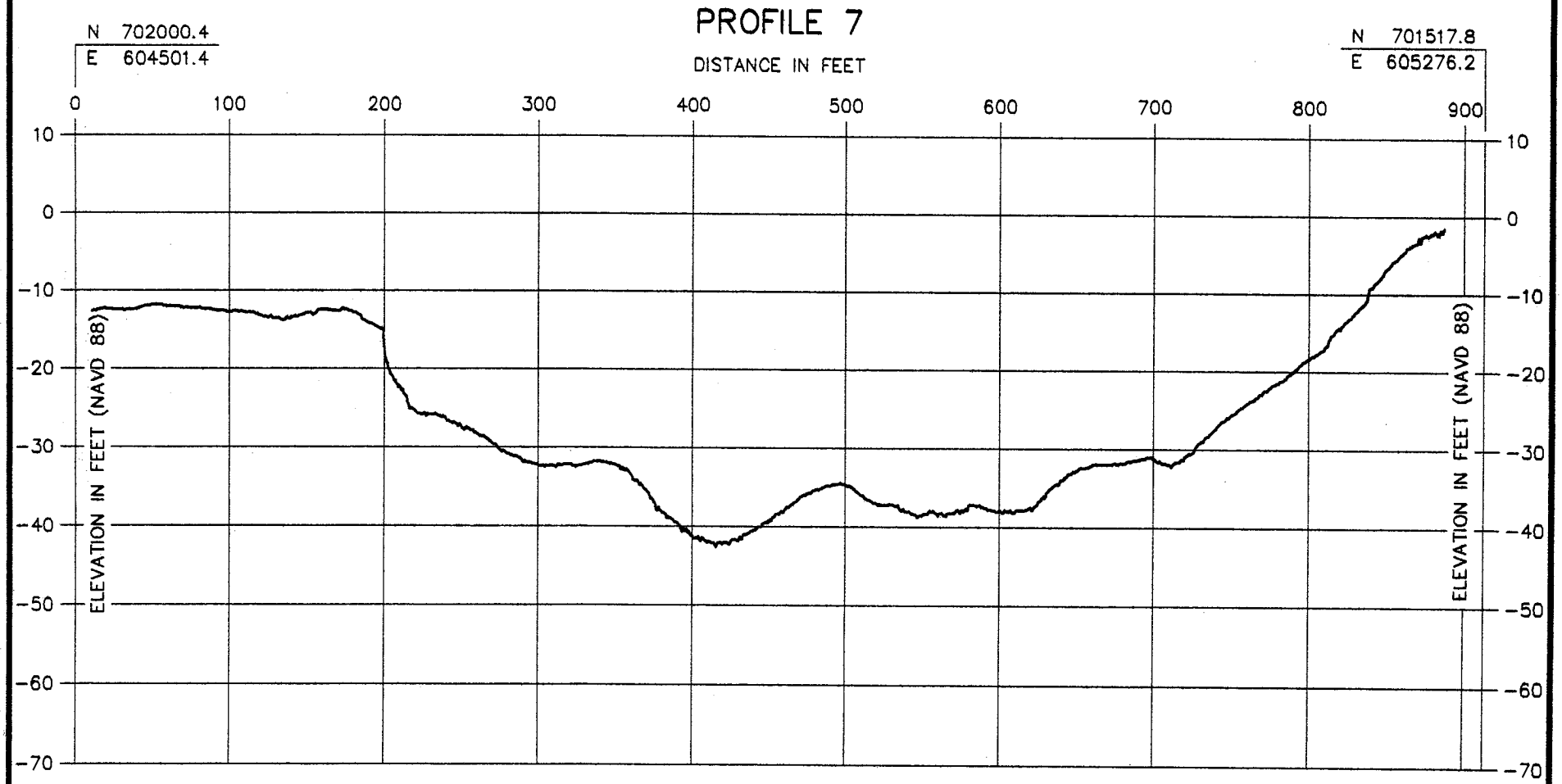

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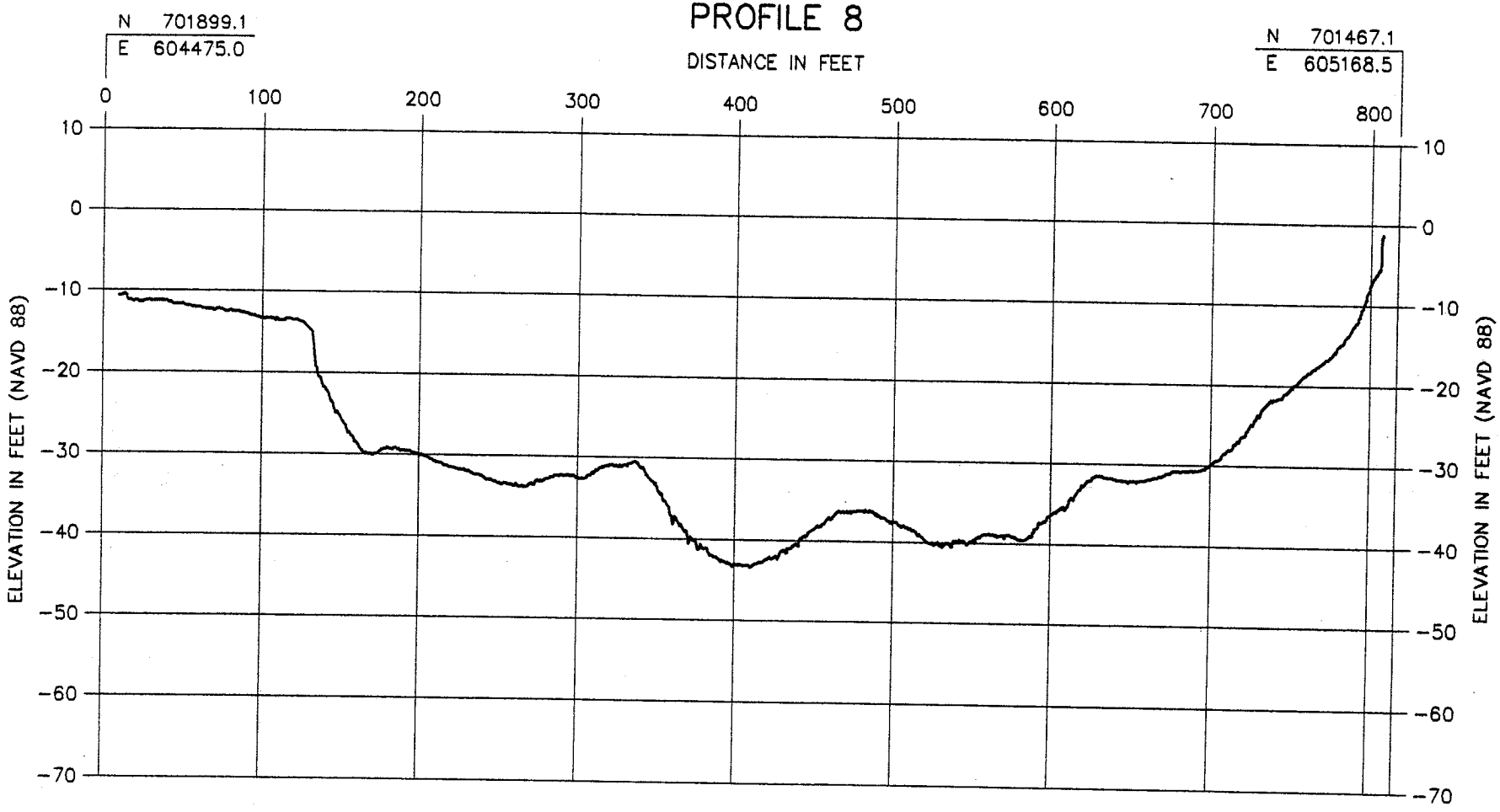

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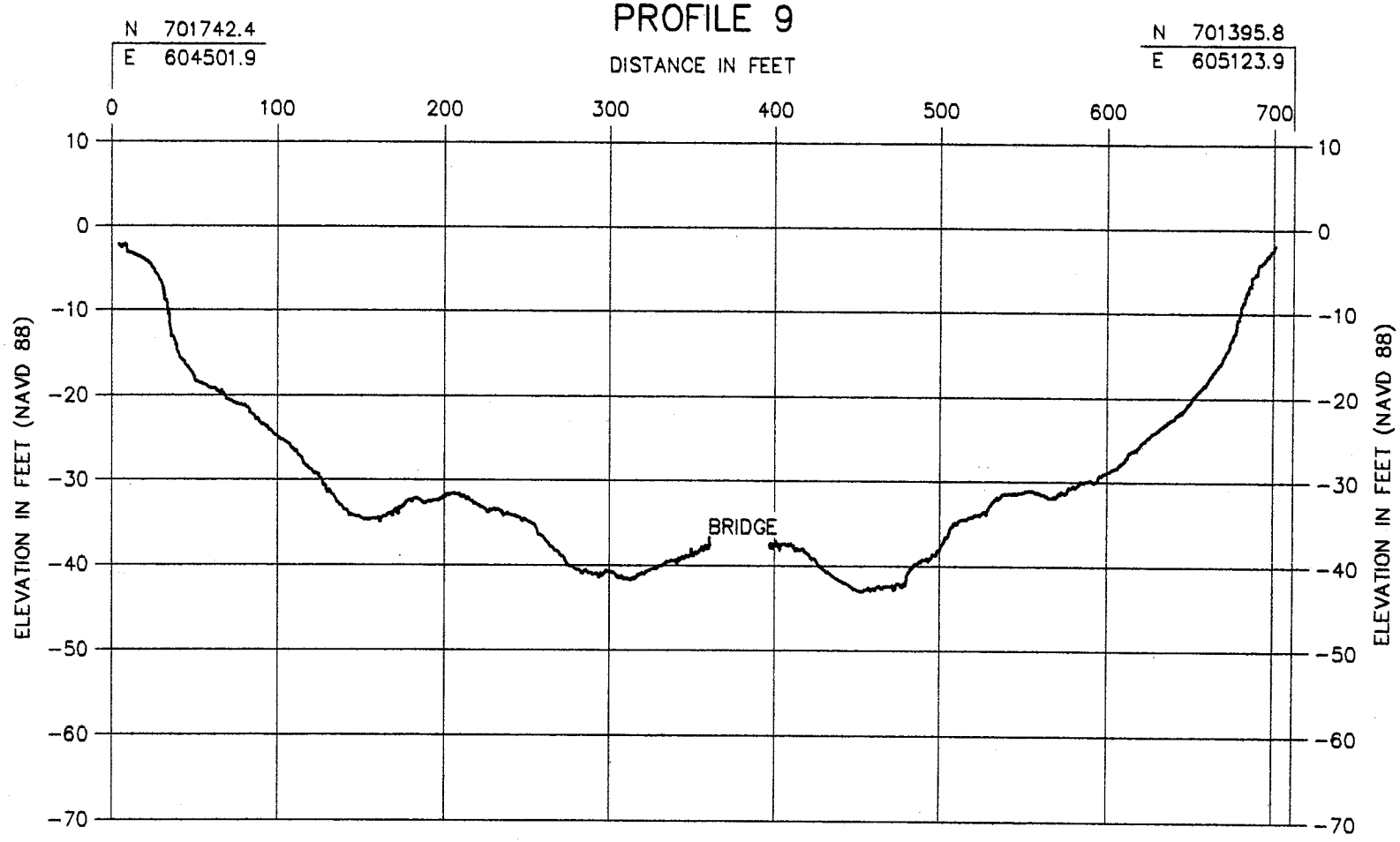

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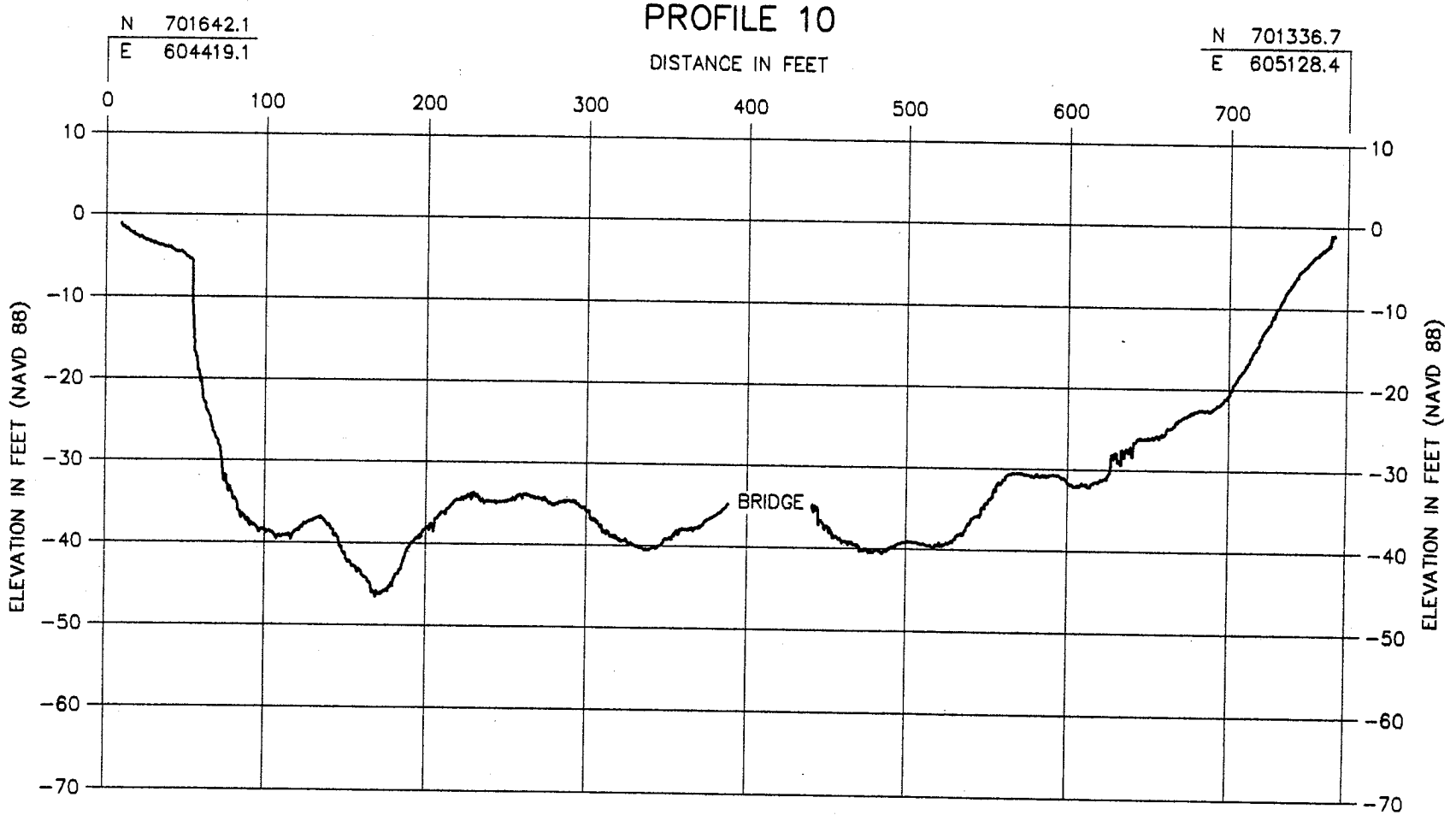

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——— 200 kHz FREQUENCY

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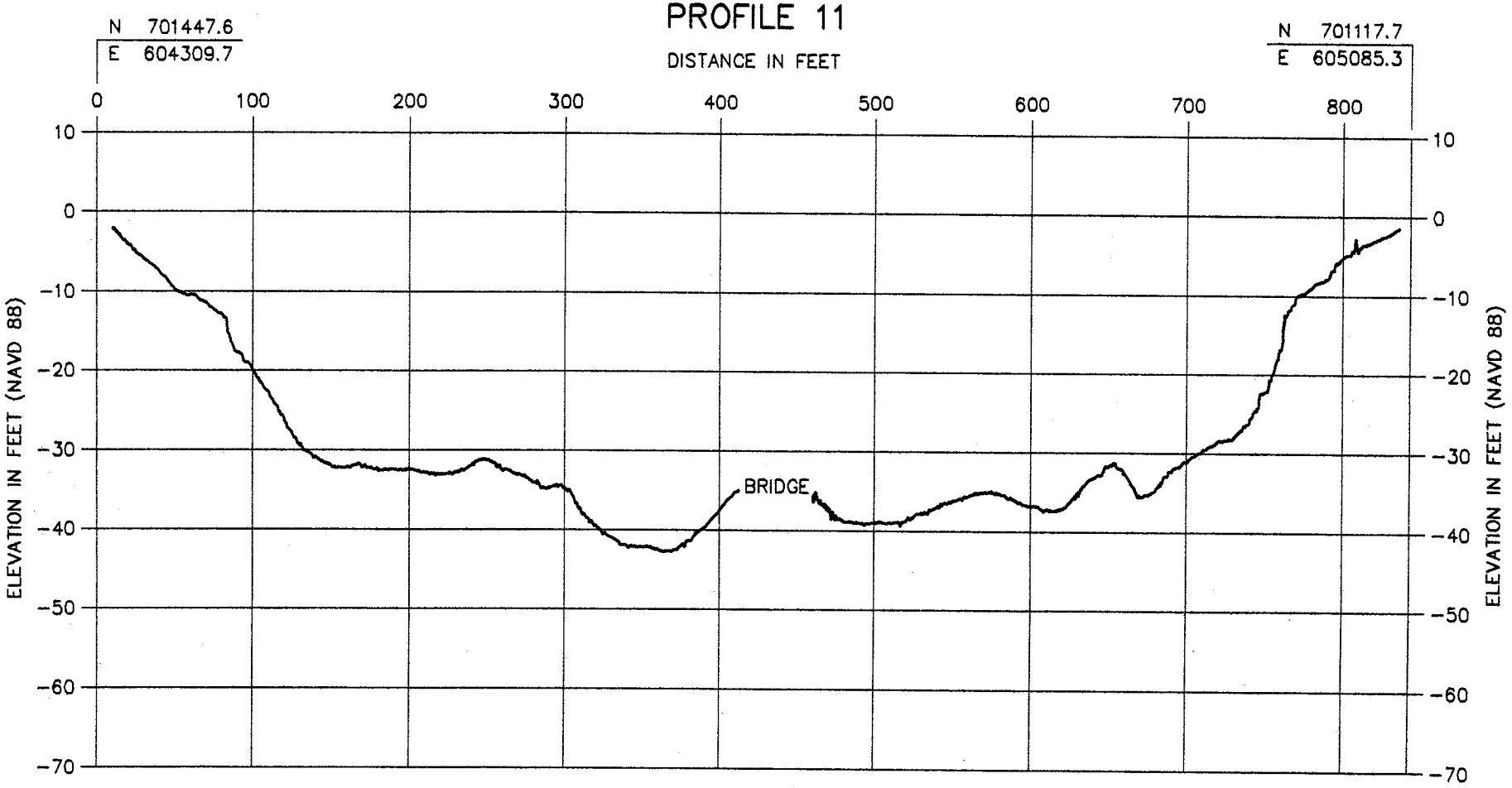

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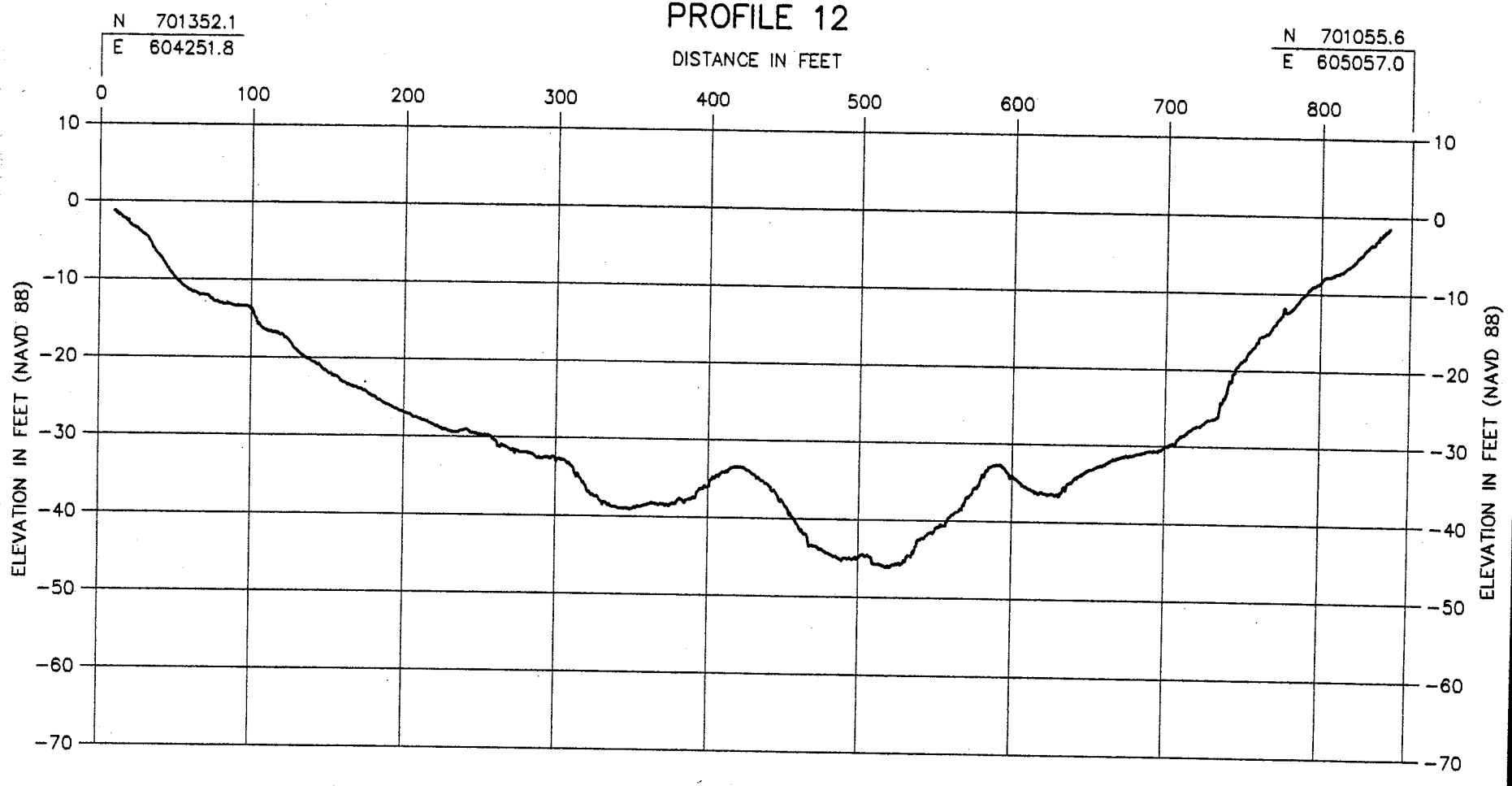

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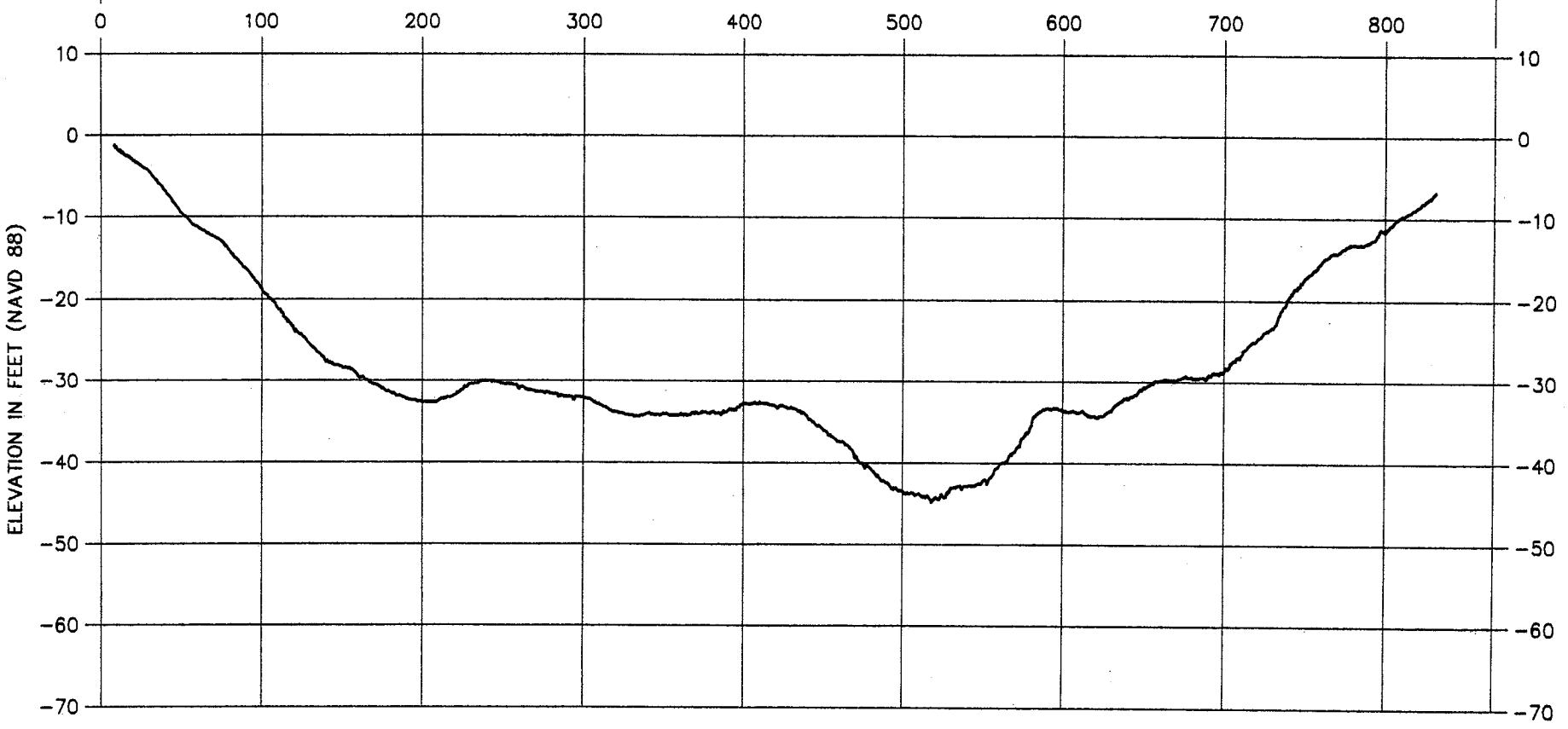

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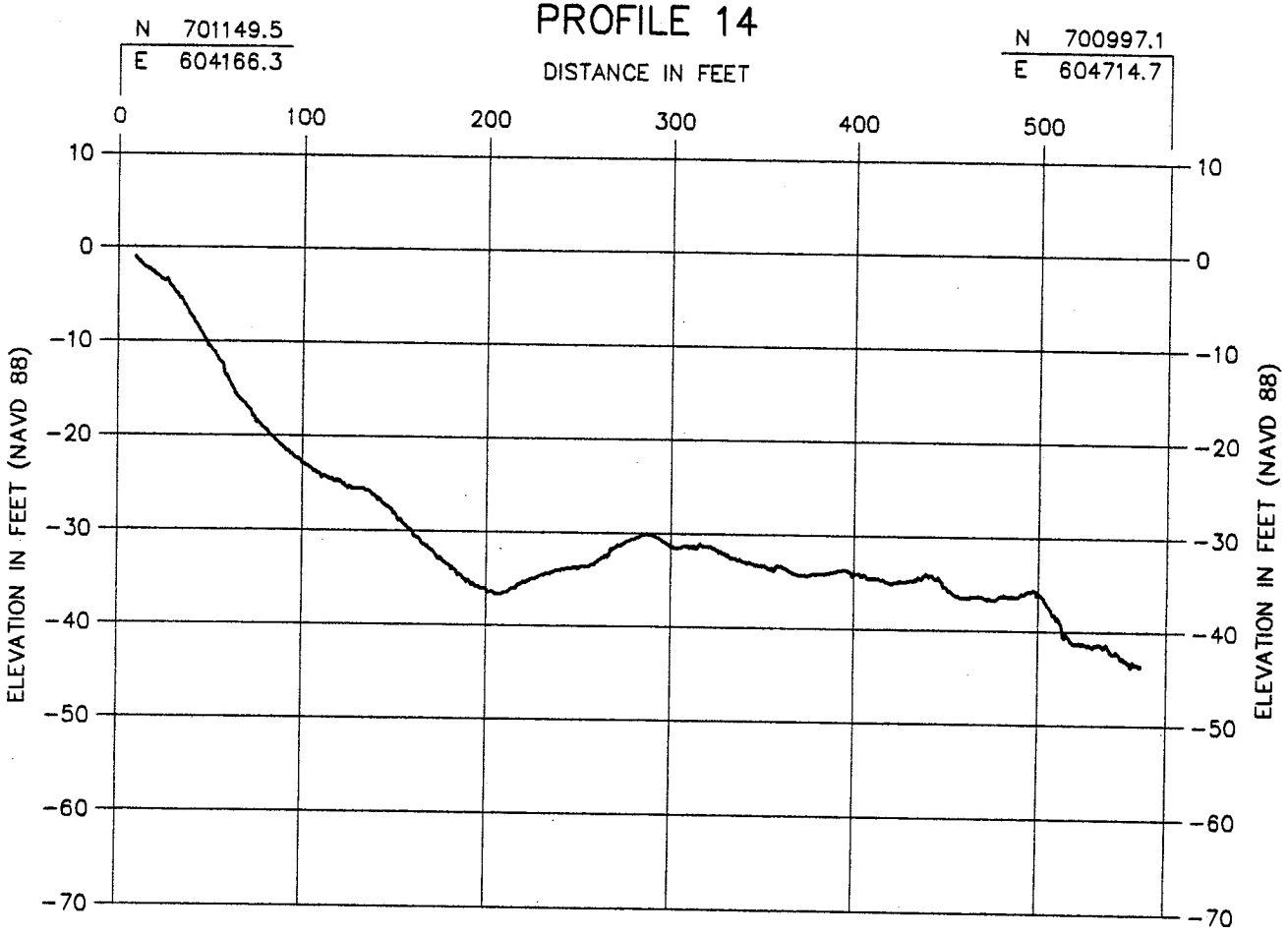

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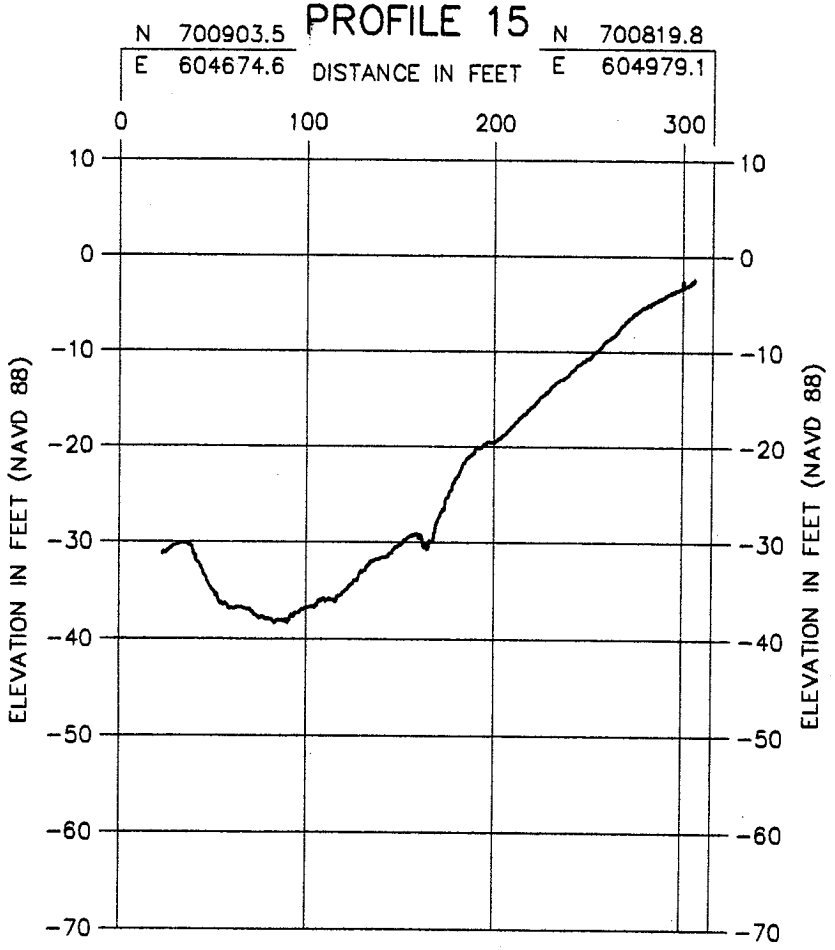

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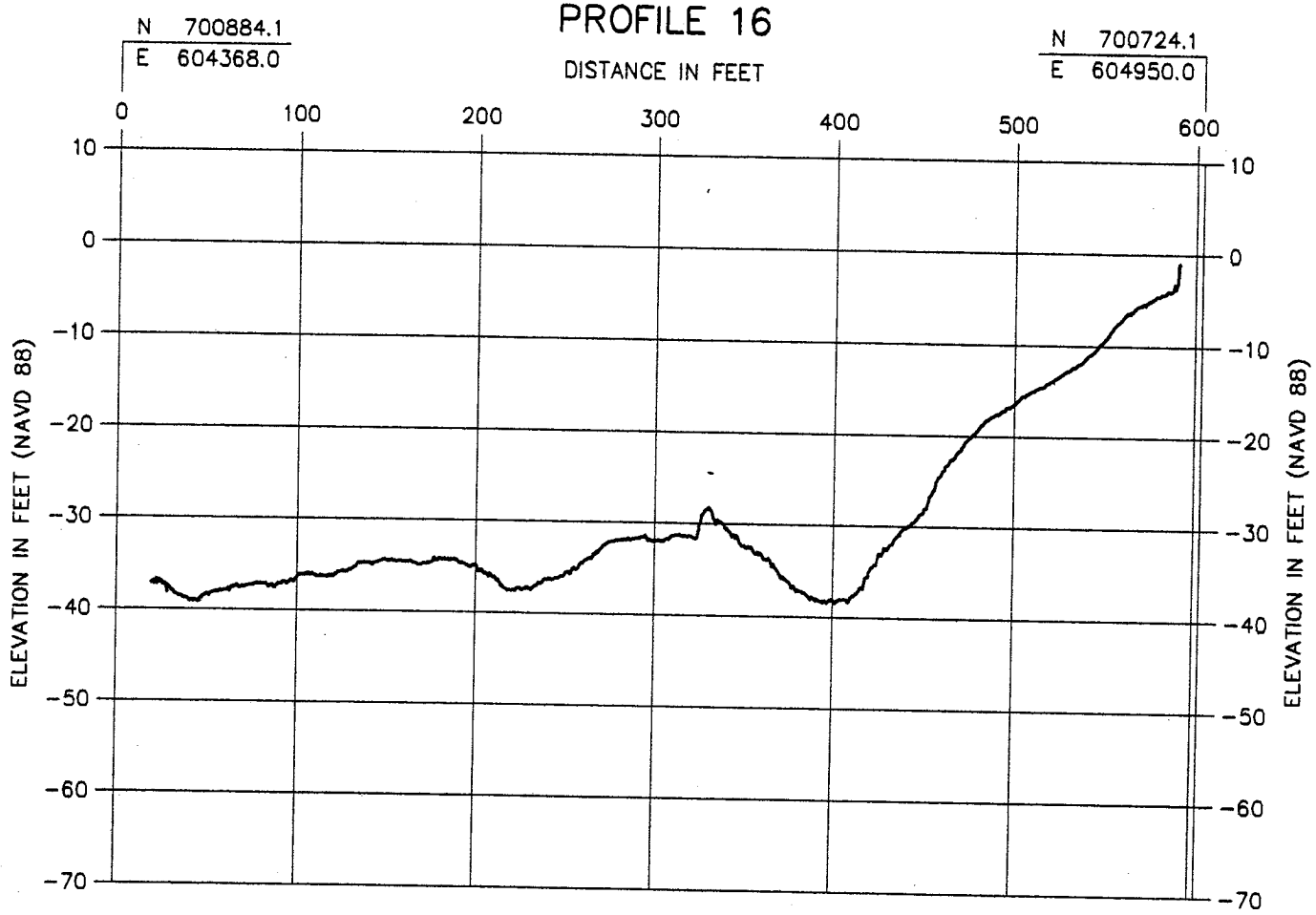

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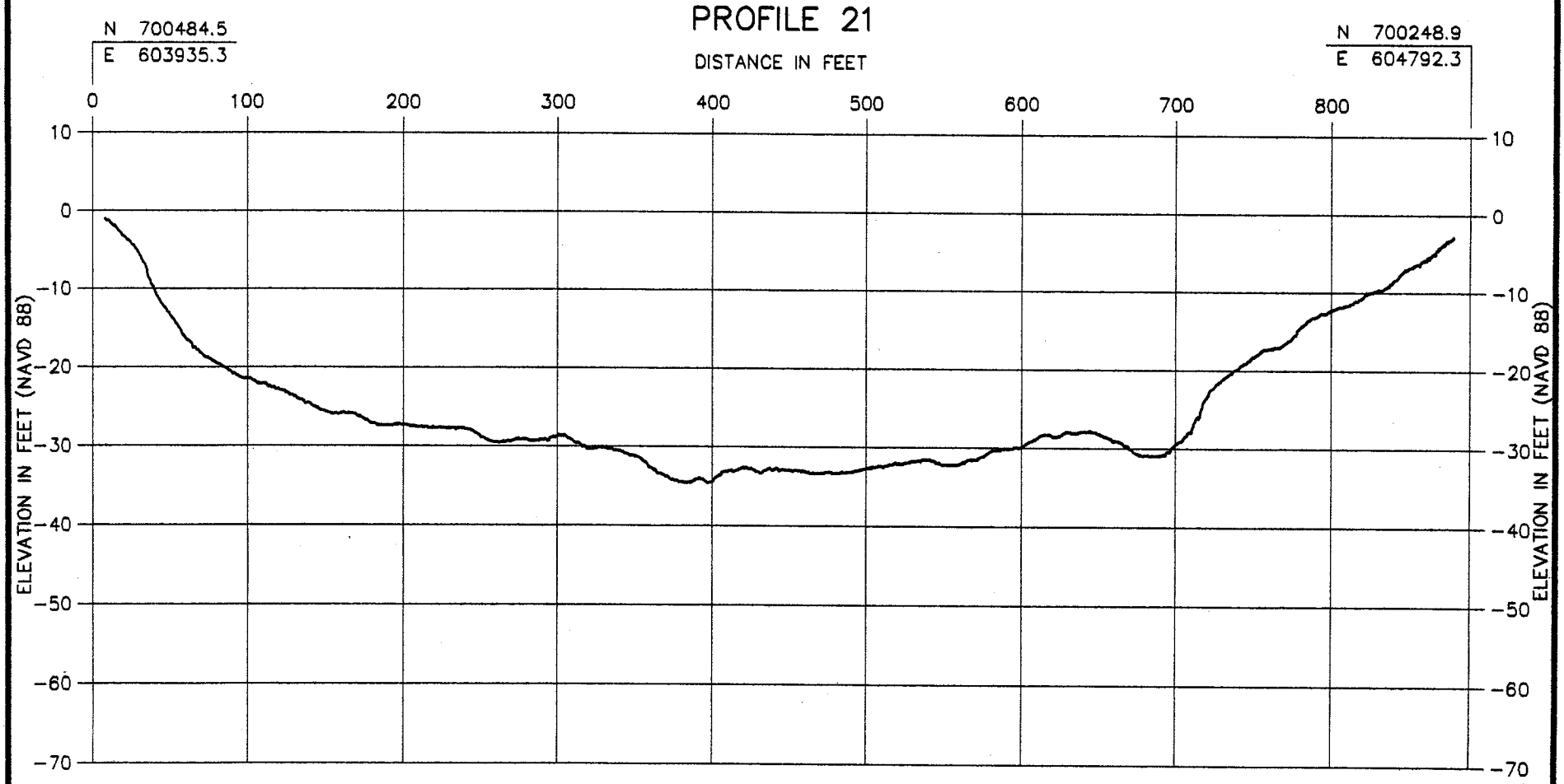

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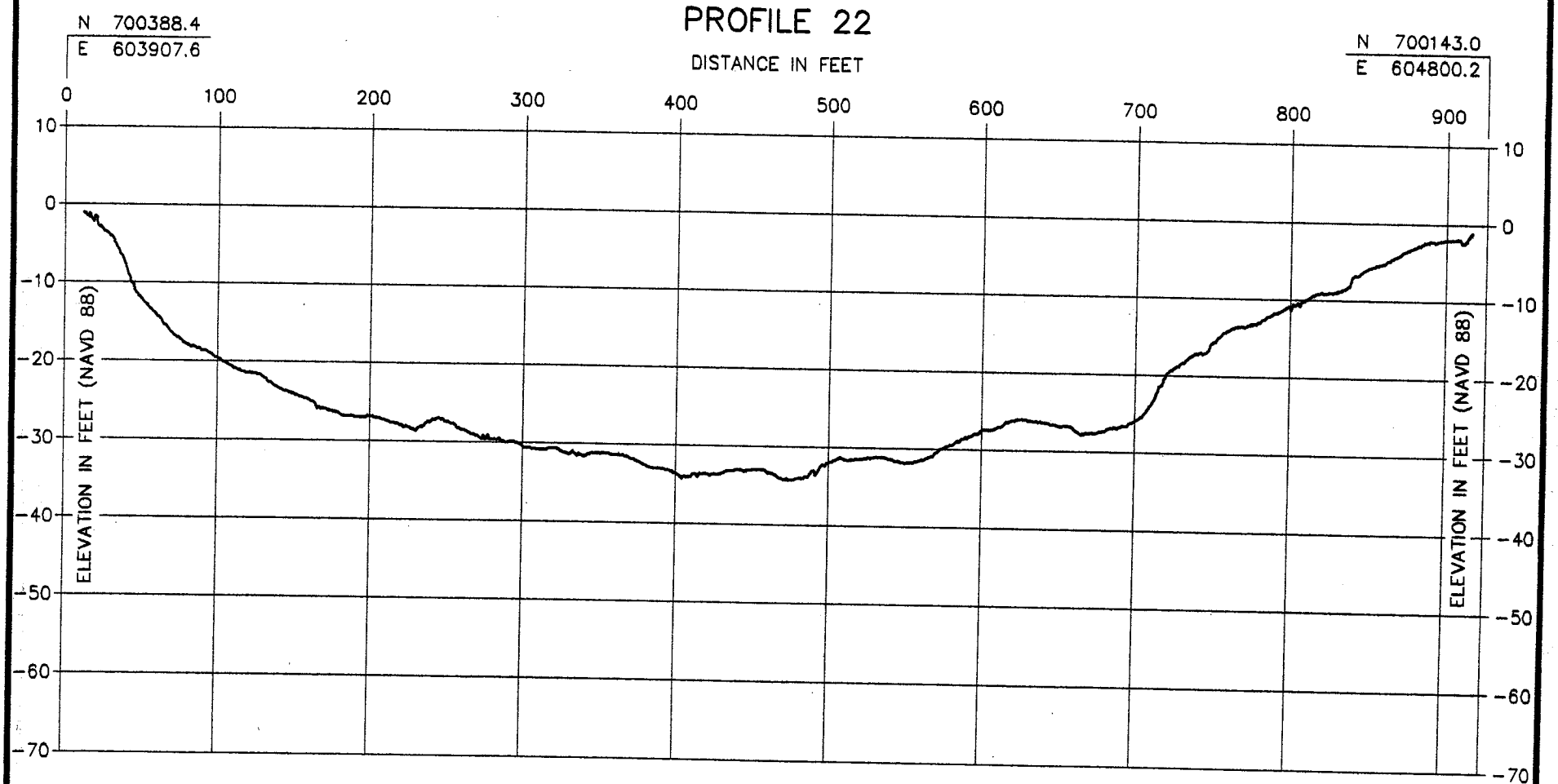

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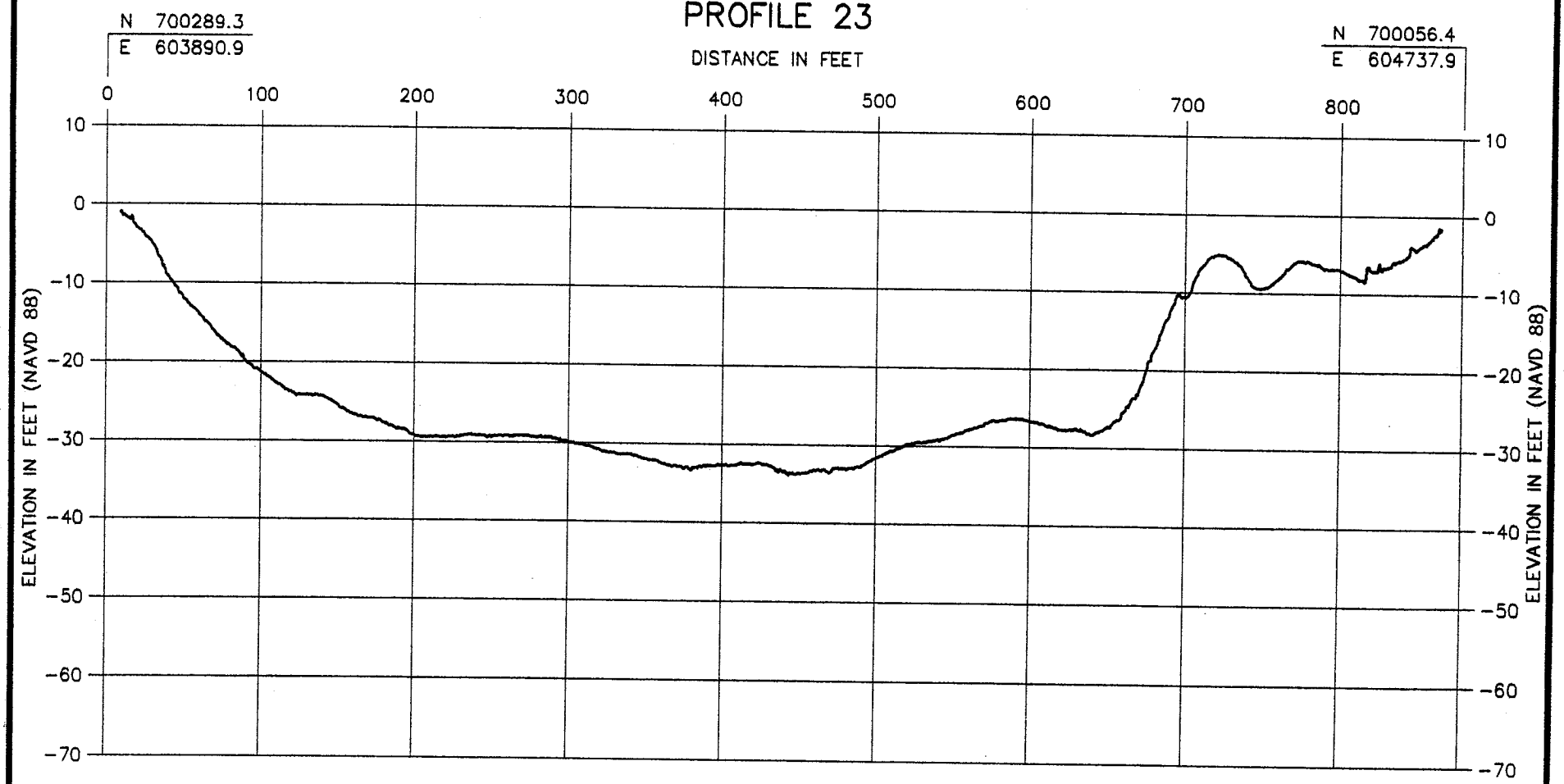

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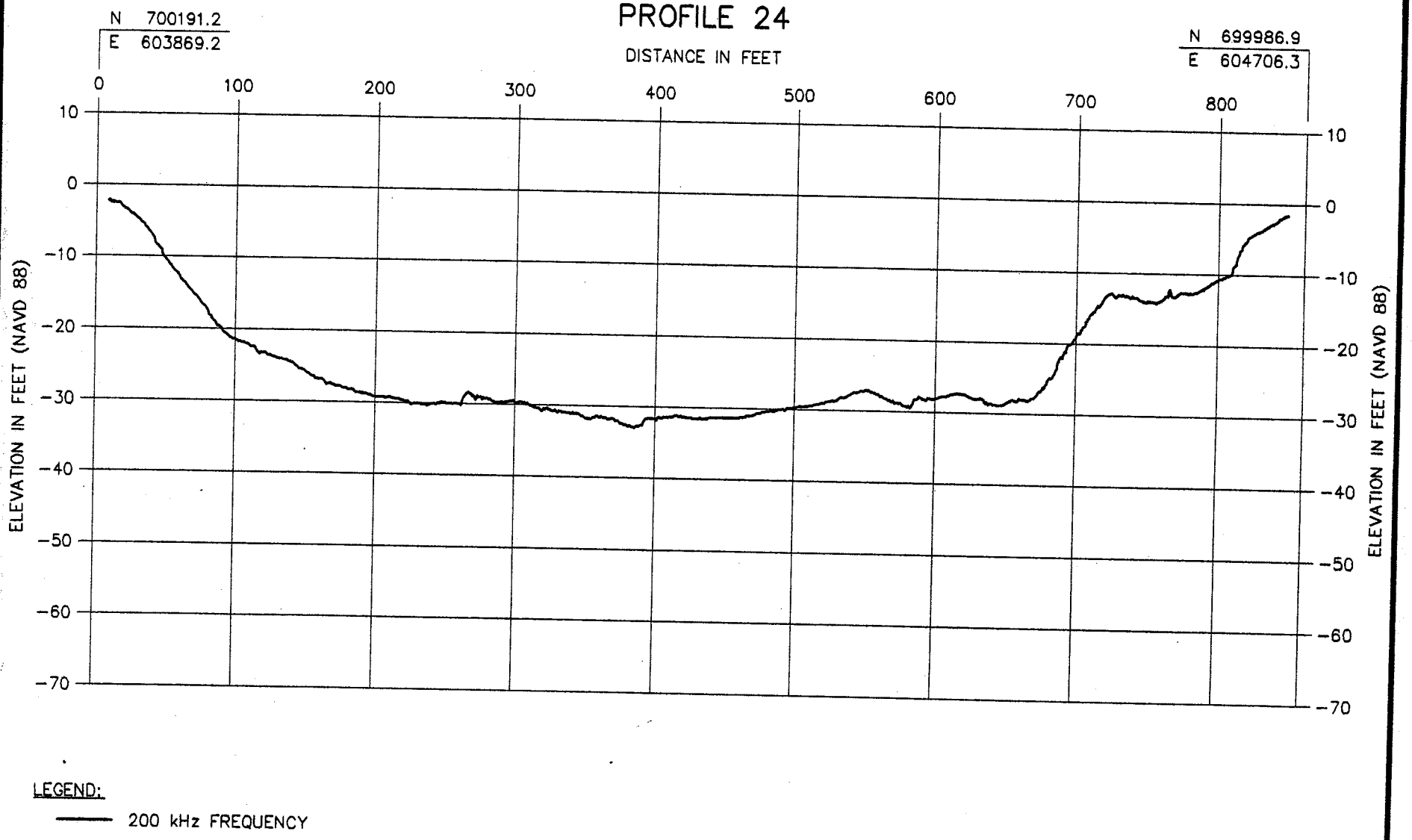
OSI

PROFILE 24



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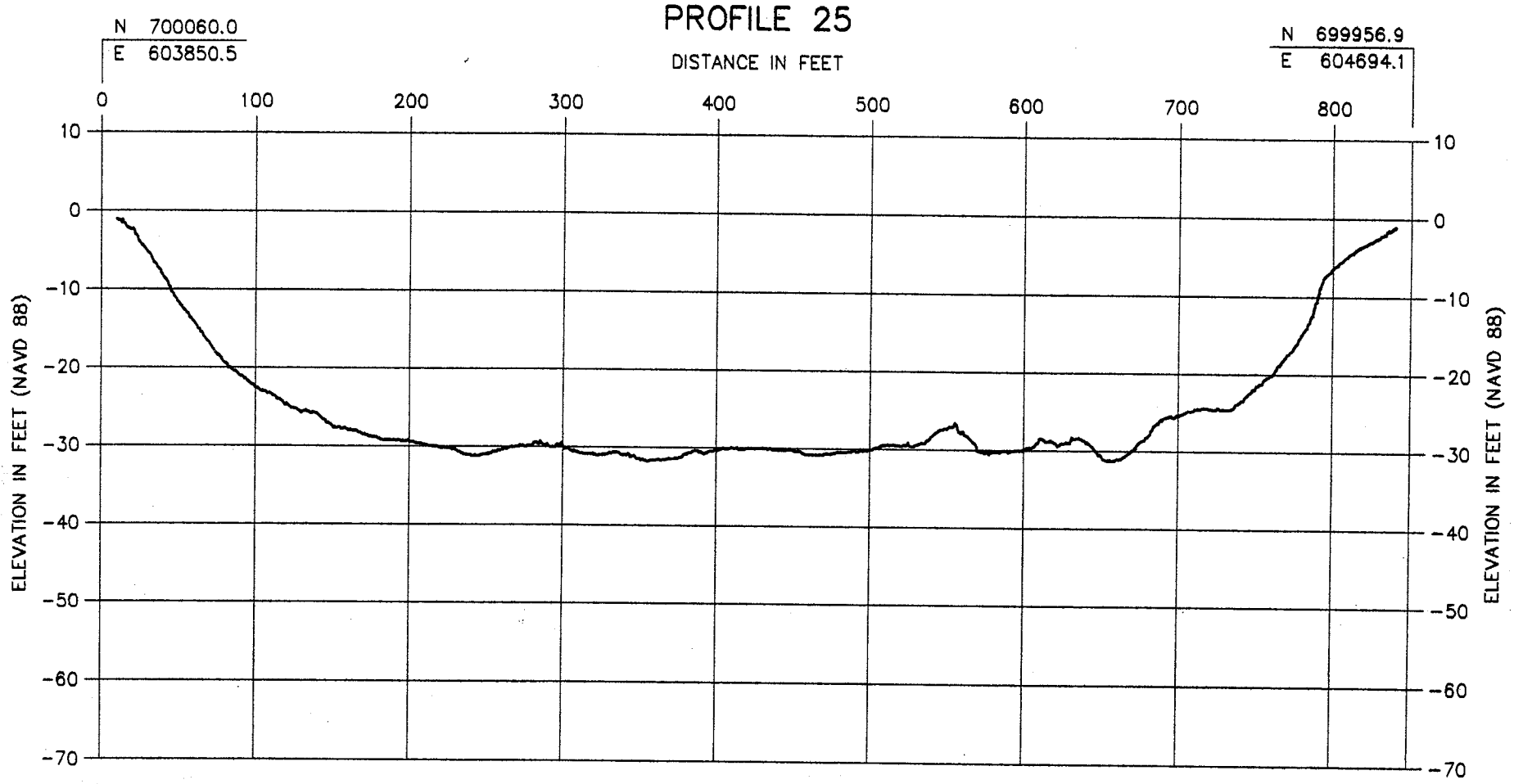

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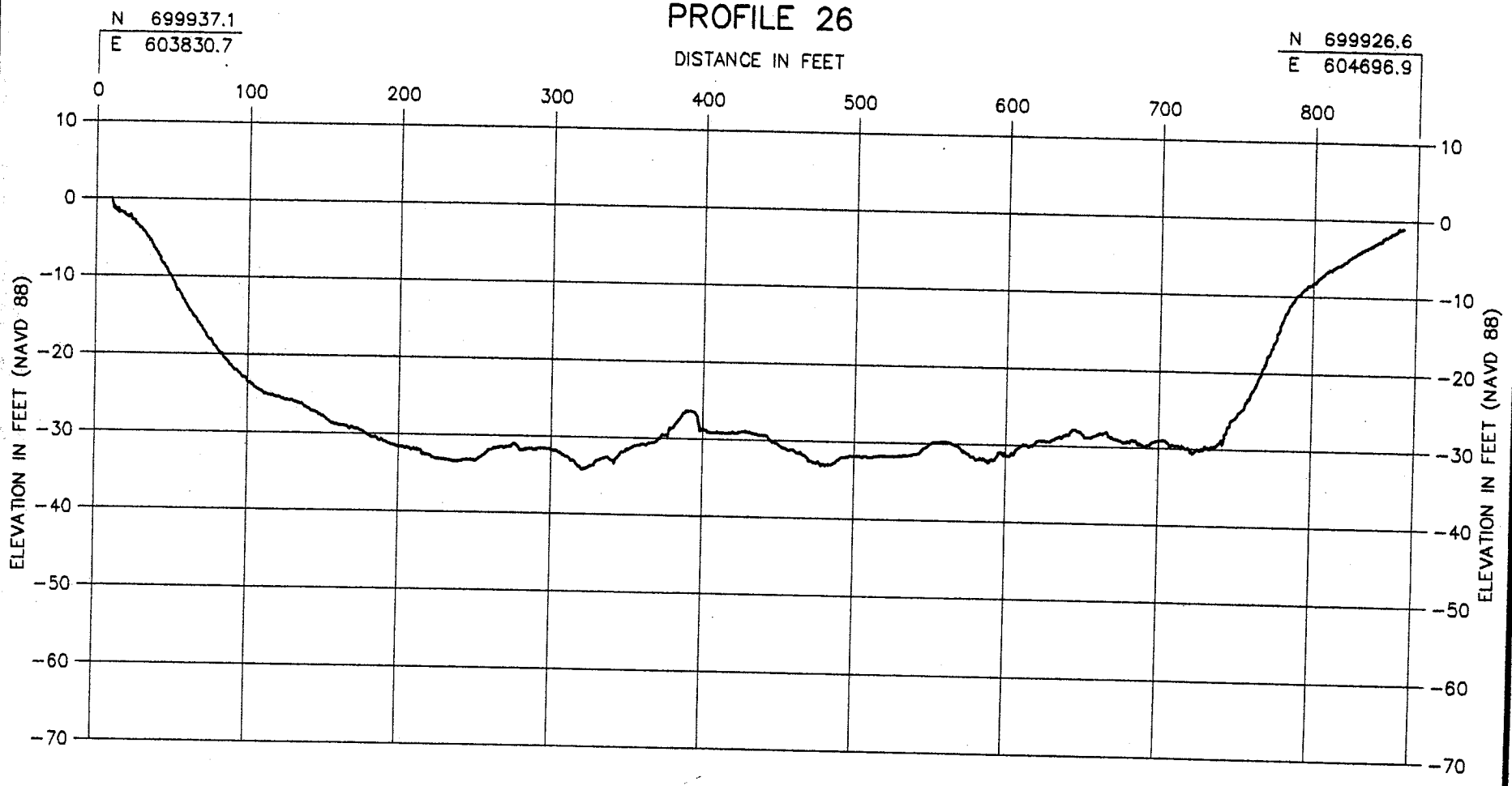

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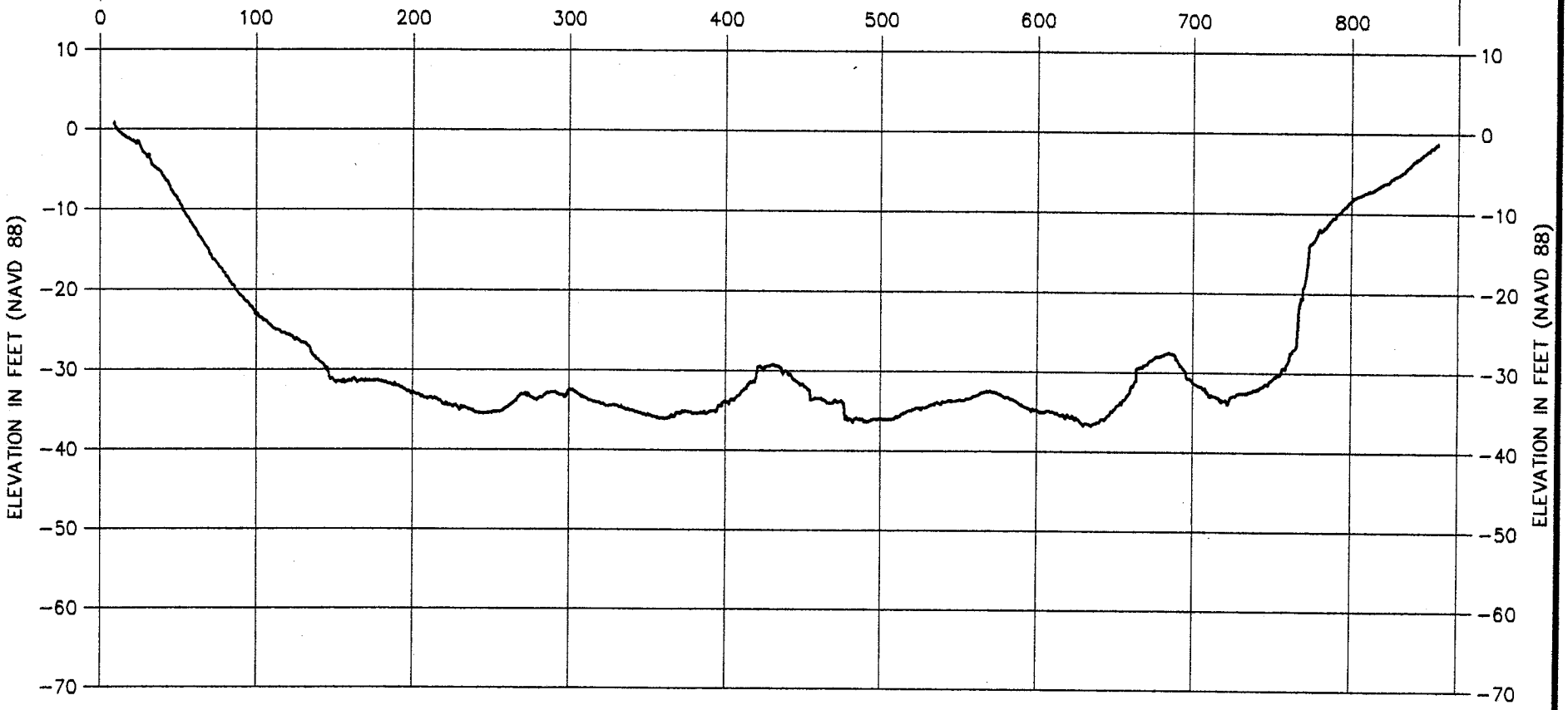

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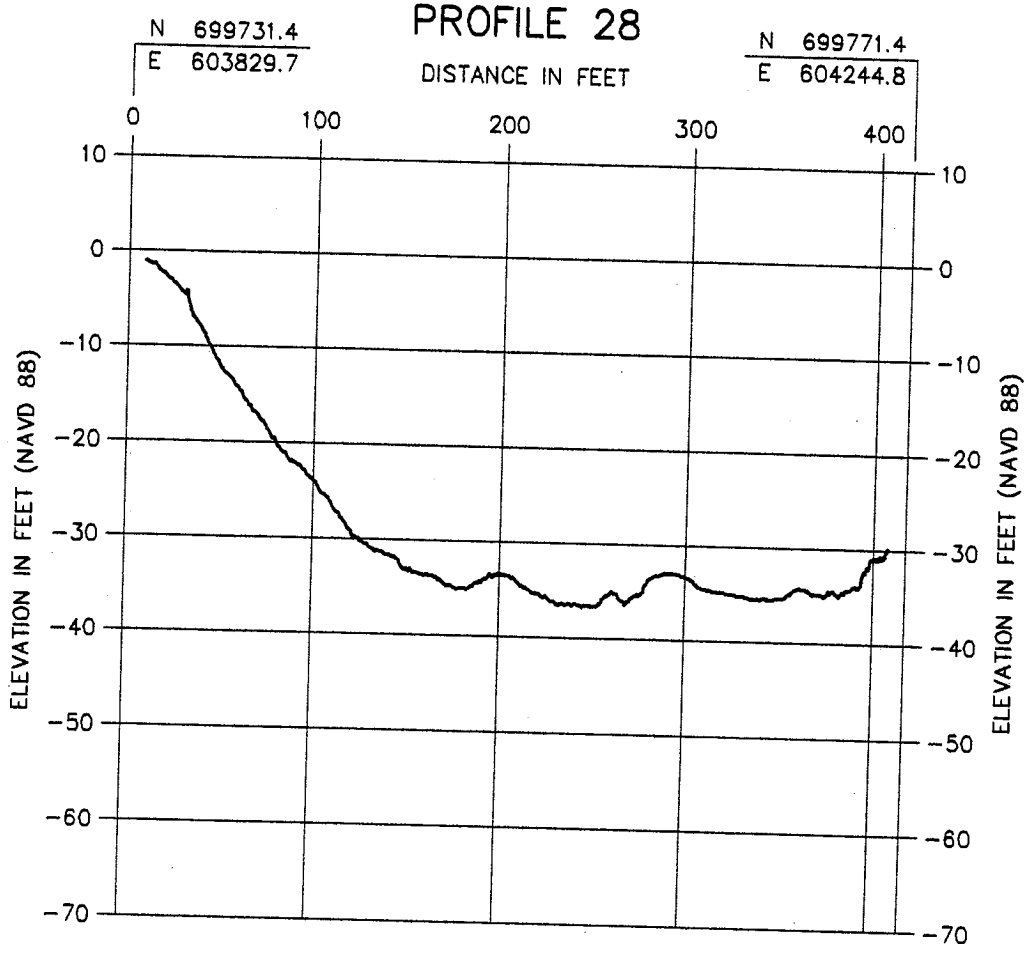

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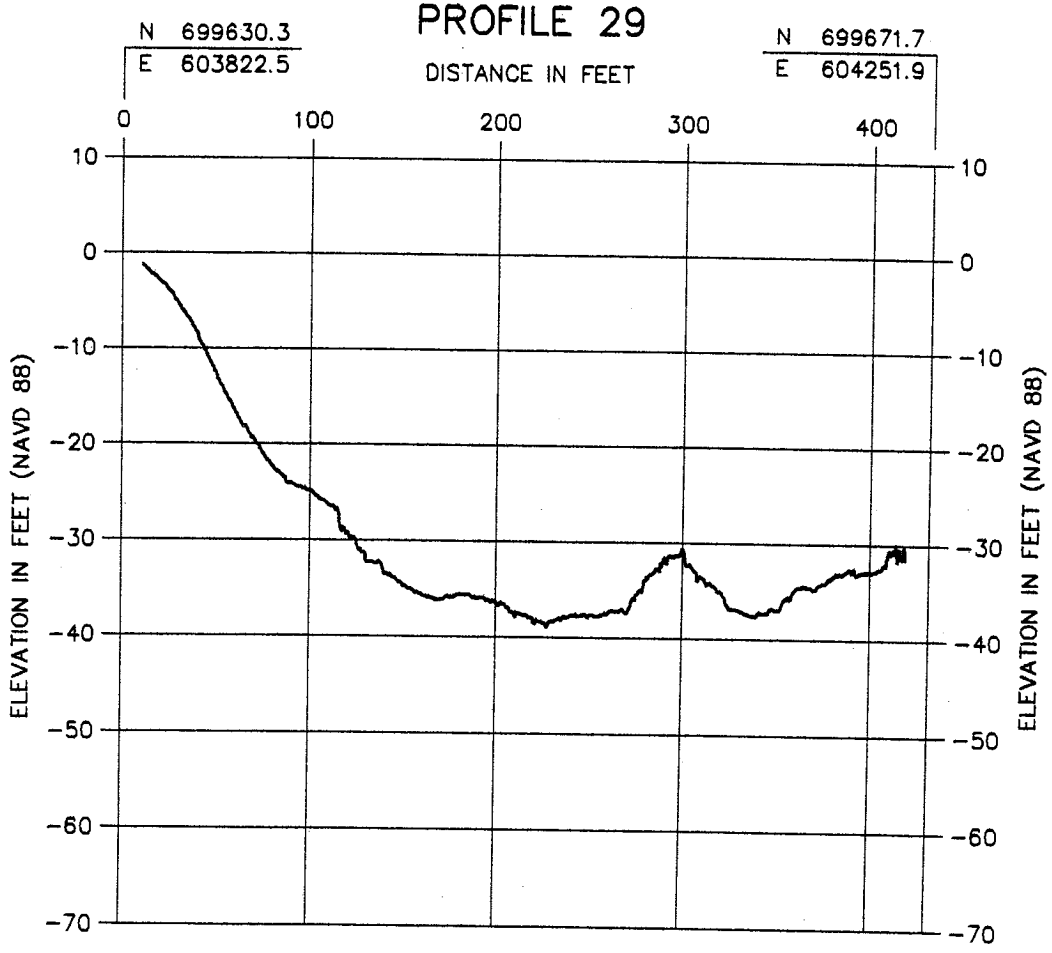

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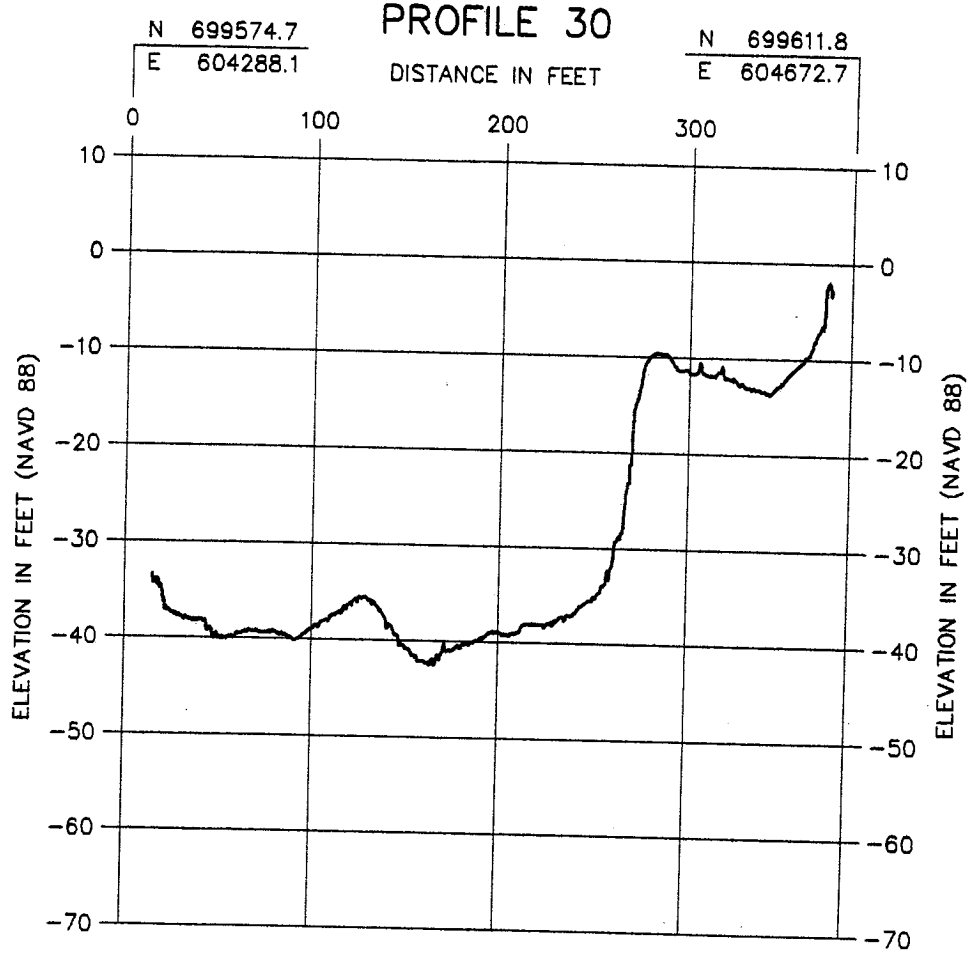

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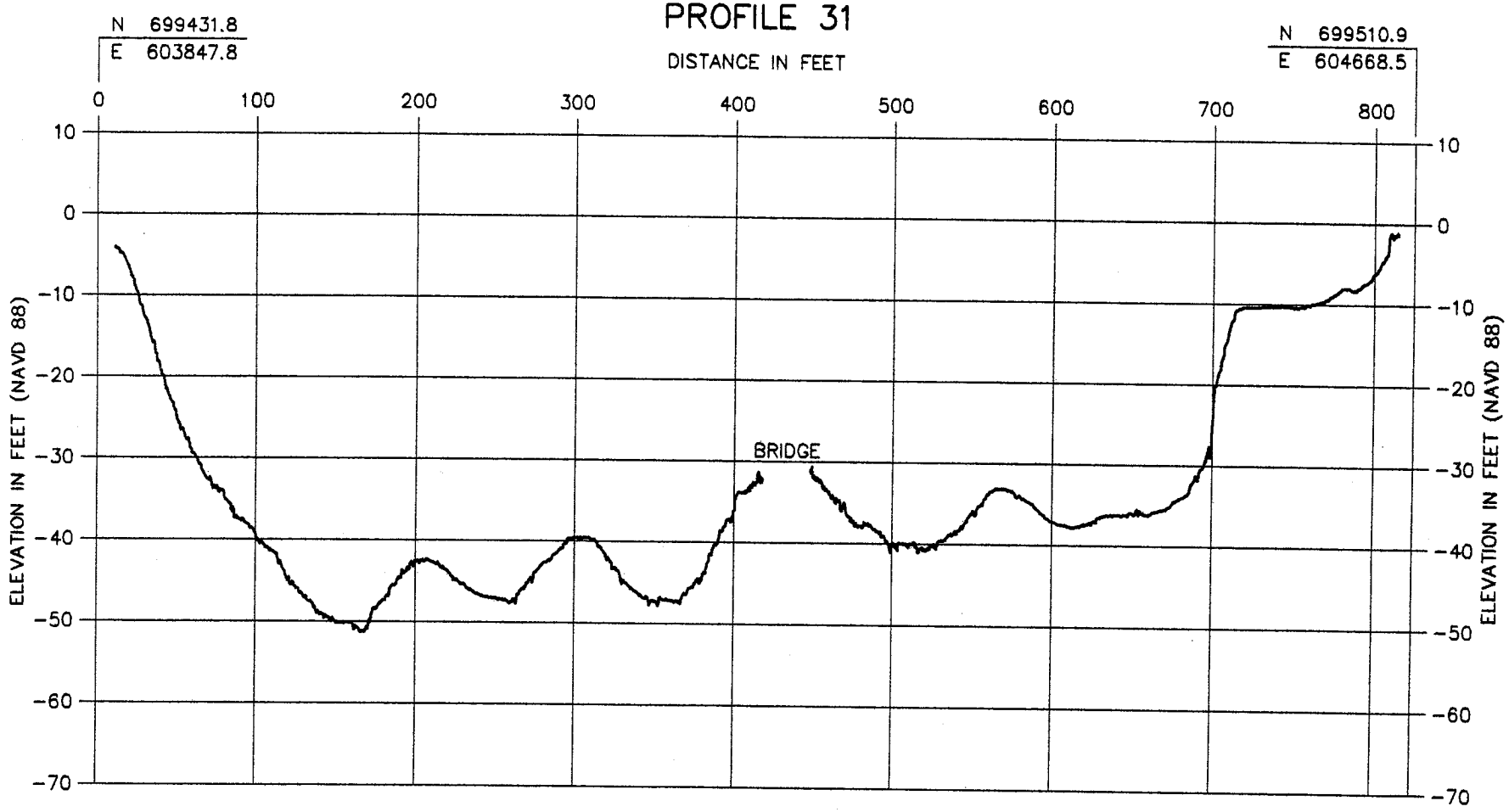

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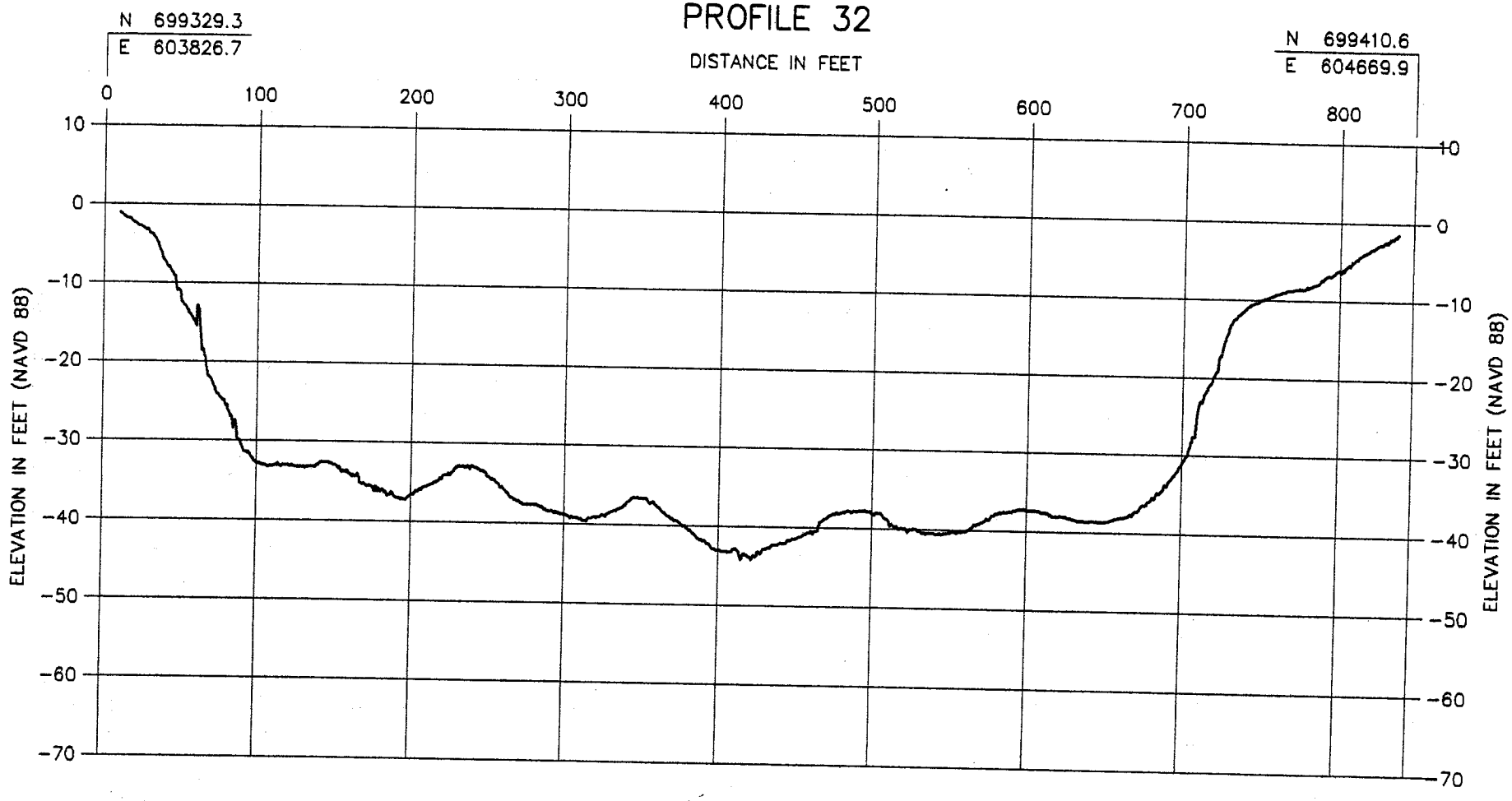
——— 200 kHz FREQUENCY

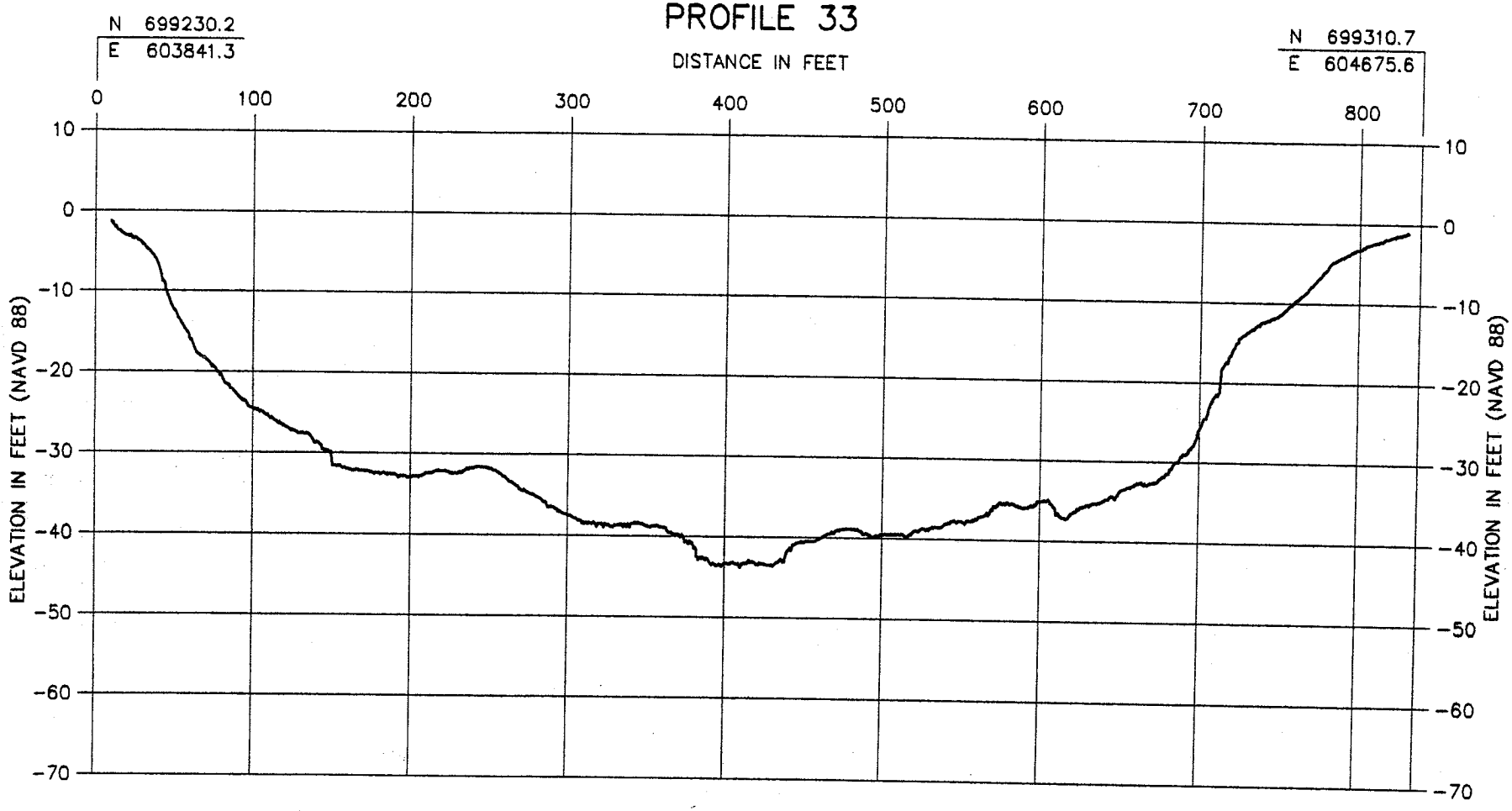
PROFILE 32



LEGEND:

200 kHz FREQUENCY

PROFILE 33

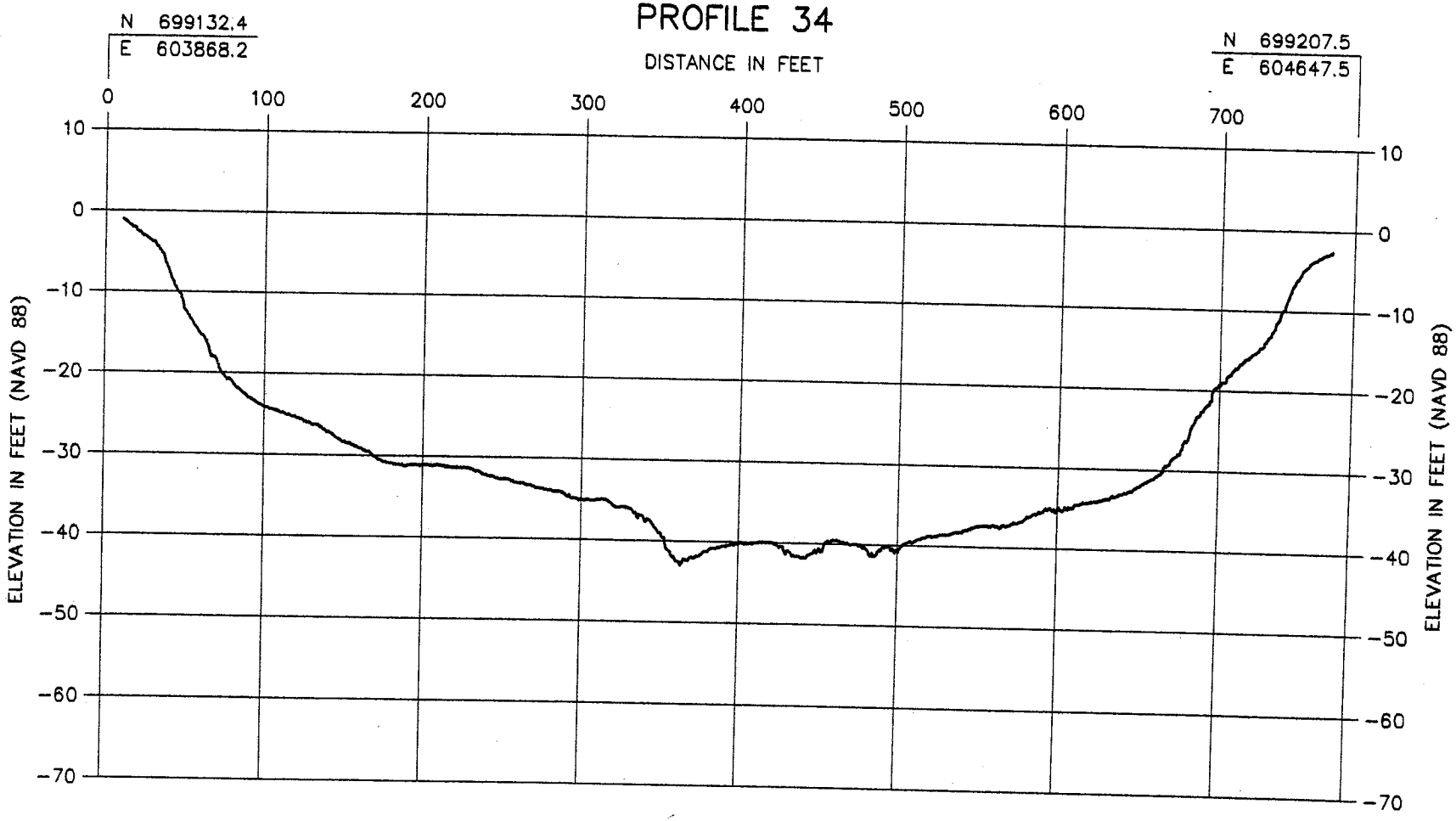


LEGEND:

——— 200 kHz FREQUENCY

OSI

PROFILE 34



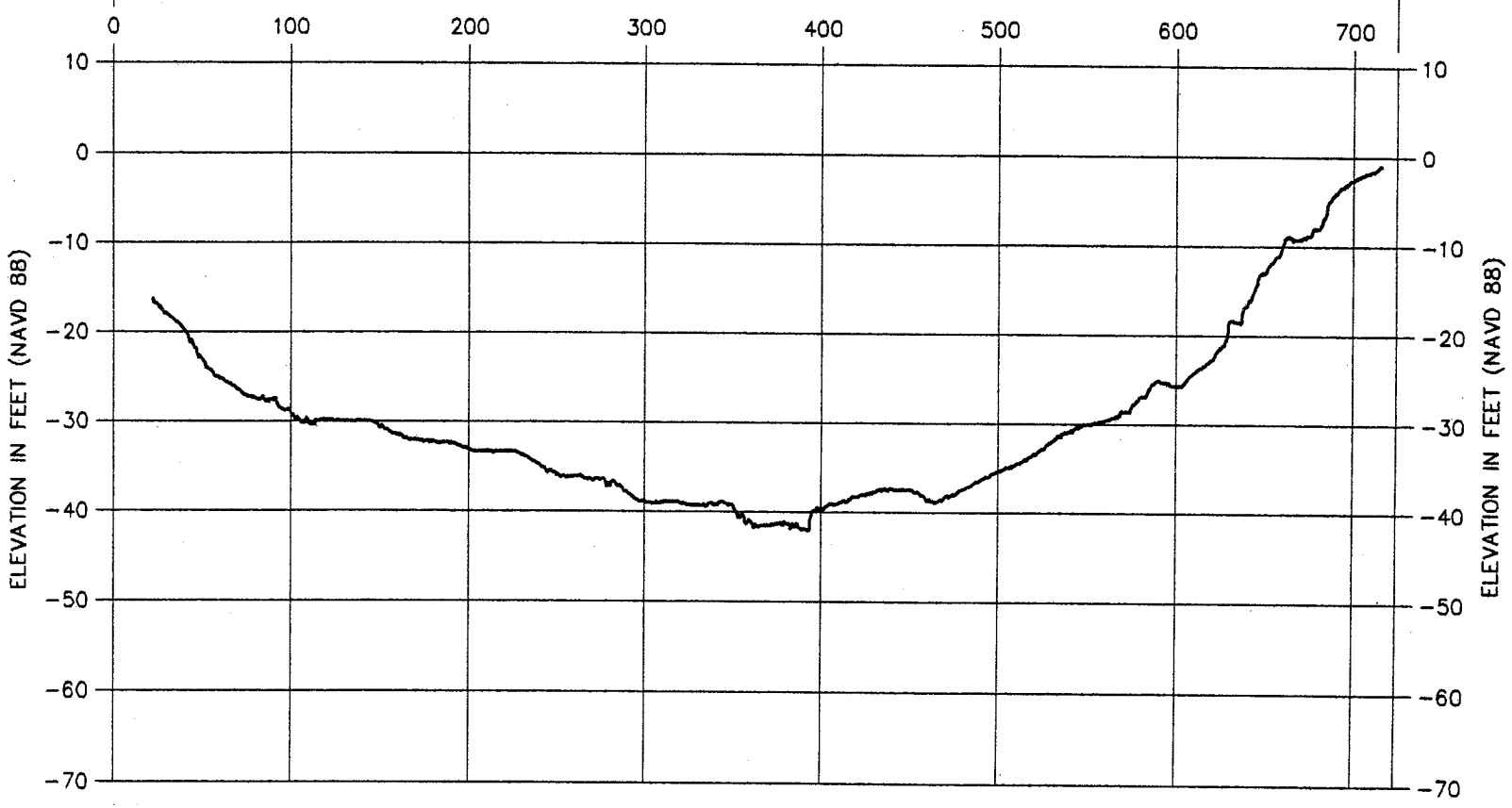
LEGEND:

——— 200 kHz FREQUENCY

PROFILE 35

N 699026.7
E 603957.3

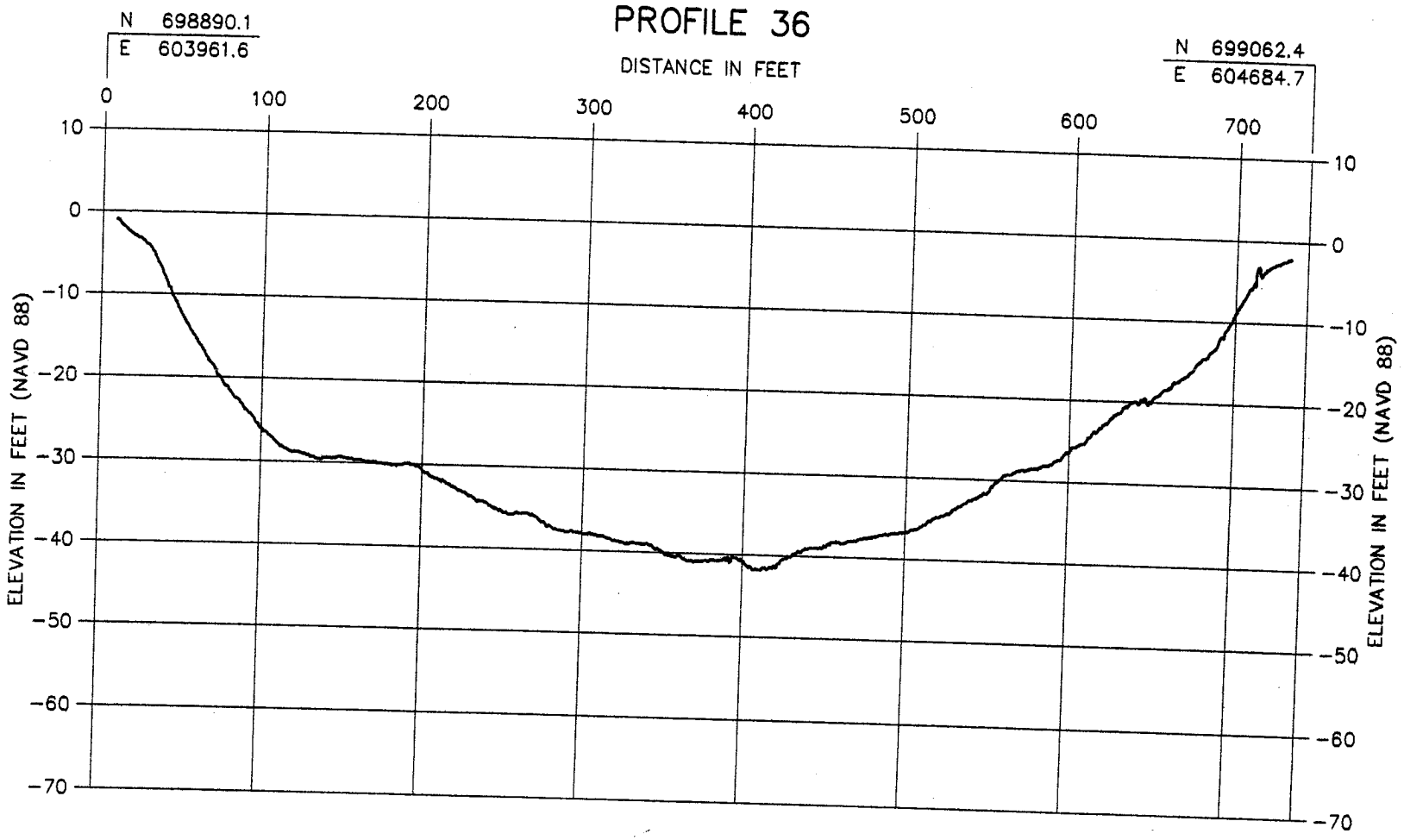
N 699124.1
E 604674.5



LEGEND:

——— 200 kHz FREQUENCY

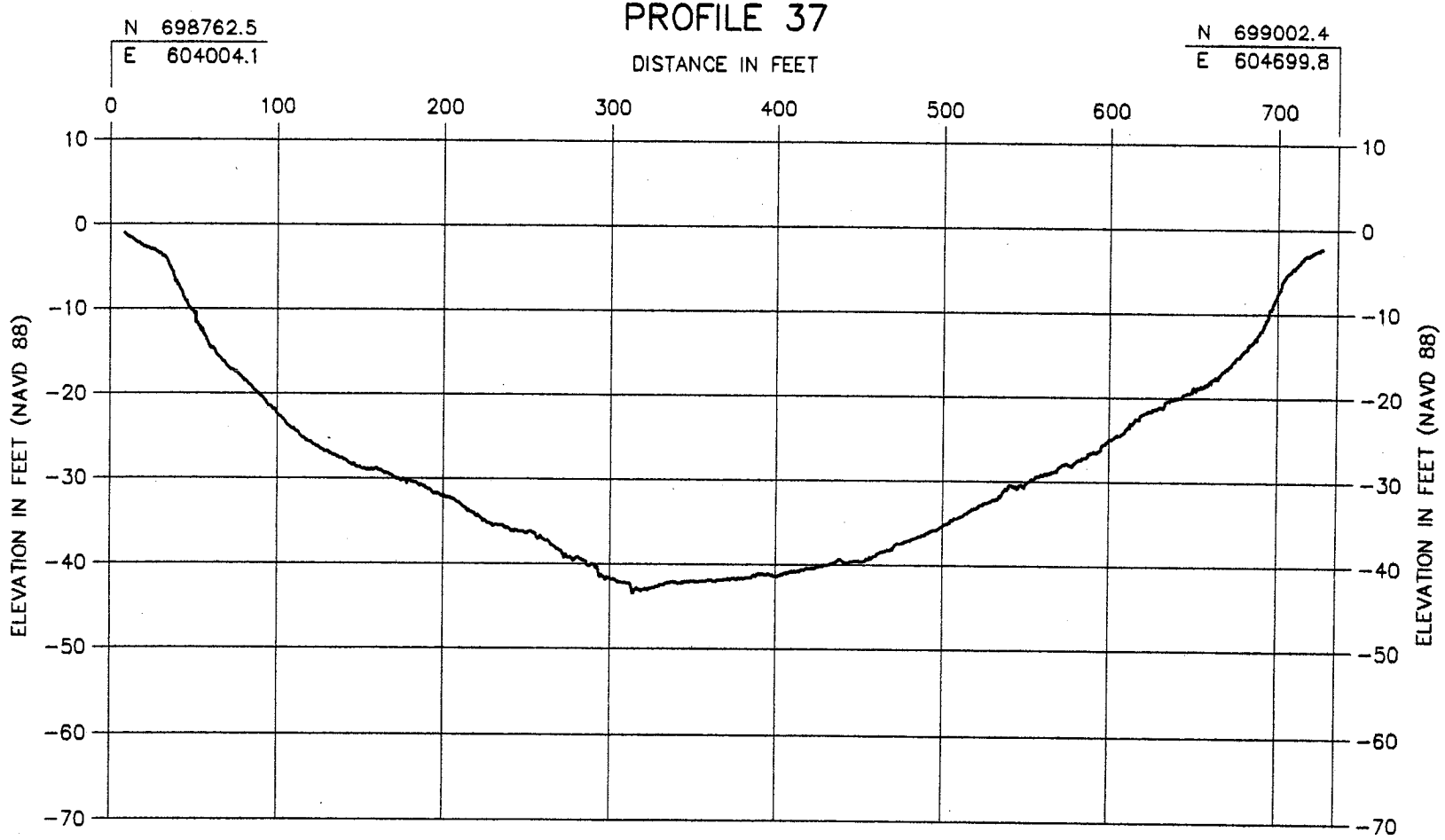
PROFILE 36



LEGEND:

200 kHz FREQUENCY

PROFILE 37



LEGEND:

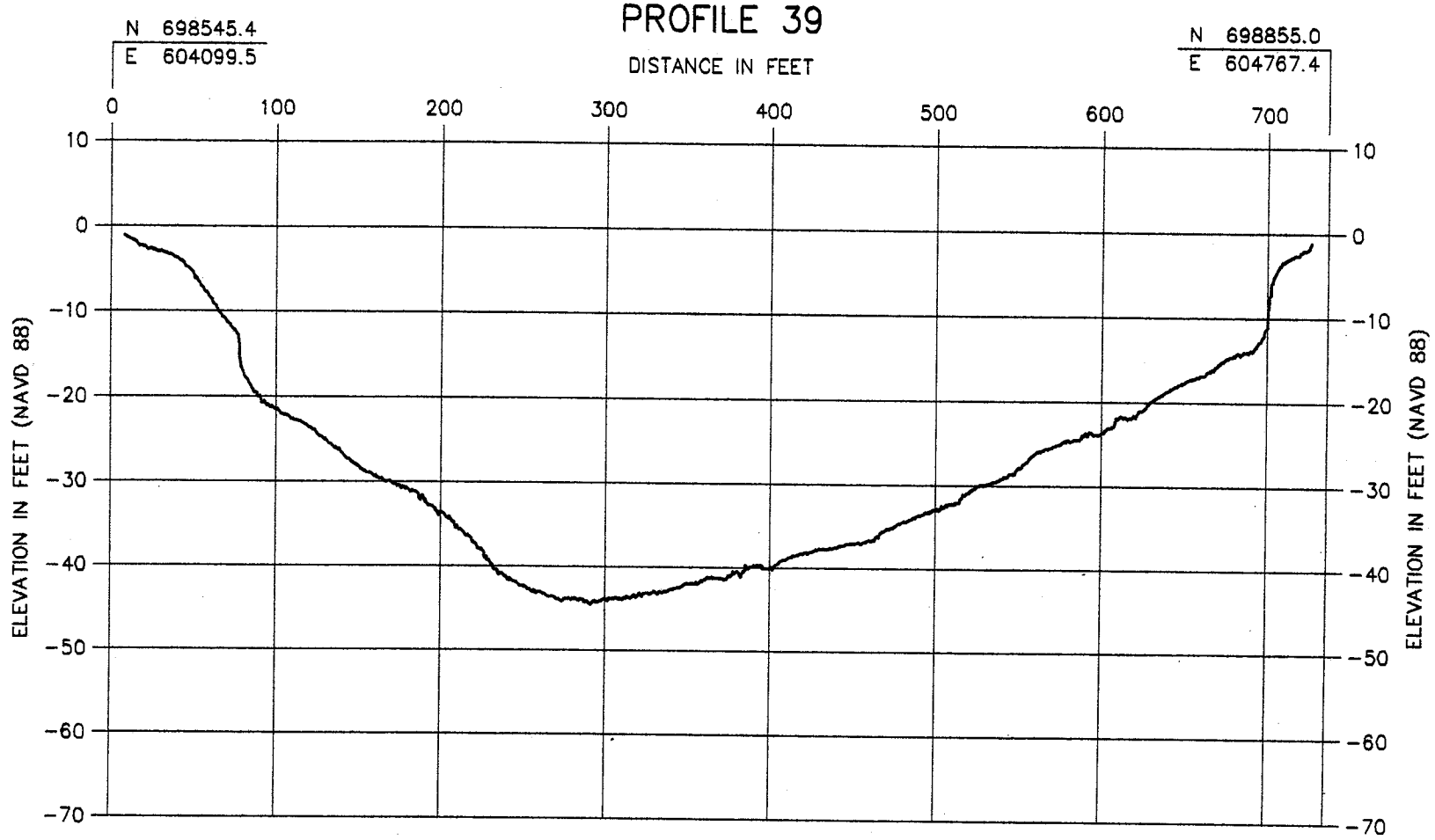
——— 200 kHz FREQUENCY

PROFILE 38

LEGEND:

——— 200 kHz FREQUENCY

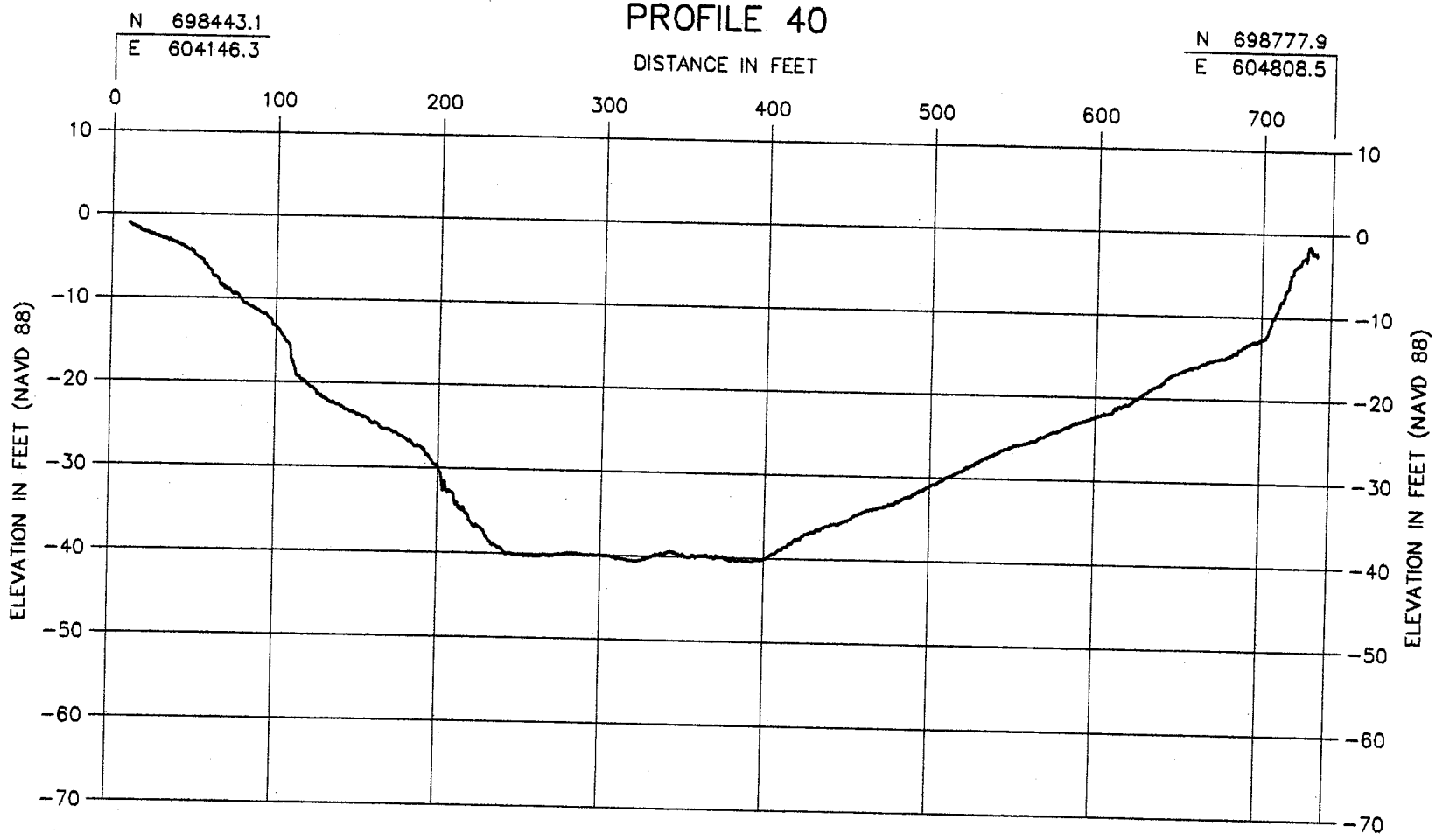
PROFILE 39



LEGEND:

——— 200 kHz FREQUENCY

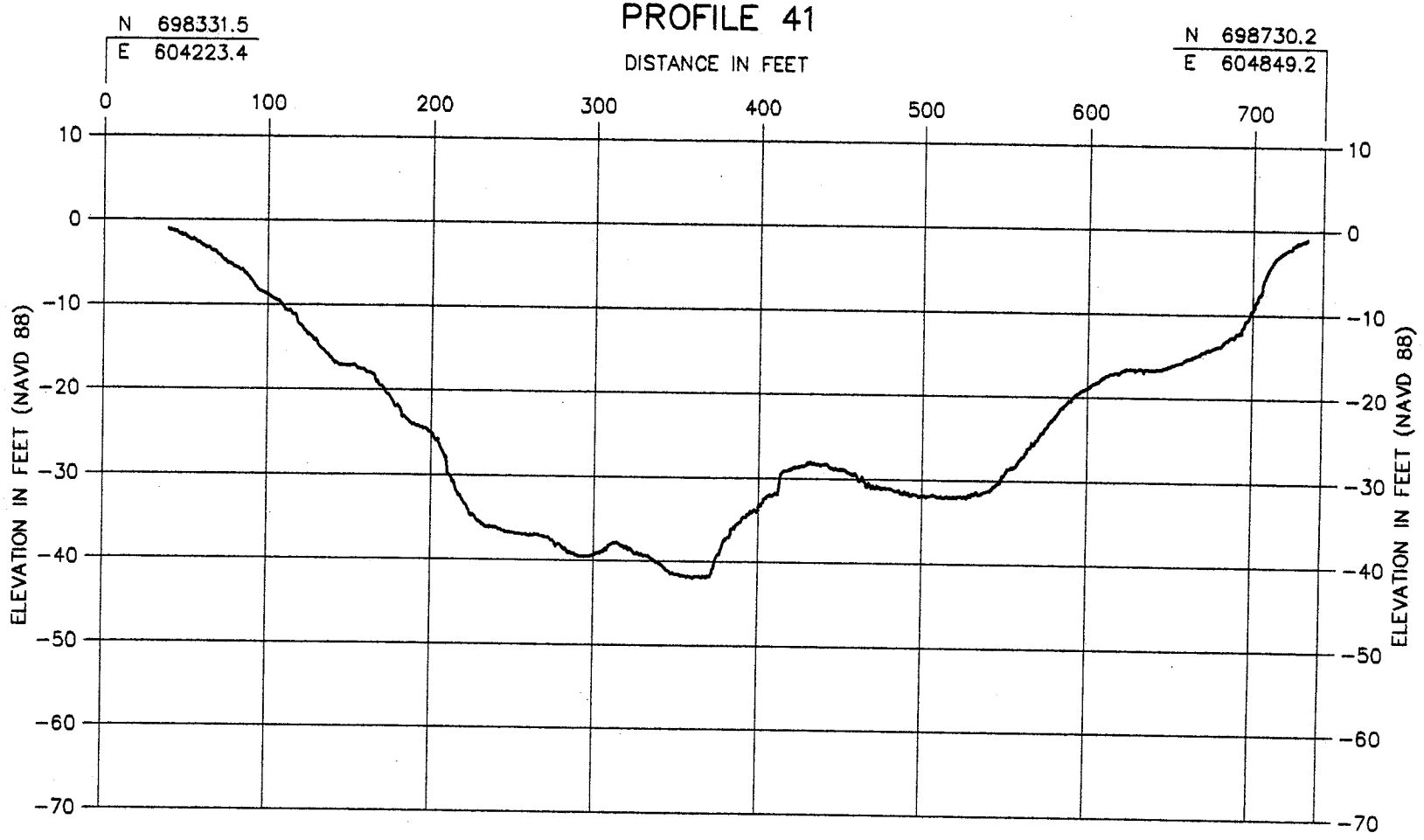
PROFILE 40



LEGEND:

——— 200 kHz FREQUENCY

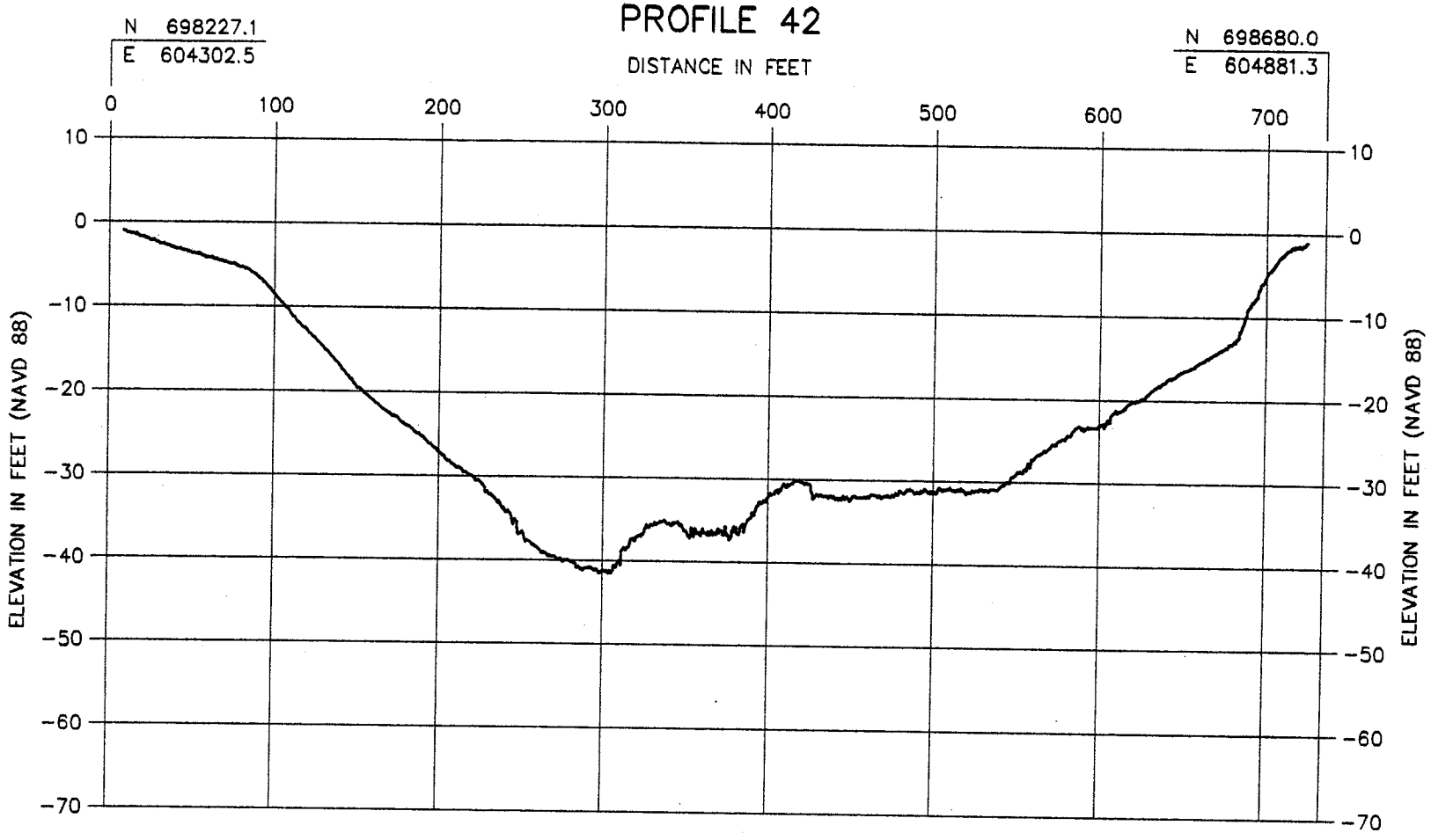
PROFILE 41



LEGEND:

——— 200 kHz FREQUENCY

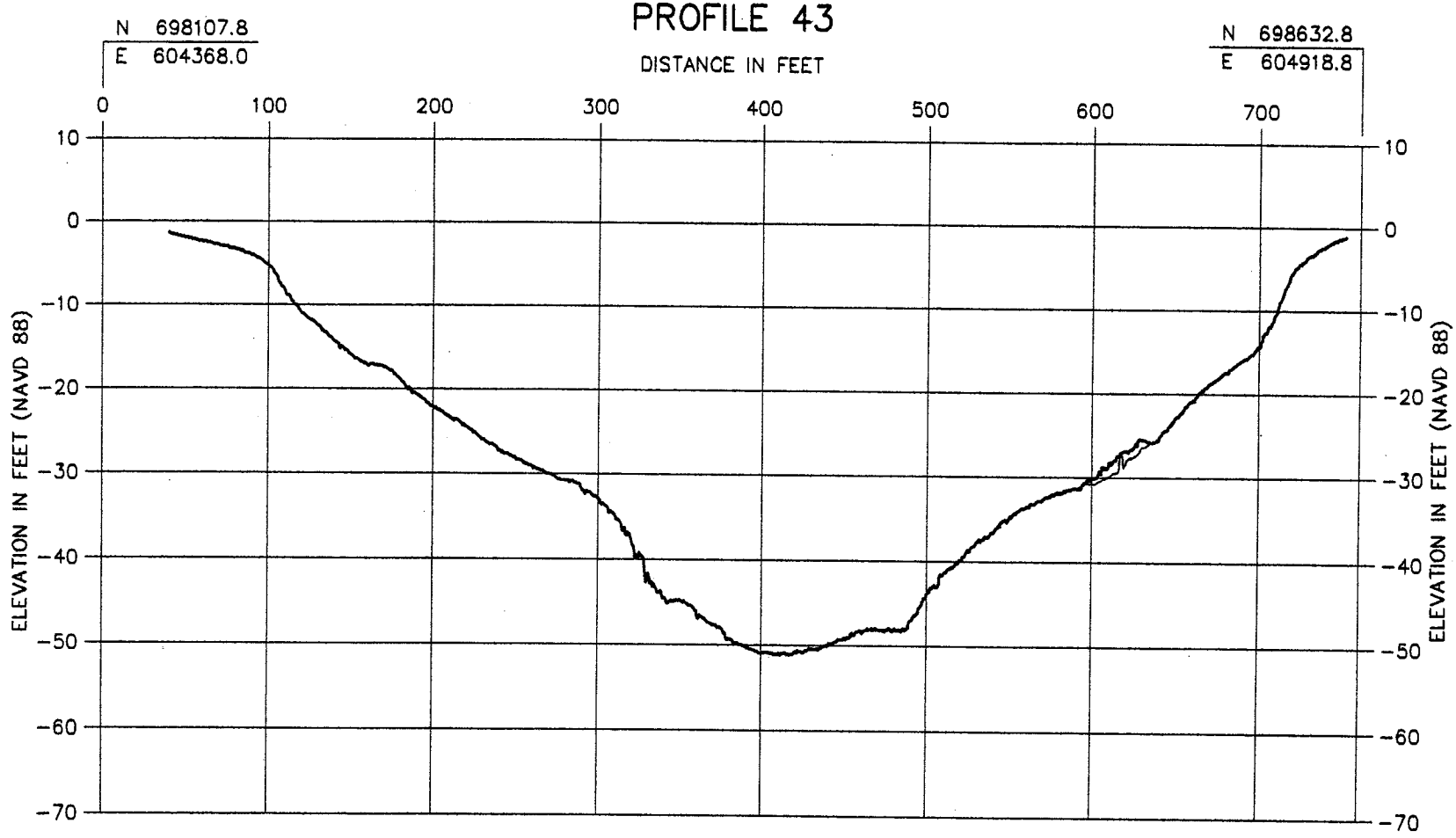
PROFILE 42



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 43

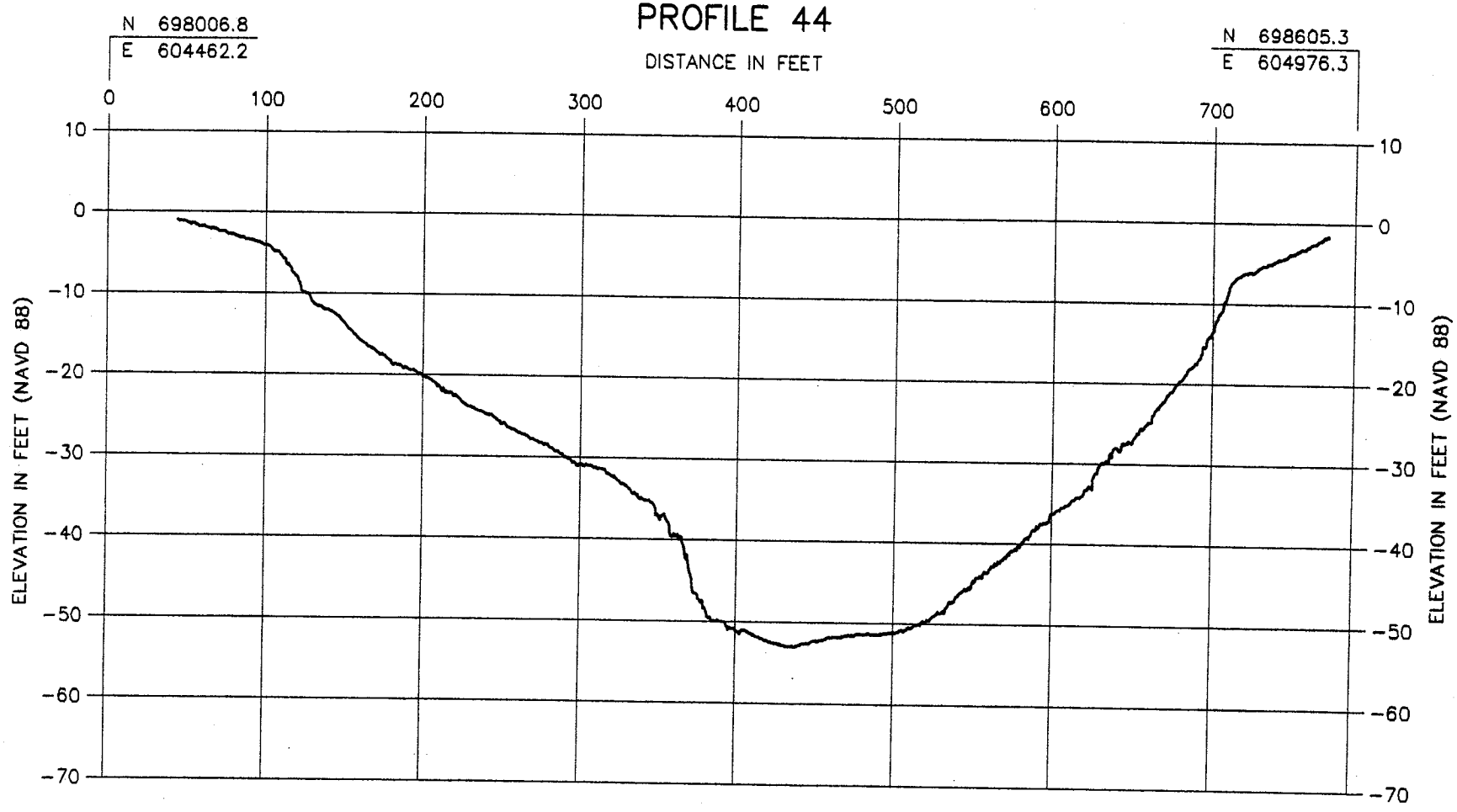


LEGEND:

——— 200 kHz FREQUENCY

——— 24 kHz FREQUENCY

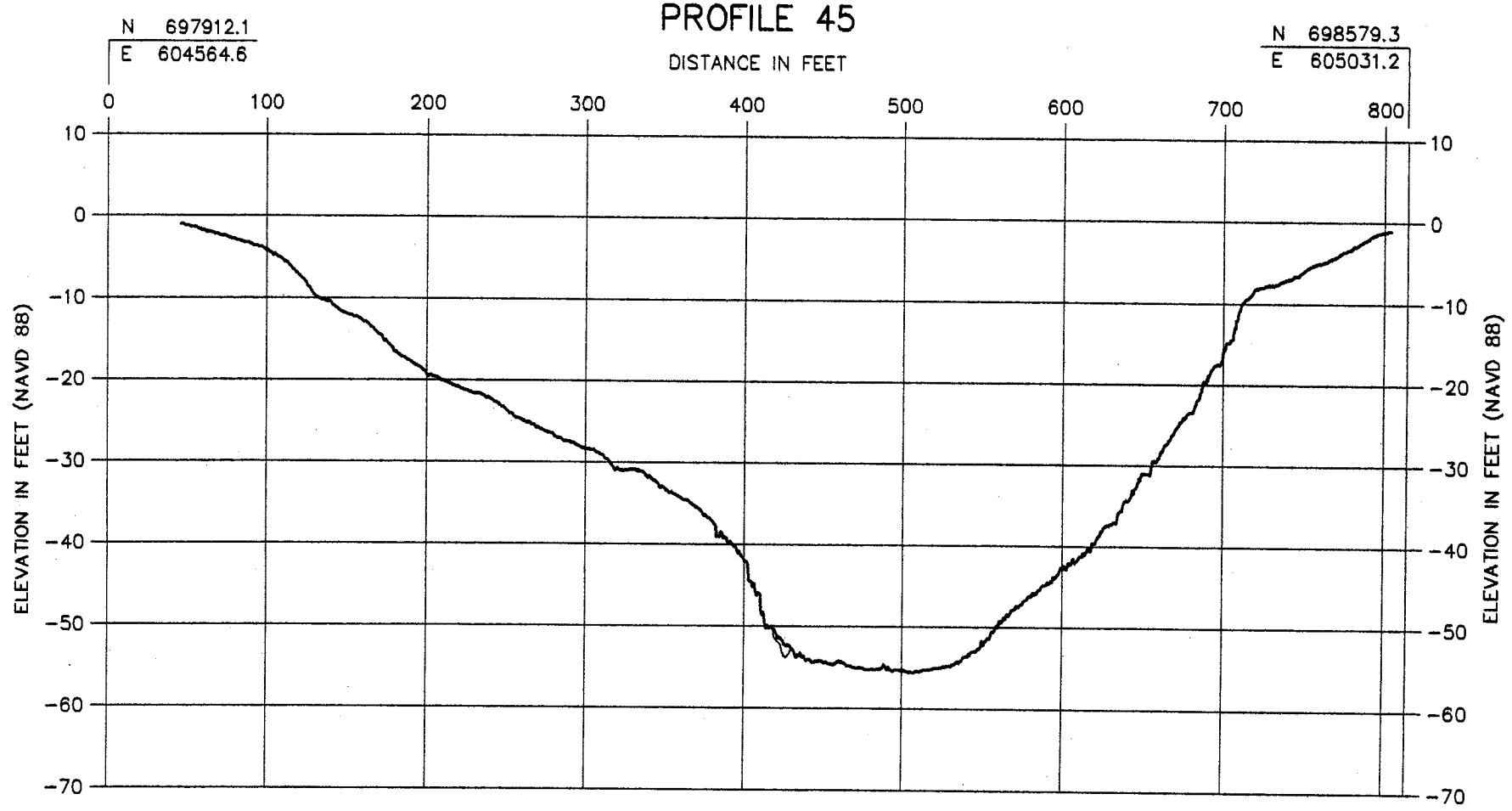
PROFILE 44



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 45

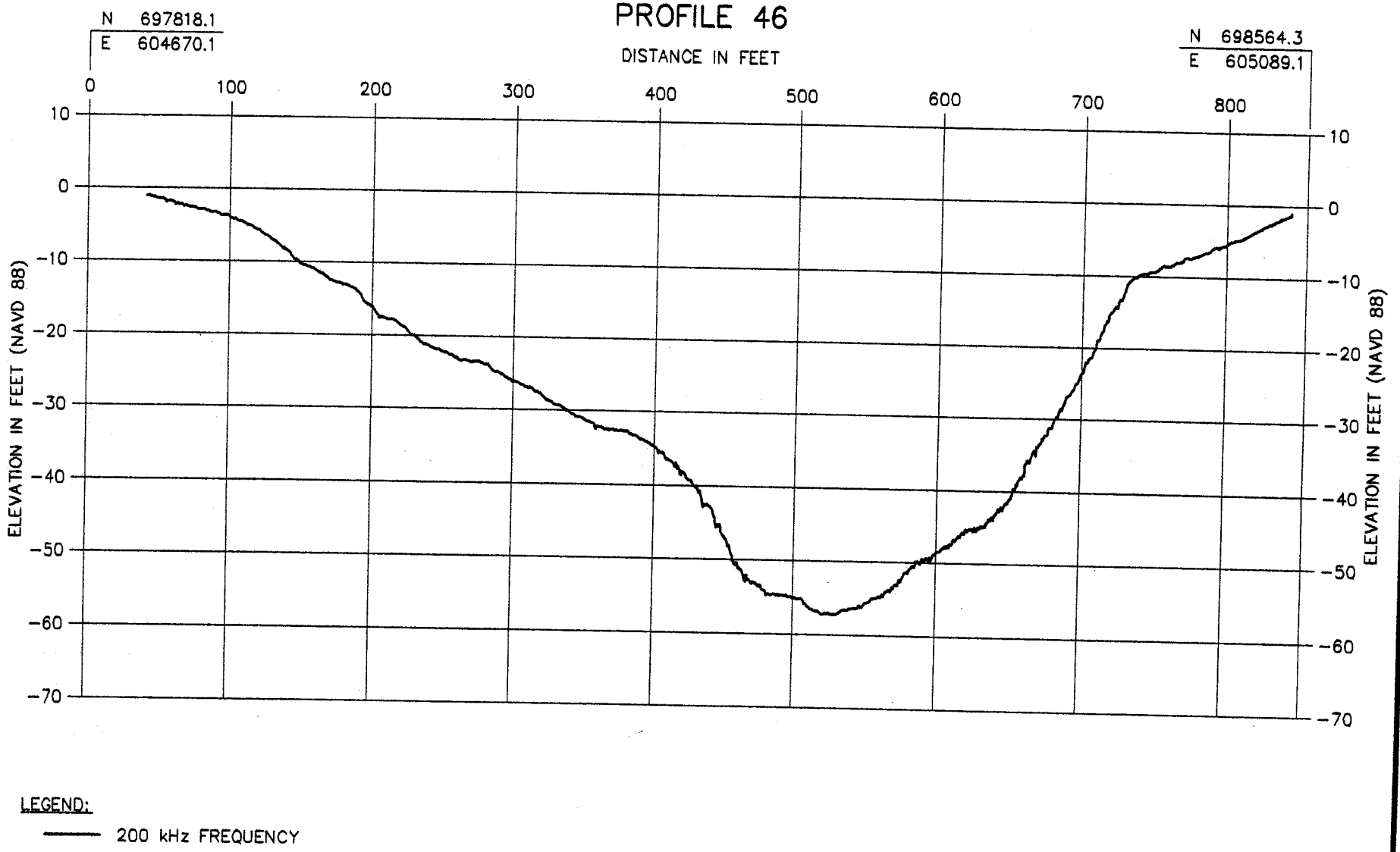


LEGEND:

——— 200 kHz FREQUENCY

——— 24 kHz FREQUENCY

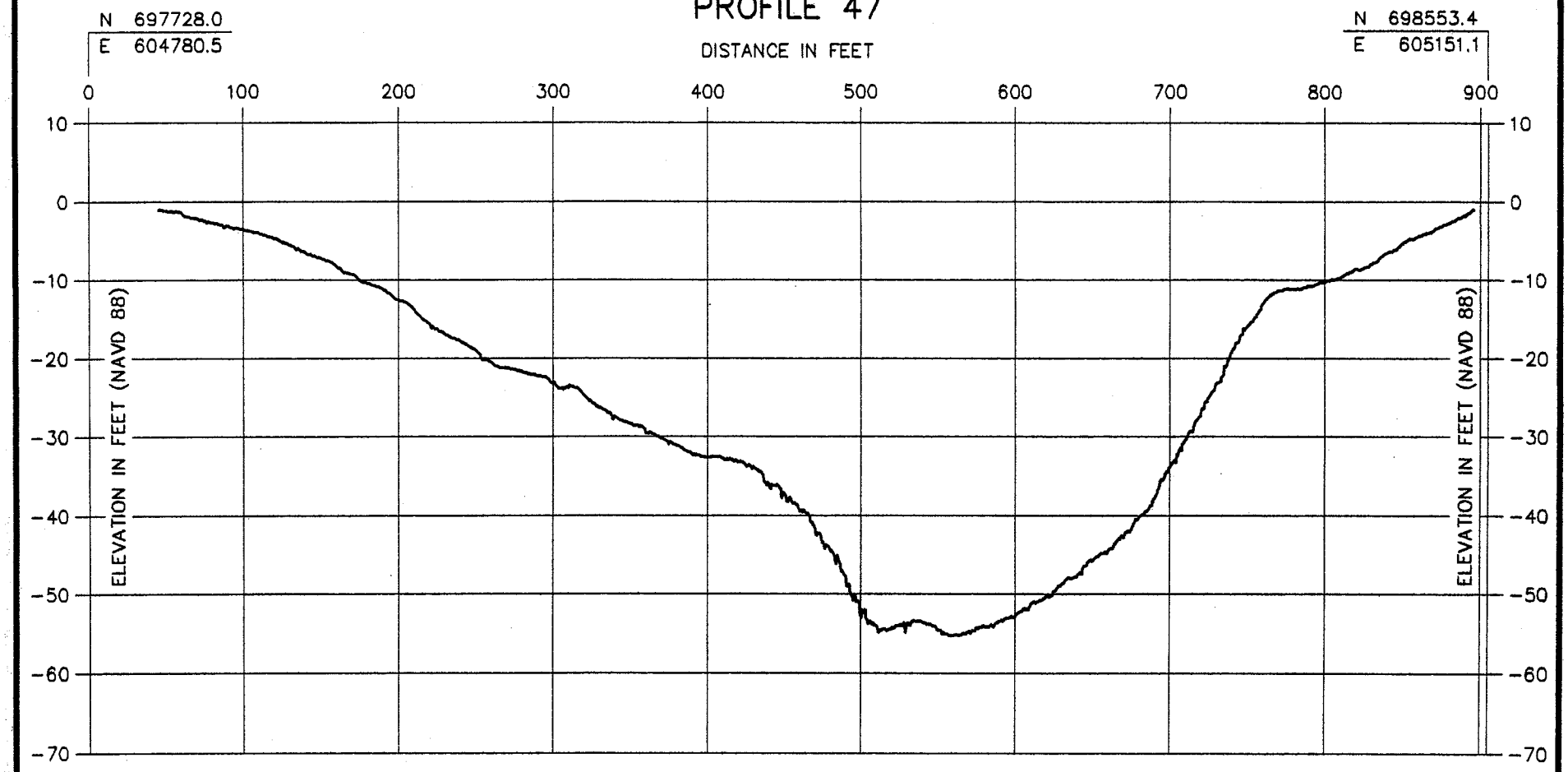
PROFILE 46



LEGEND:

——— 200 kHz FREQUENCY

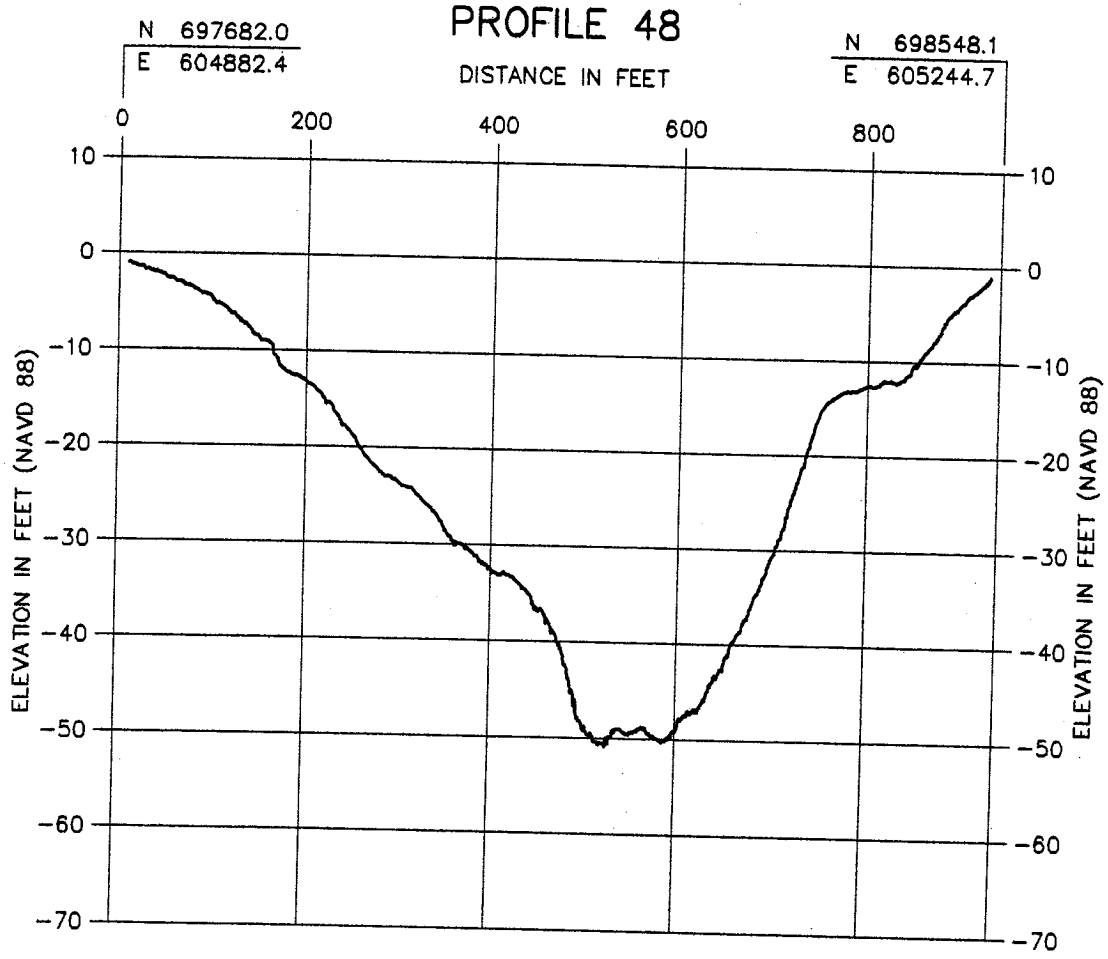
PROFILE 47



LEGEND:

——— 200 kHz FREQUENCY

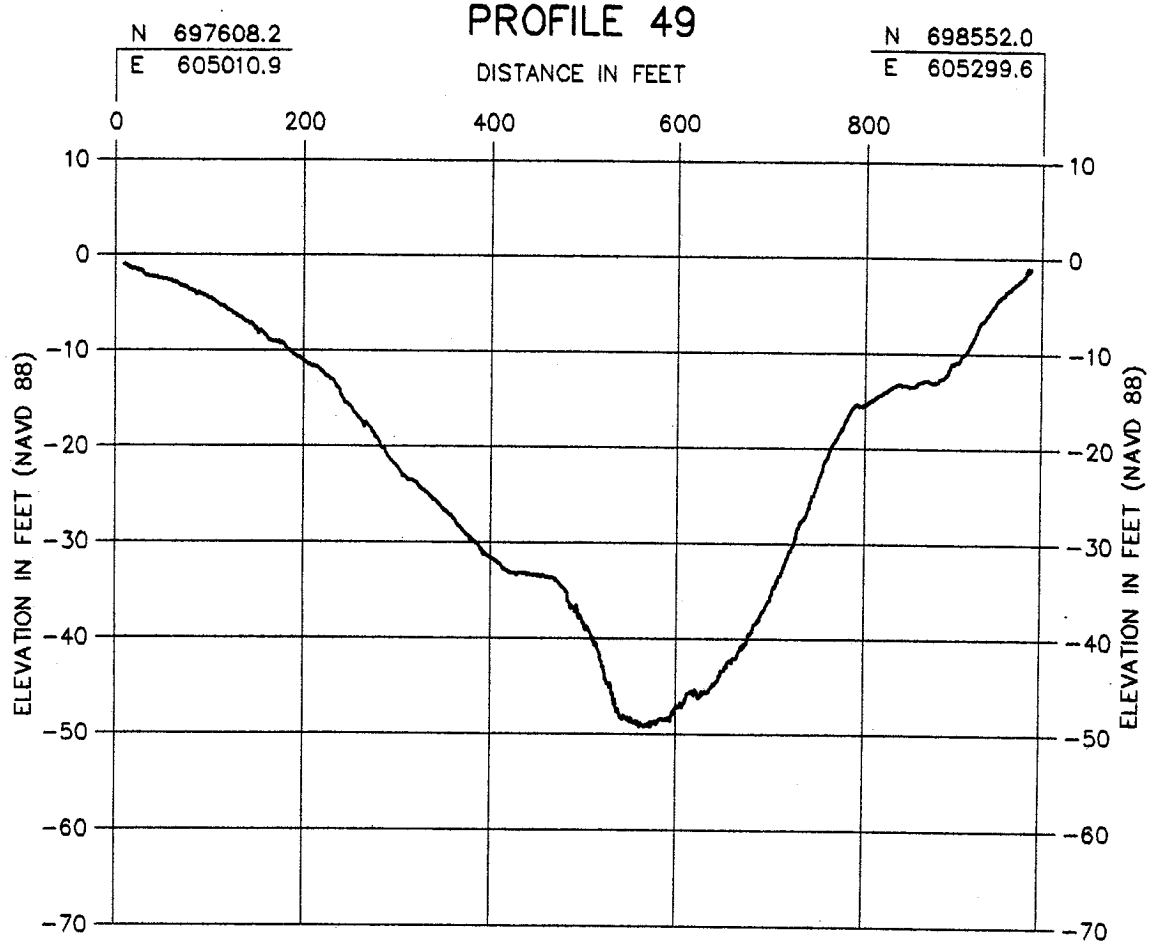
PROFILE 48



LEGEND:

——— 200 kHz FREQUENCY

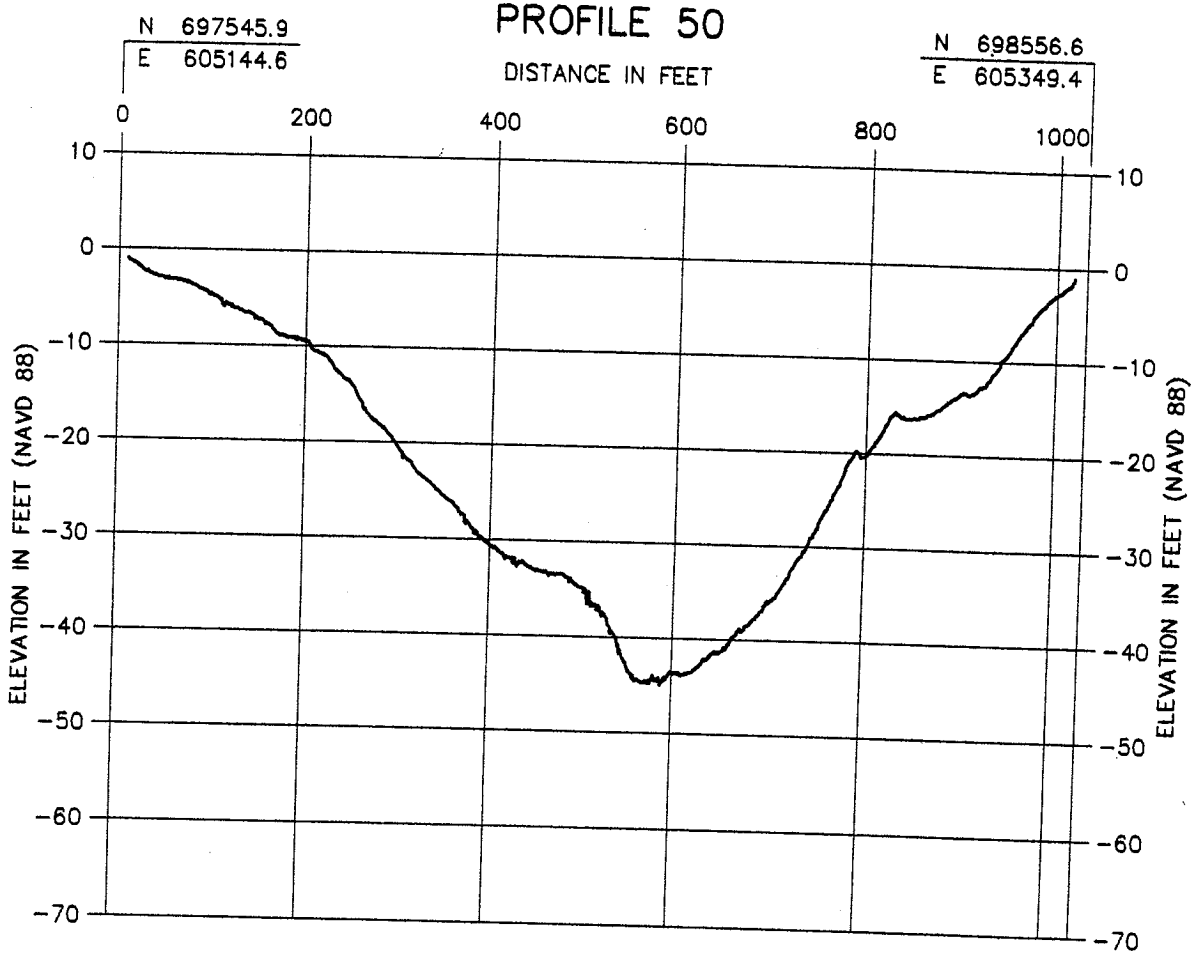
PROFILE 49



LEGEND:

——— 200 kHz FREQUENCY

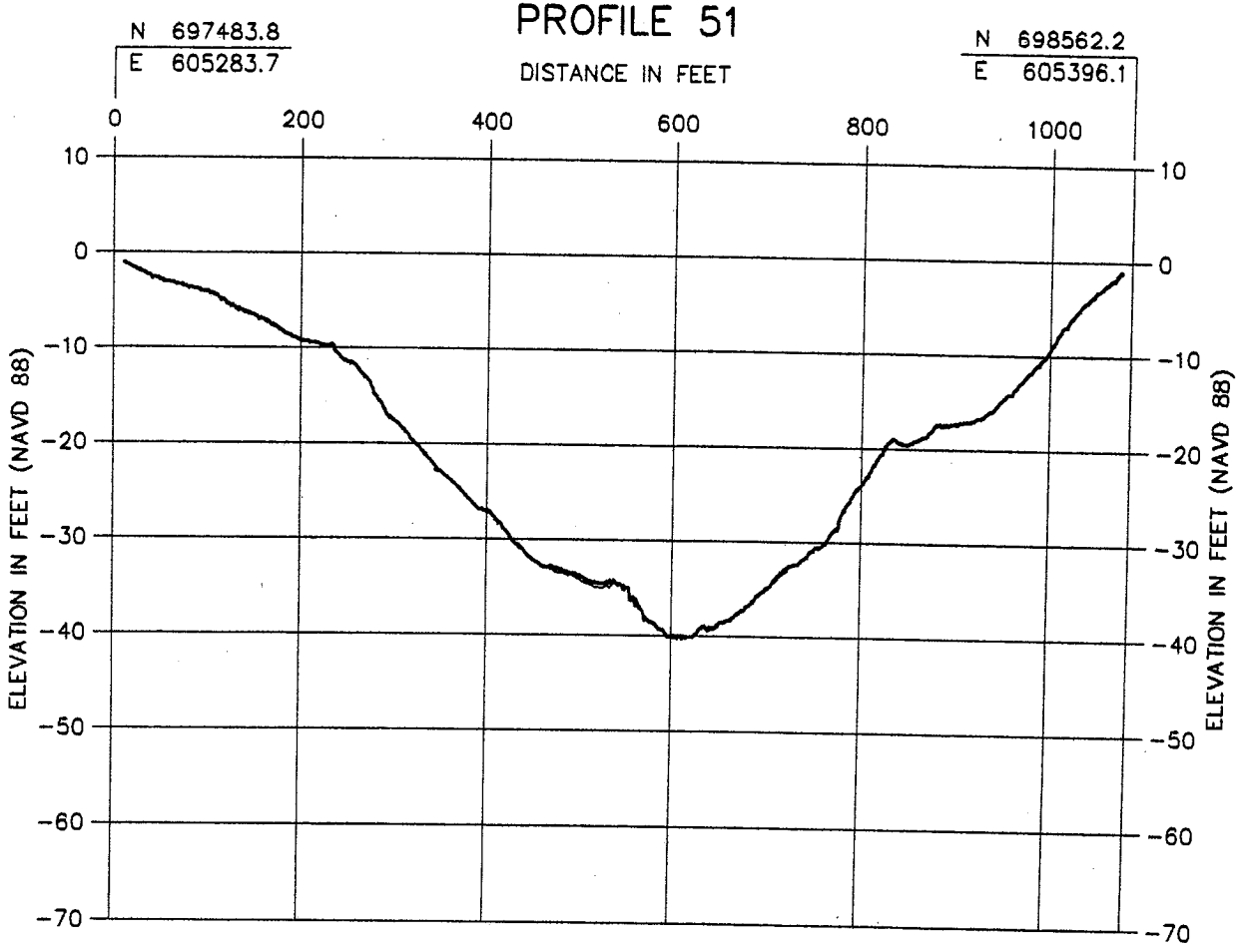
PROFILE 50



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 51

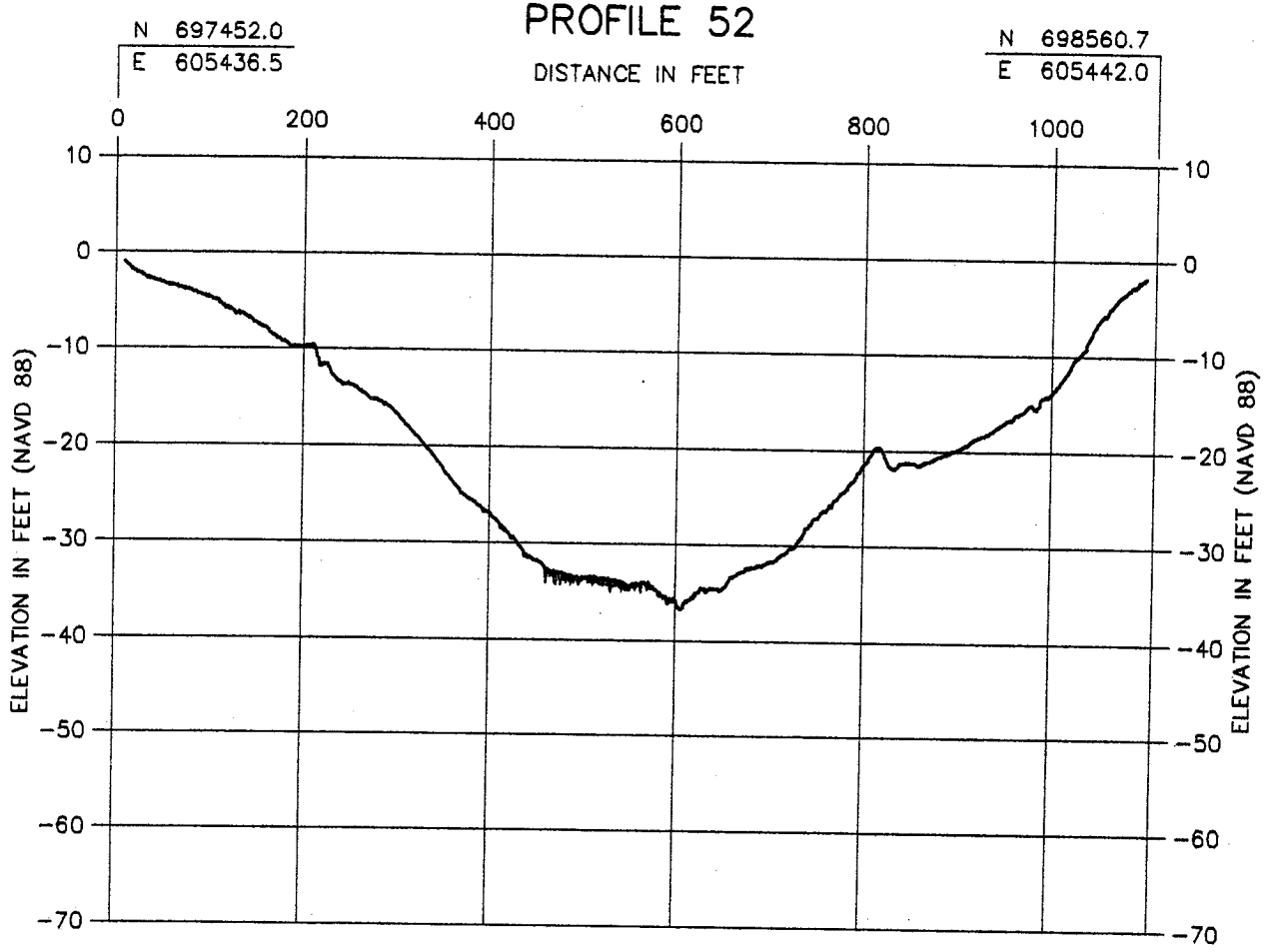


LEGEND:

——— 200 kHz FREQUENCY

——— 24 kHz FREQUENCY

PROFILE 52

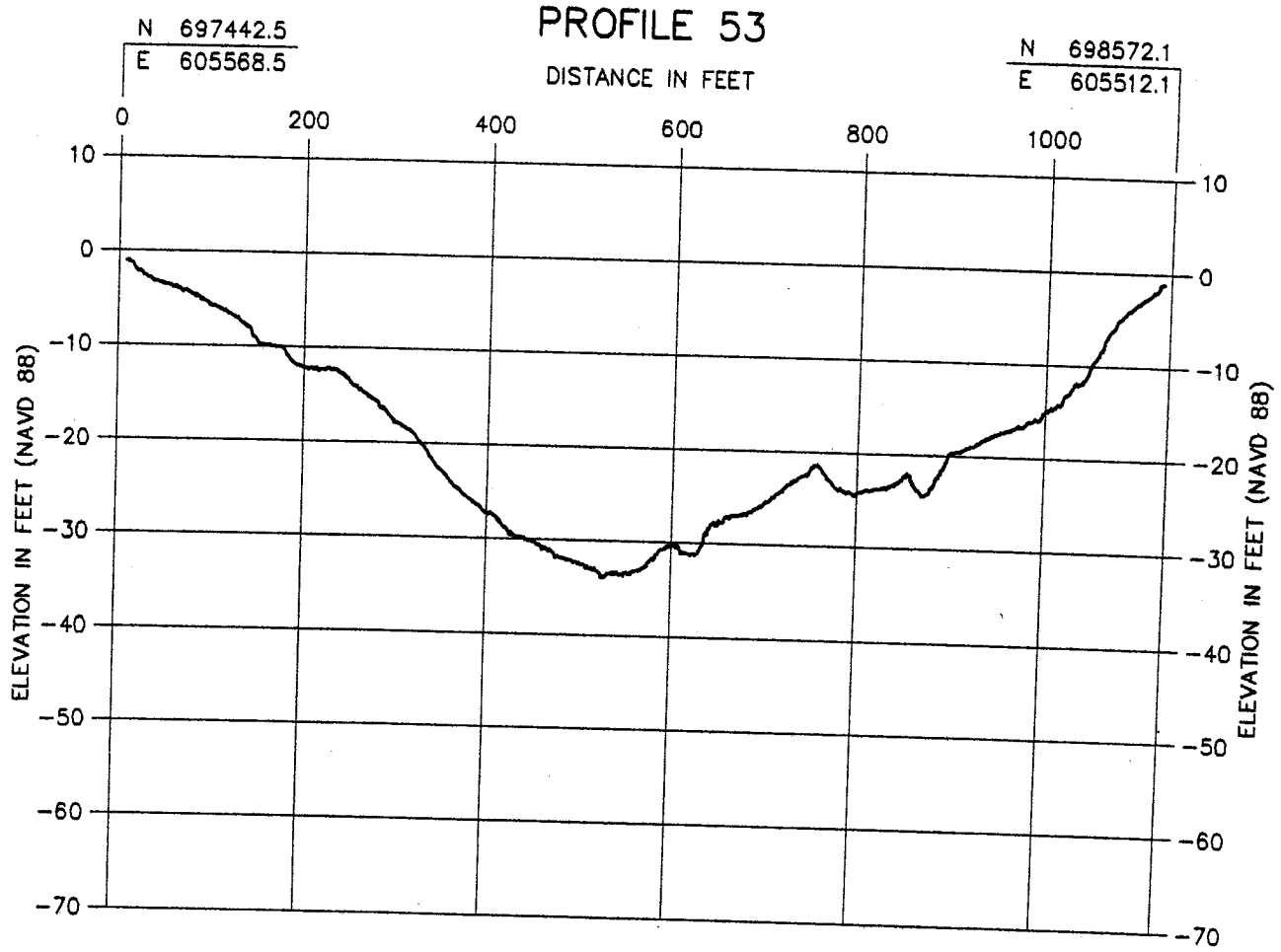


LEGEND:

200 kHz FREQUENCY

24 kHz FREQUENCY

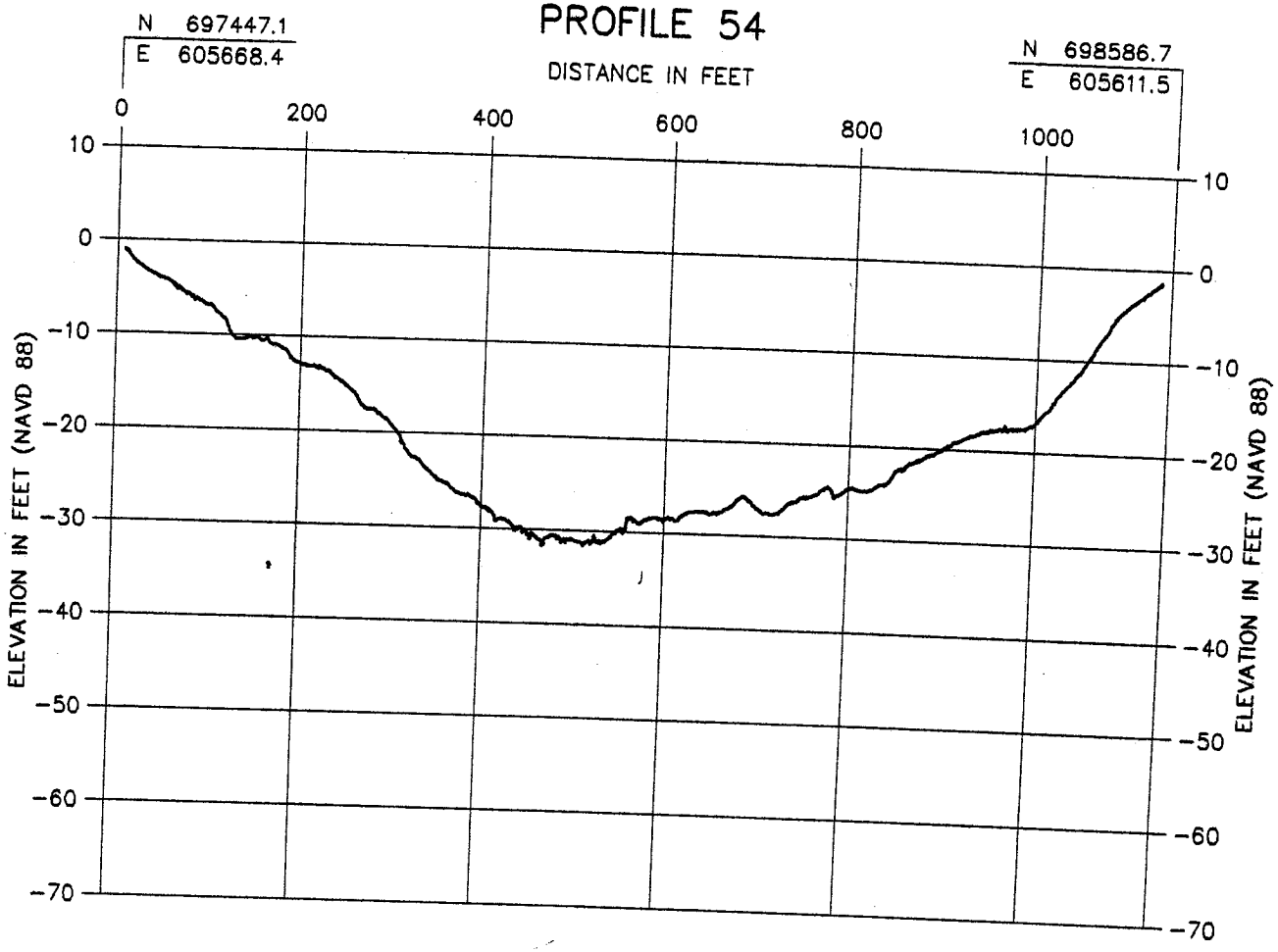
PROFILE 53



LEGEND:

——— 200 kHz FREQUENCY

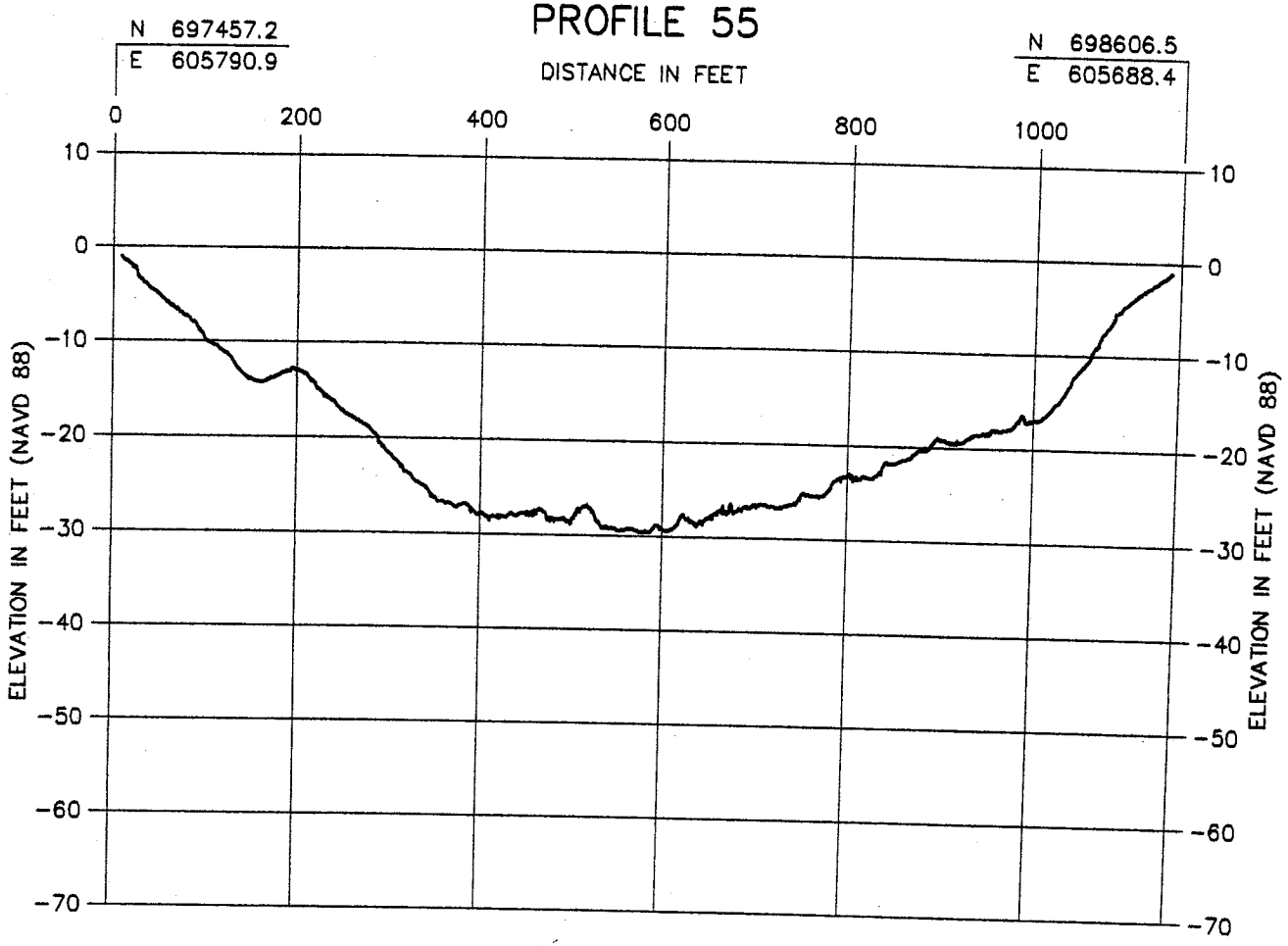
PROFILE 54



LEGEND:

——— 200 kHz FREQUENCY

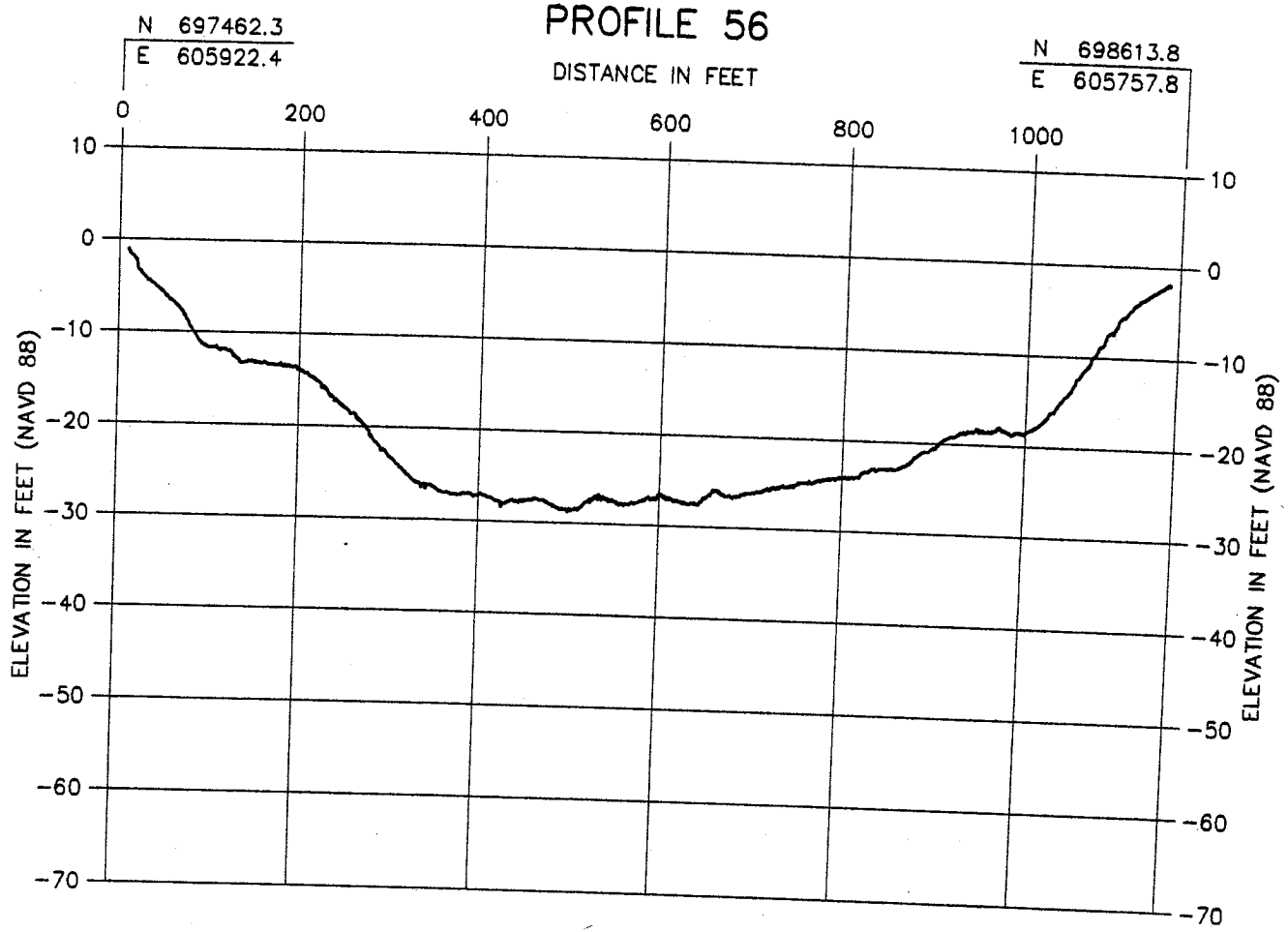
PROFILE 55



LEGEND:

——— 200 kHz FREQUENCY

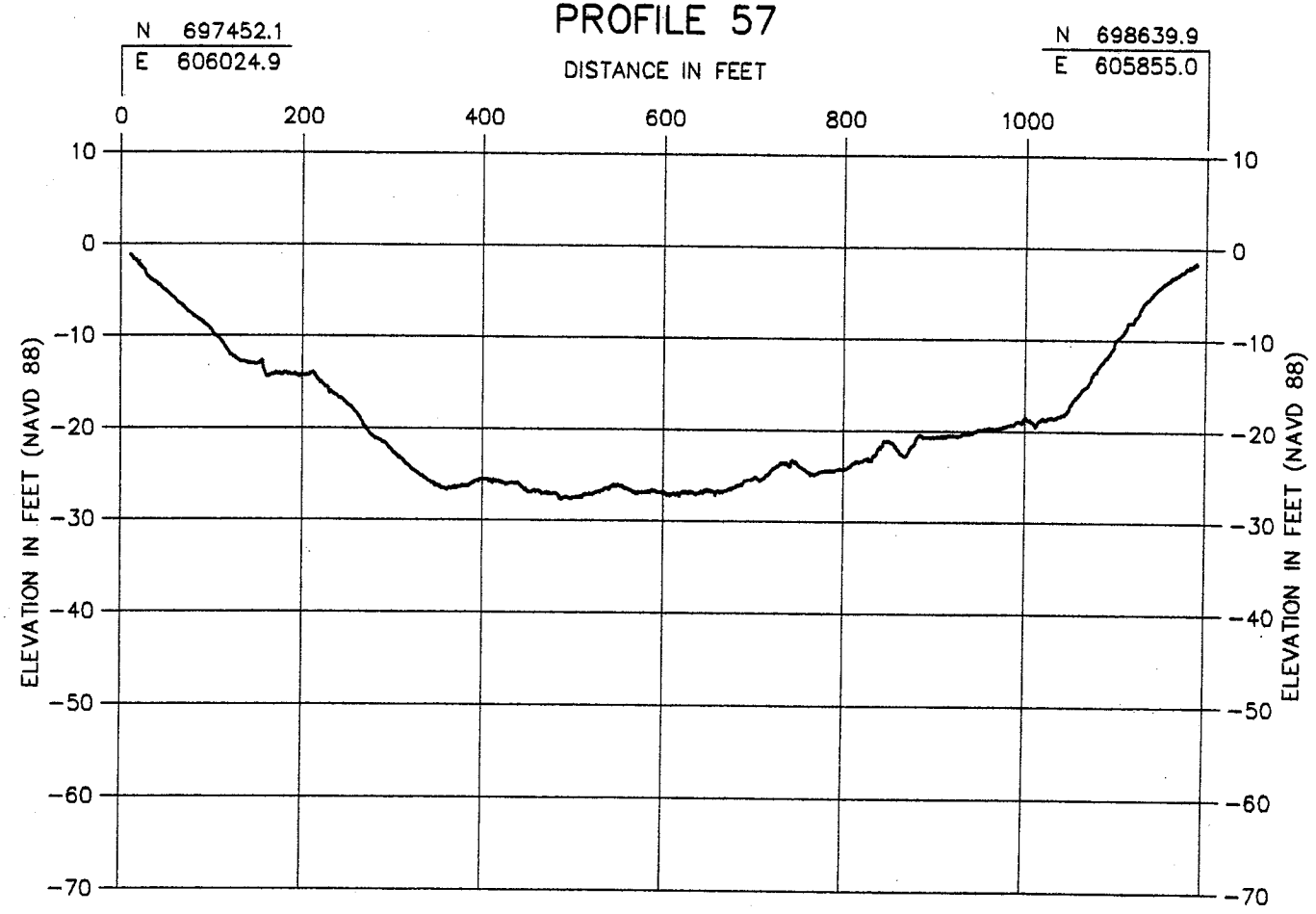
PROFILE 56



LEGEND:

——— 200 kHz FREQUENCY

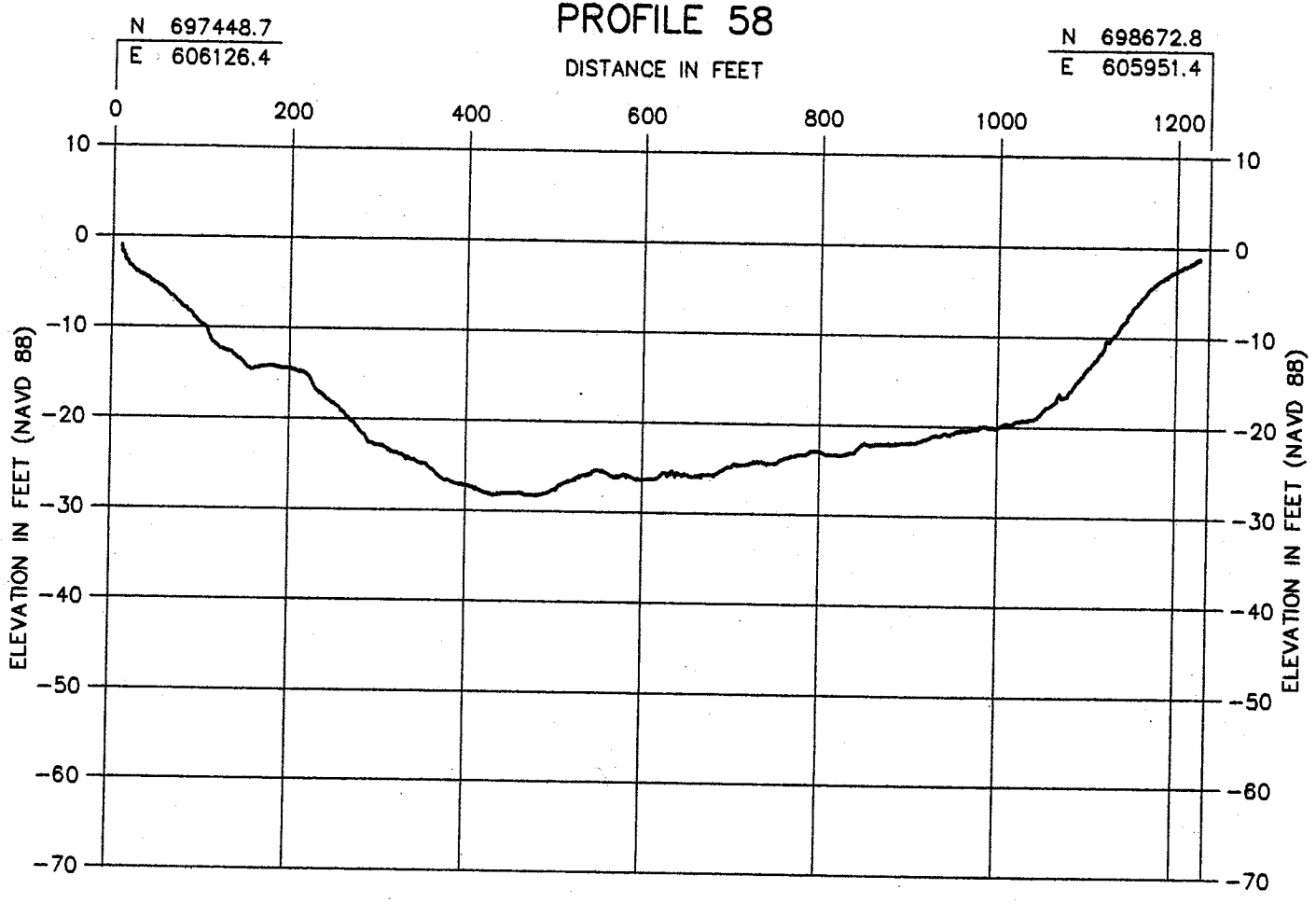
PROFILE 57



LEGEND:

——— 200 kHz FREQUENCY

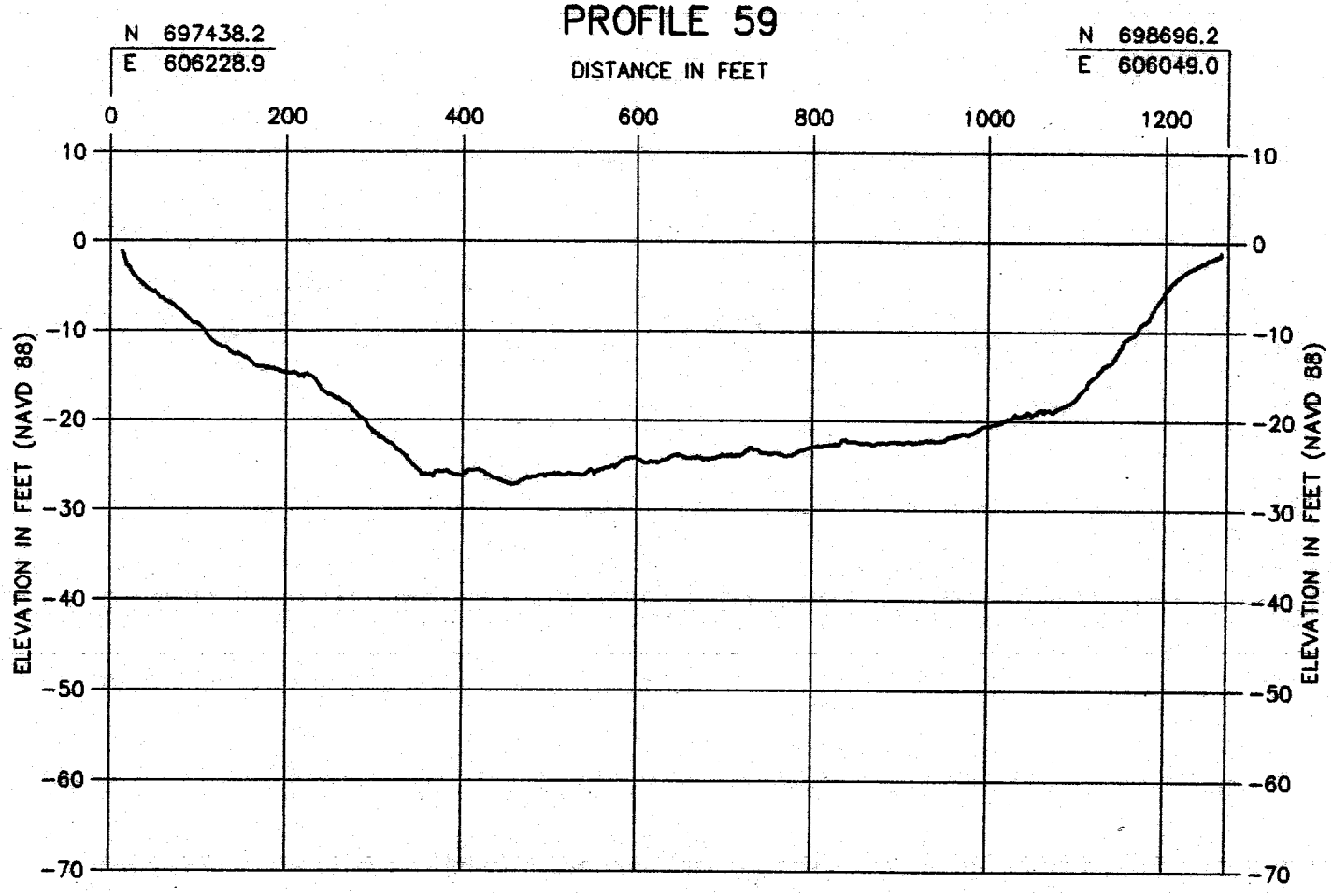
PROFILE 58



LEGEND:

——— 200 kHz FREQUENCY

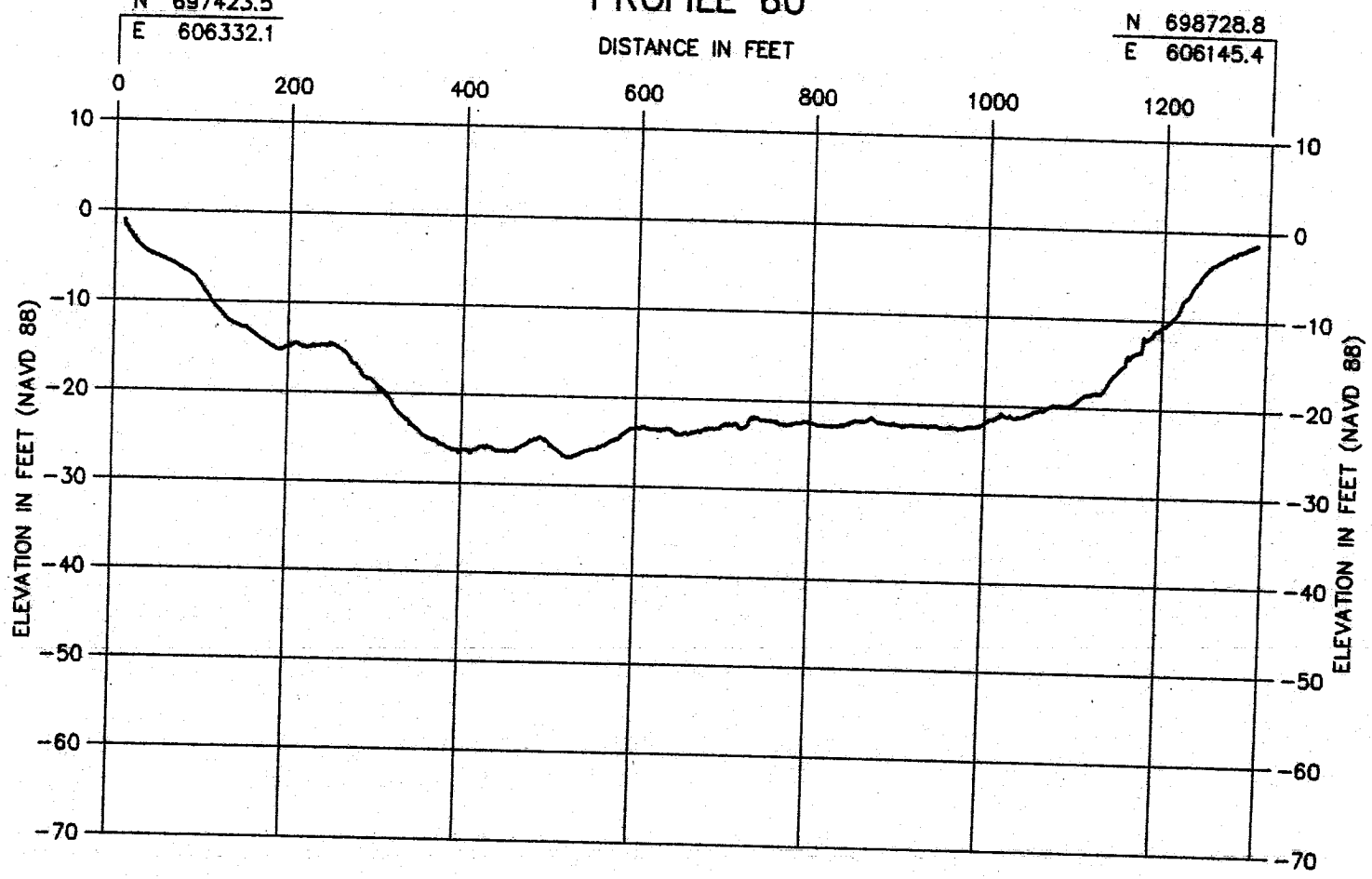
PROFILE 59



LEGEND:

——— 200 kHz FREQUENCY

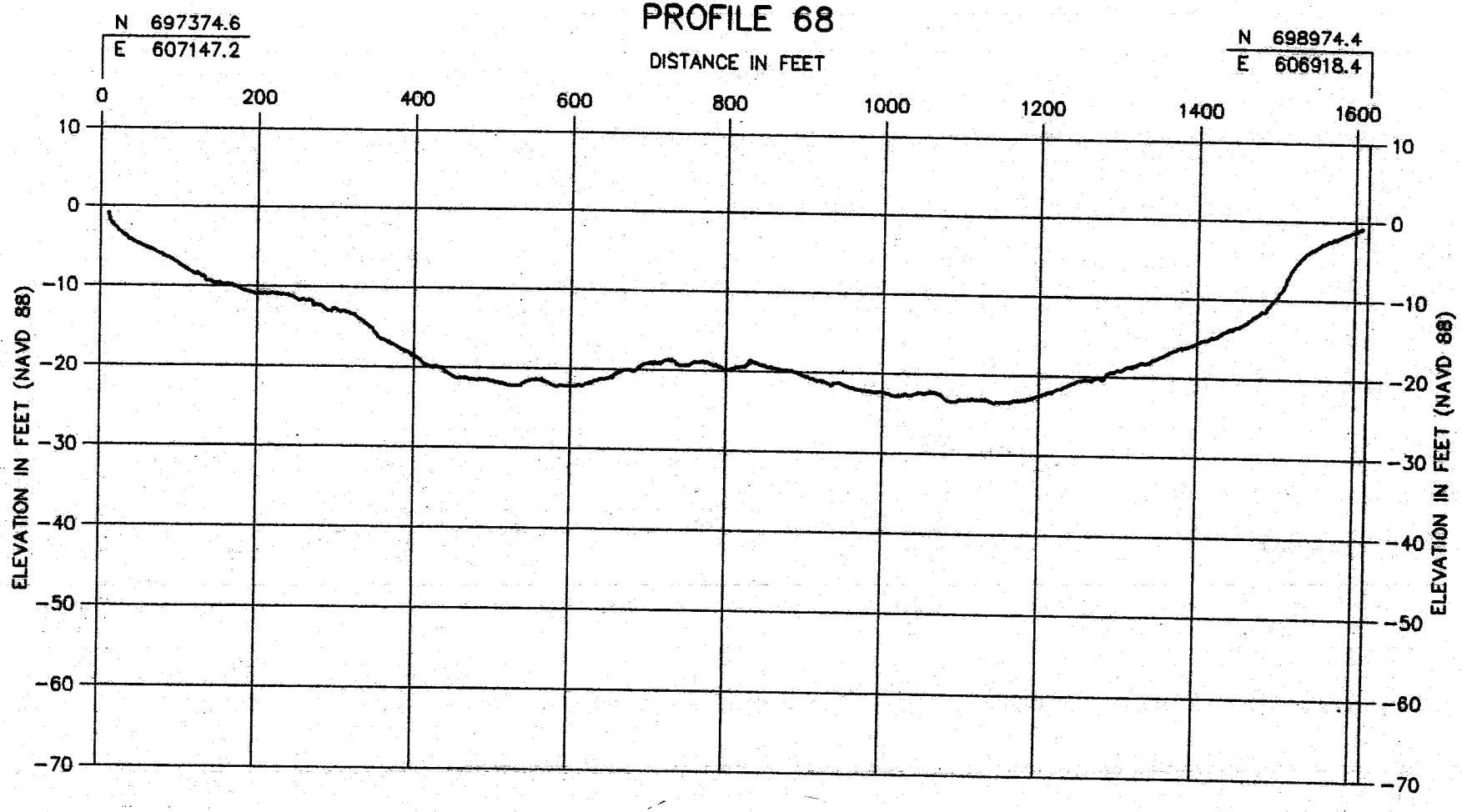
PROFILE 60



LEGEND:

——— 200 kHz FREQUENCY

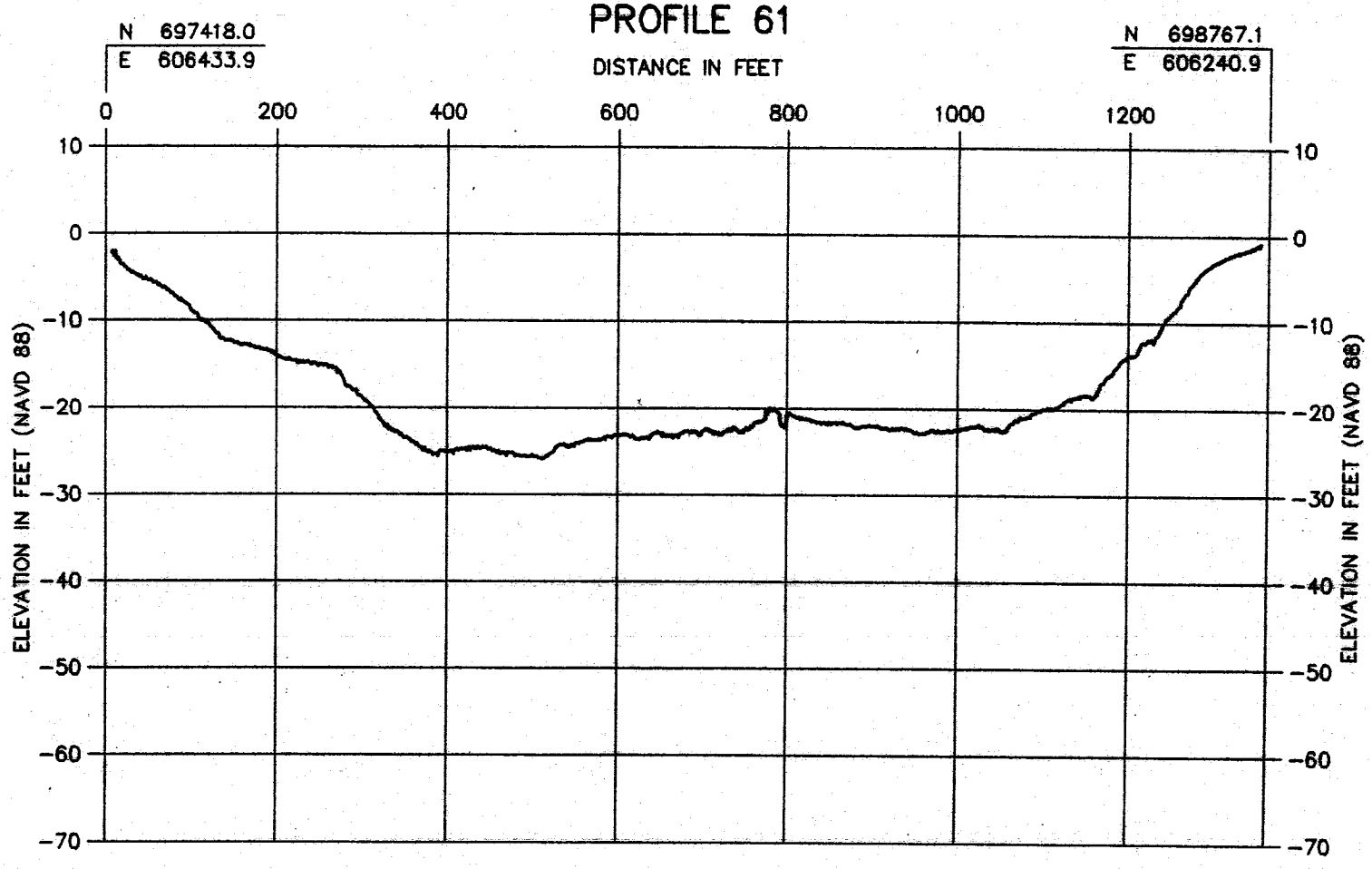
PROFILE 68



LEGEND:

——— 200 kHz FREQUENCY

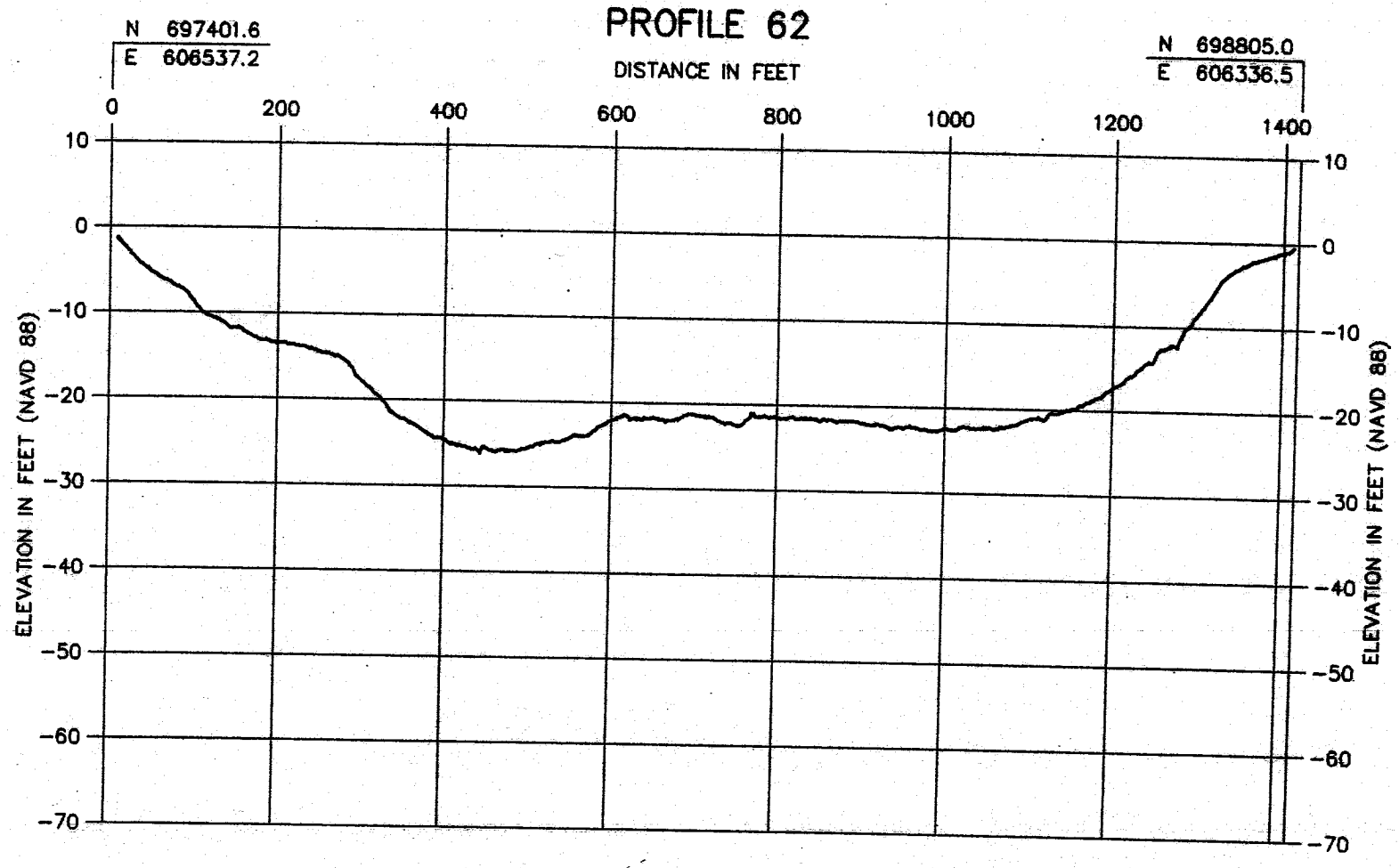
PROFILE 61



LEGEND:

——— 200 kHz FREQUENCY

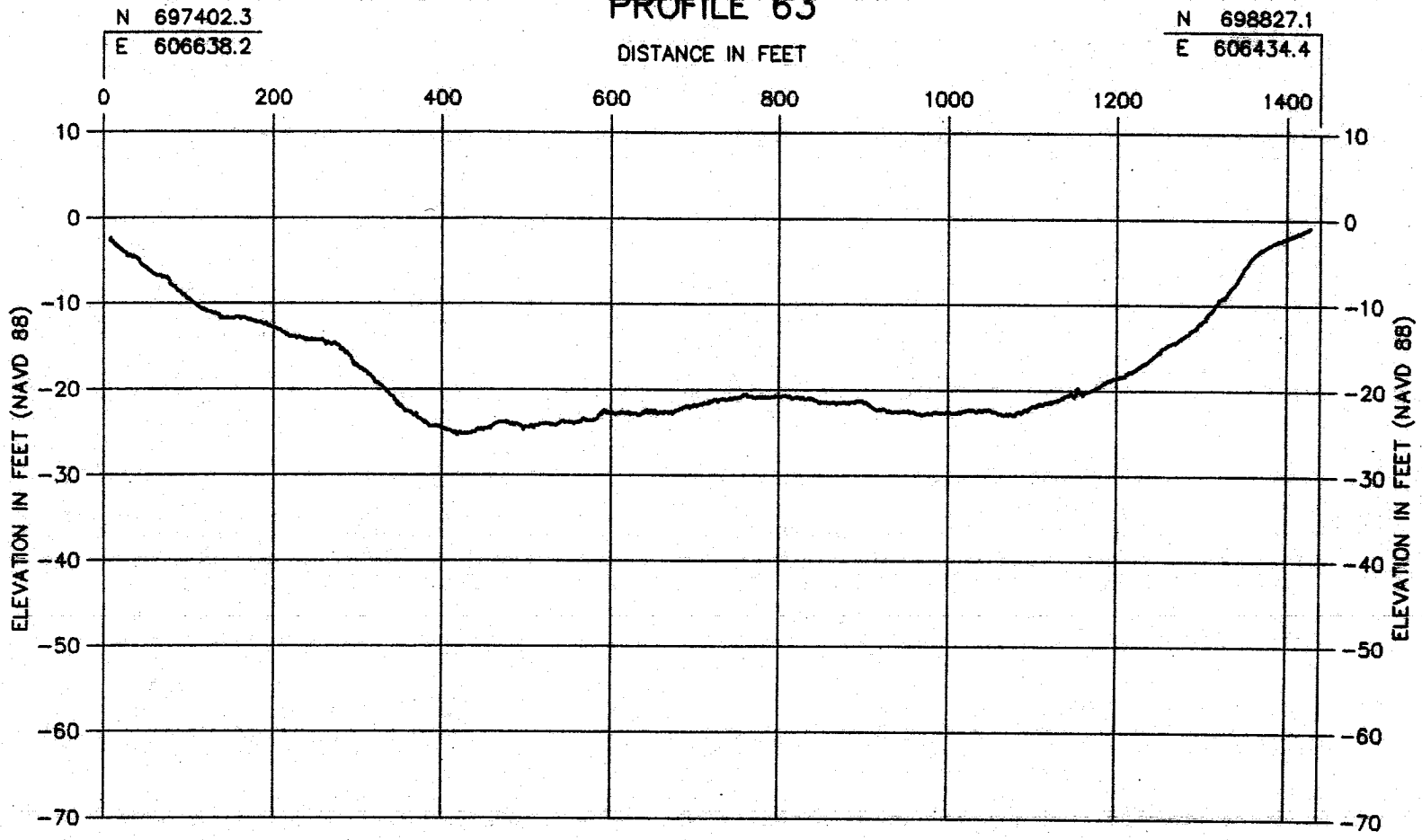
PROFILE 62



LEGEND:

——— 200 kHz FREQUENCY

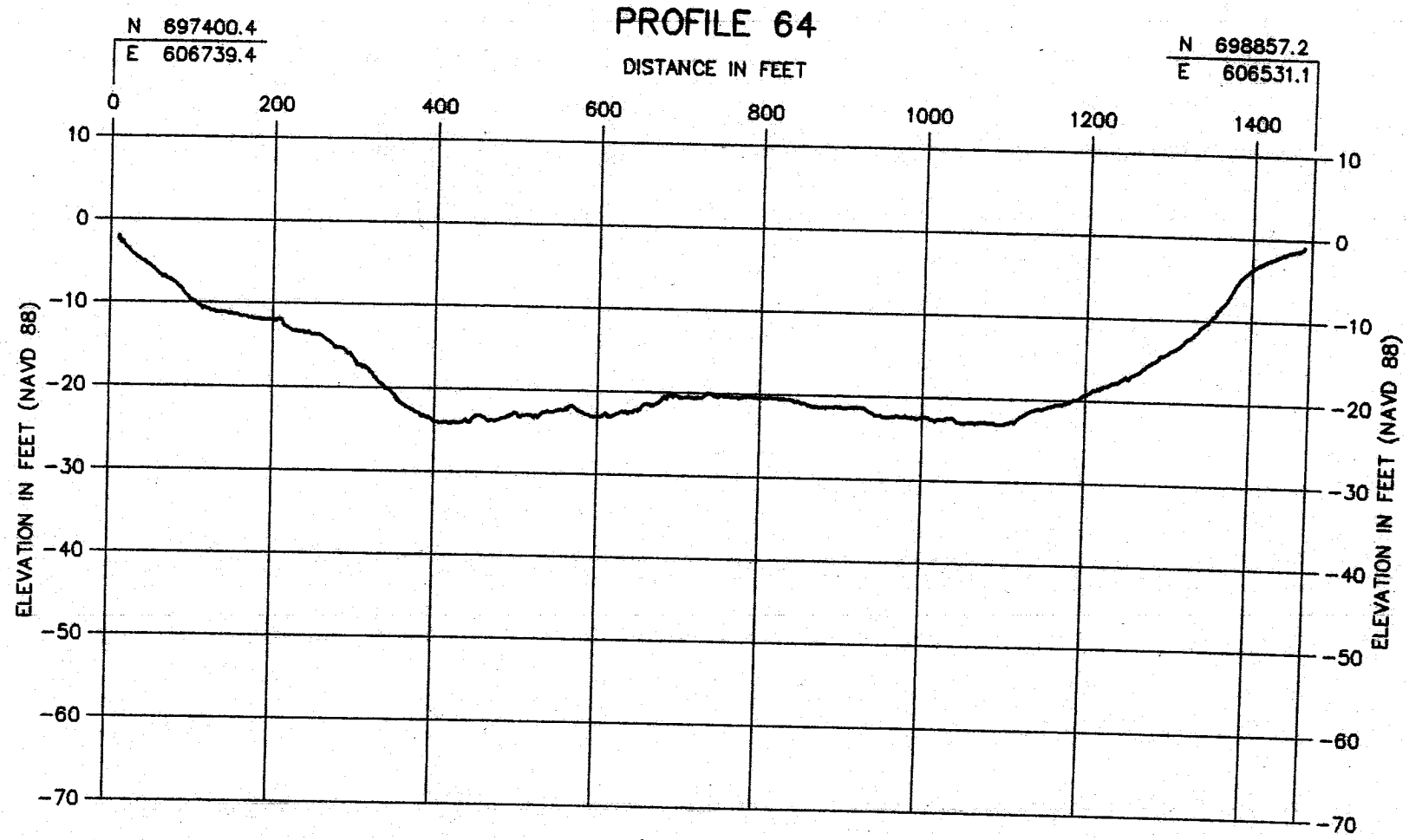
PROFILE 63



LEGEND:

——— 200 kHz FREQUENCY

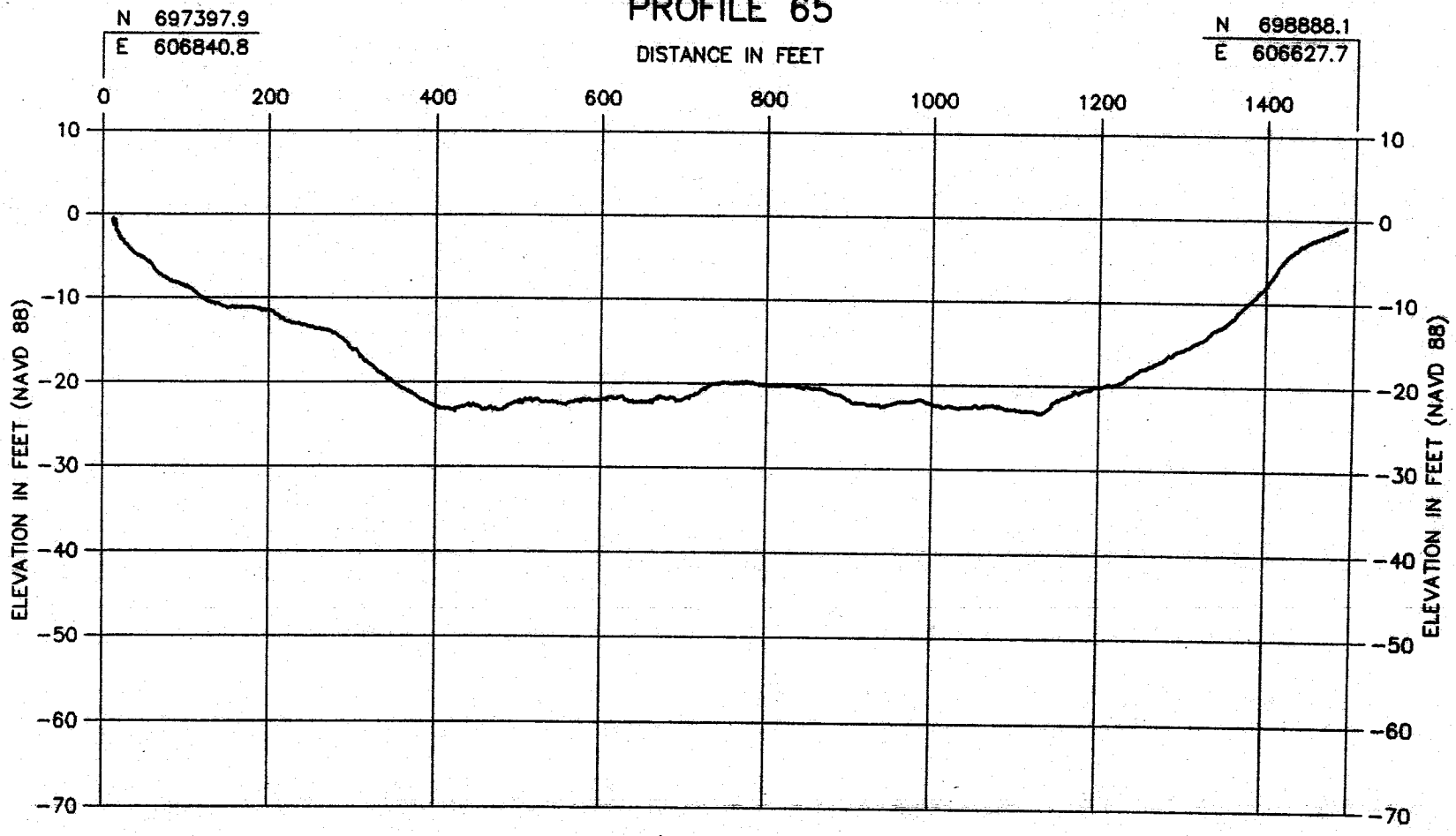
PROFILE 64



LEGEND:

——— 200 kHz FREQUENCY

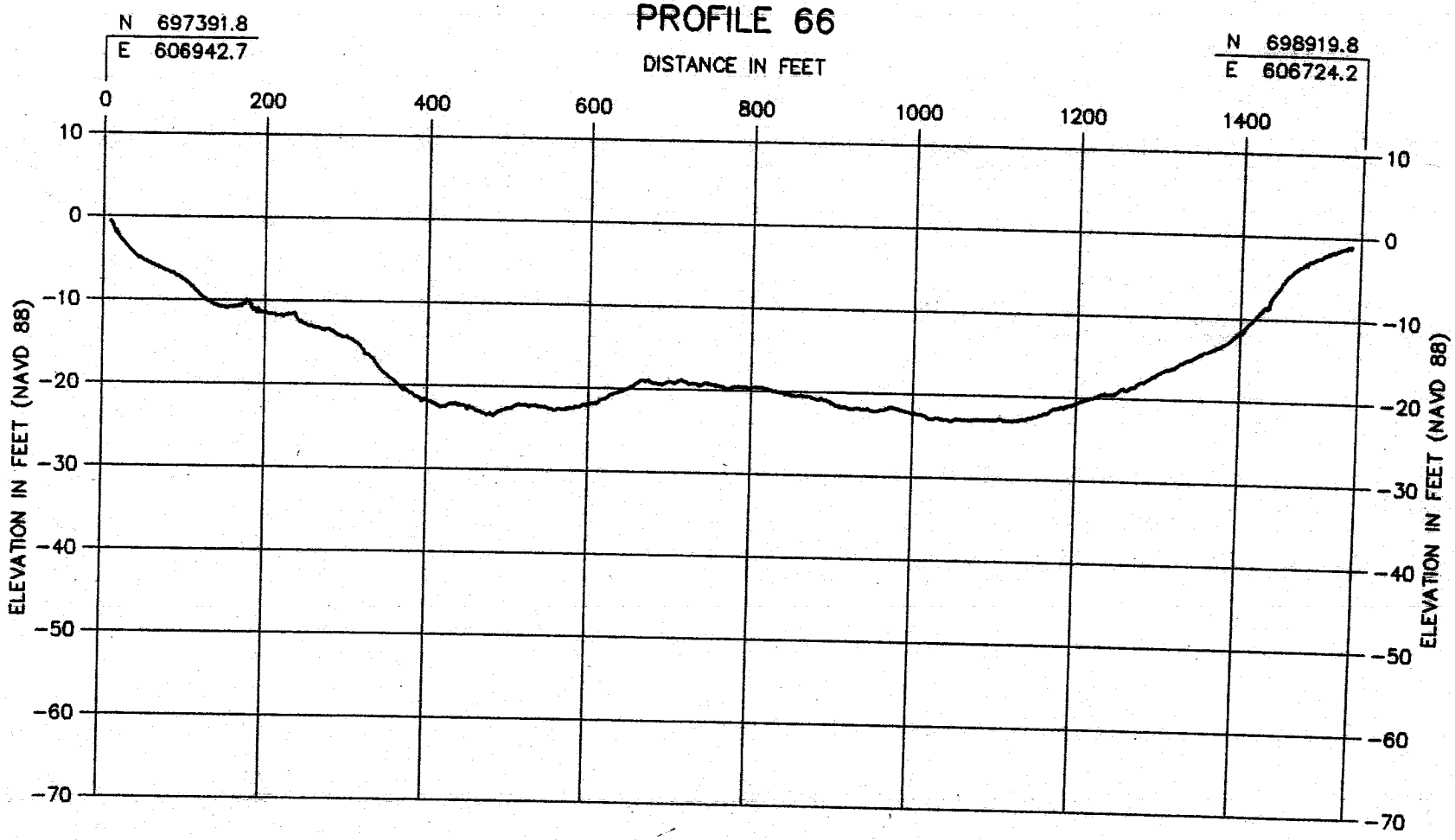
PROFILE 65



LEGEND:

——— 200 kHz FREQUENCY

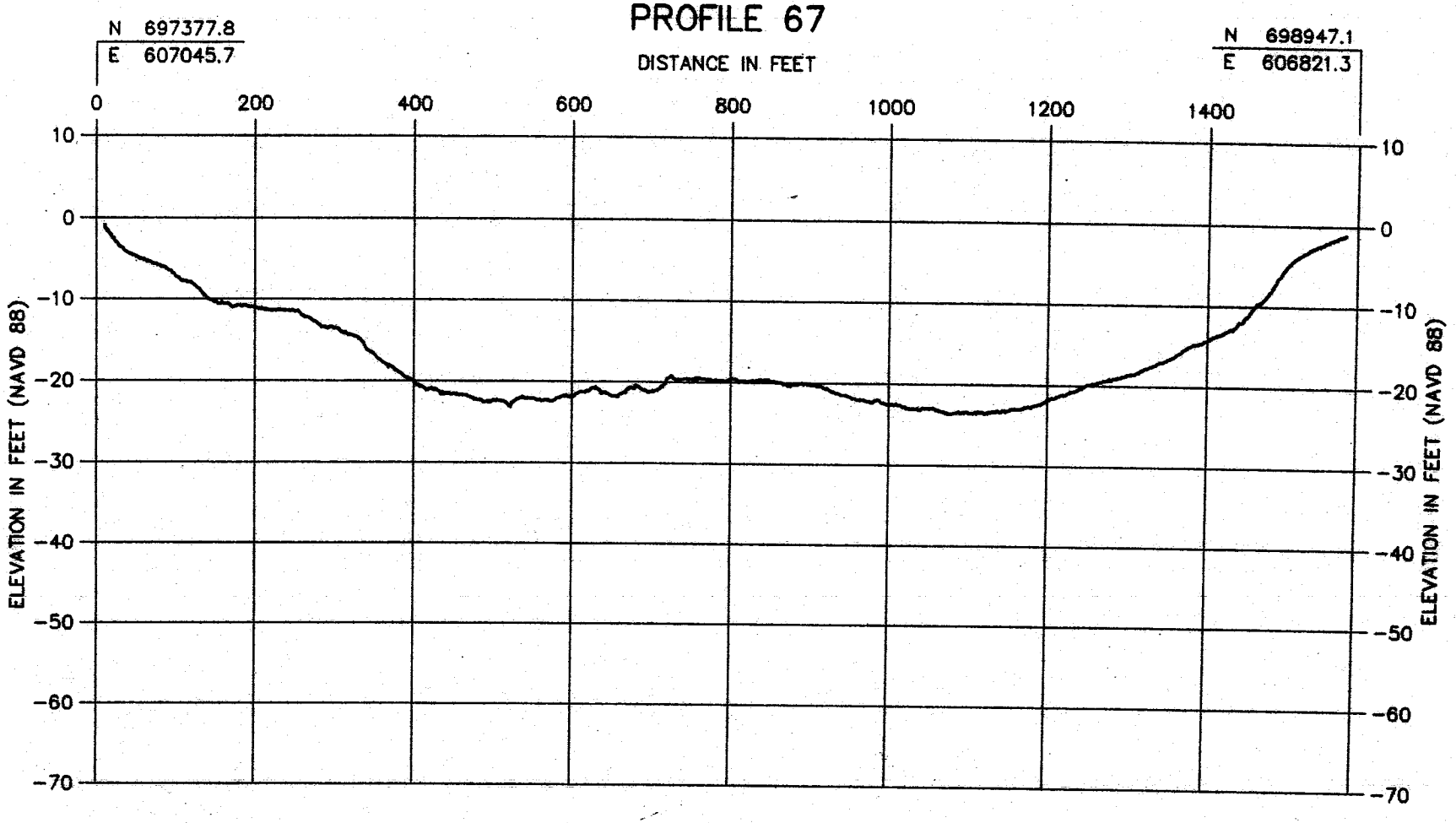
PROFILE 66



LEGEND:

——— 200 kHz FREQUENCY

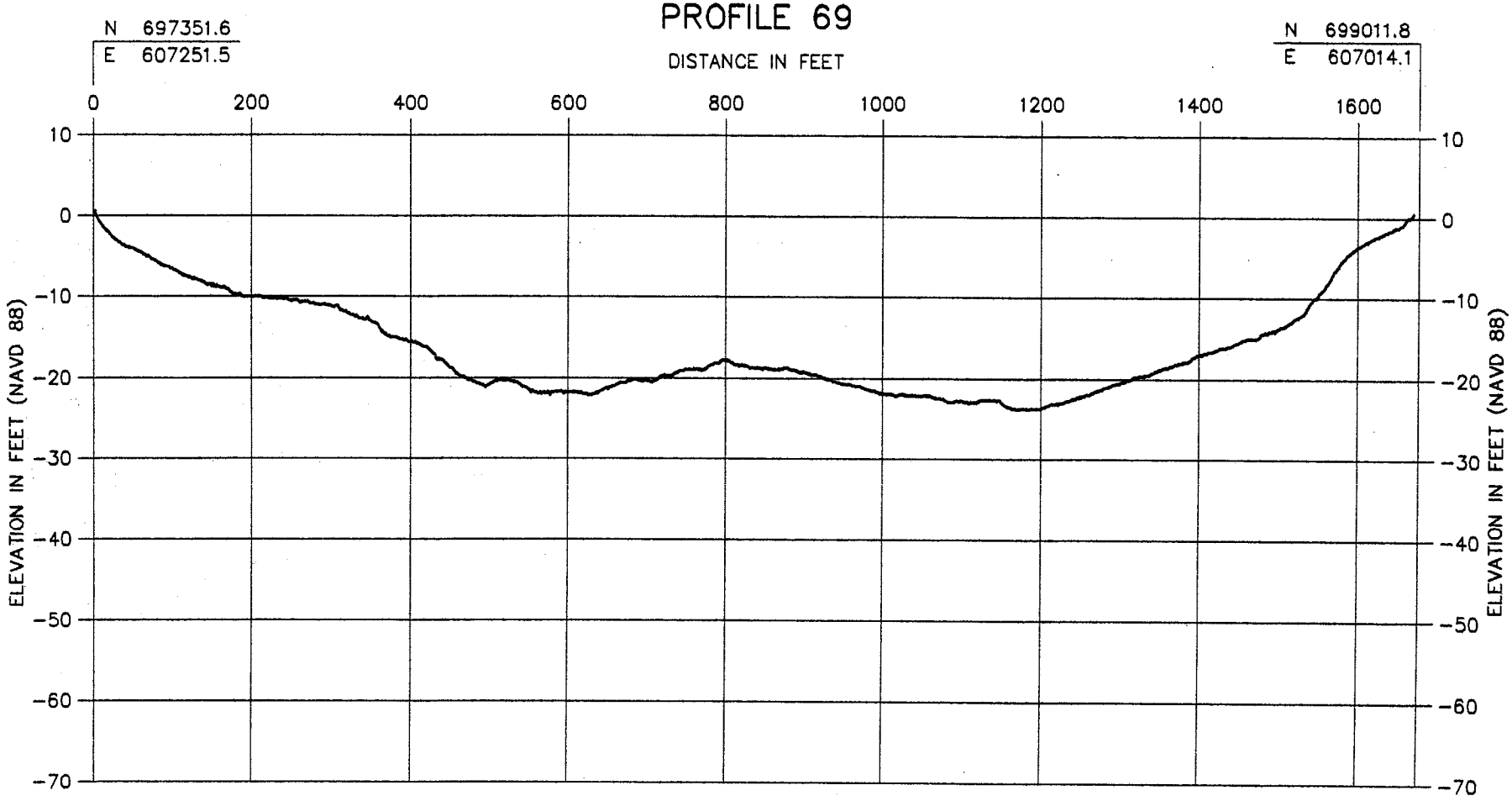
PROFILE 67



LEGEND:

—— 200 kHz FREQUENCY

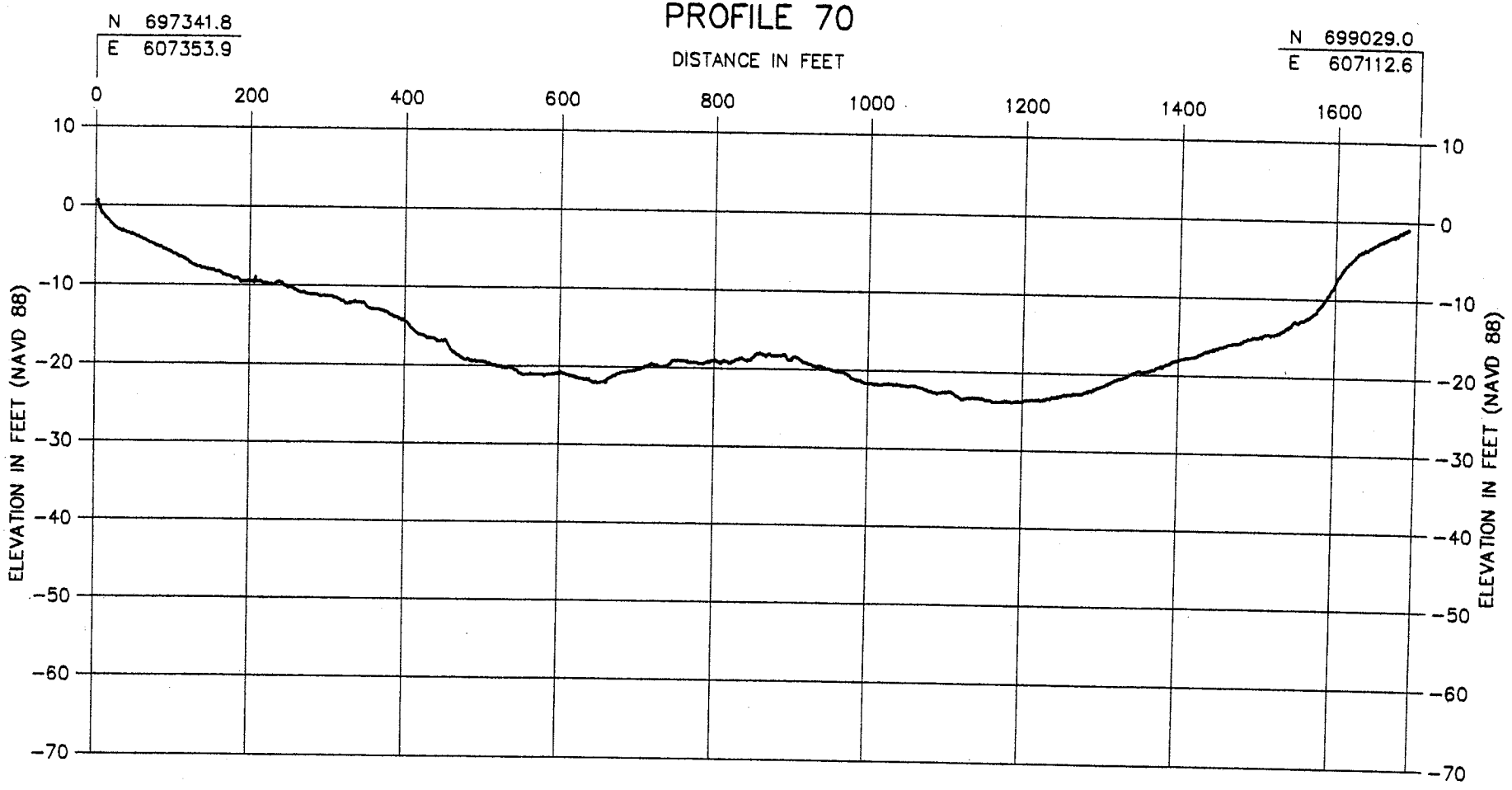
PROFILE 69



LEGEND:

——— 200 kHz FREQUENCY

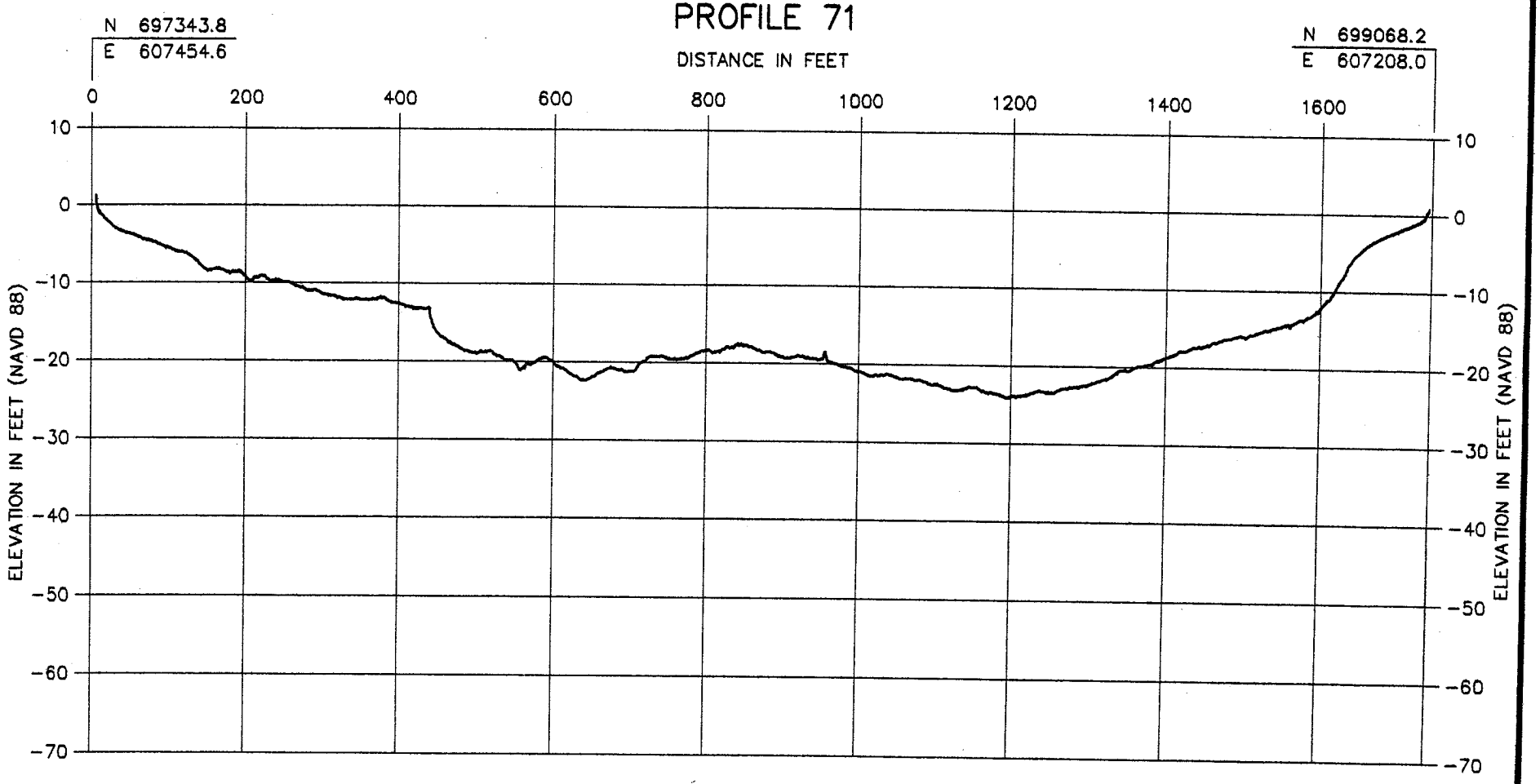
PROFILE 70



LEGEND:

200 kHz FREQUENCY

PROFILE 71



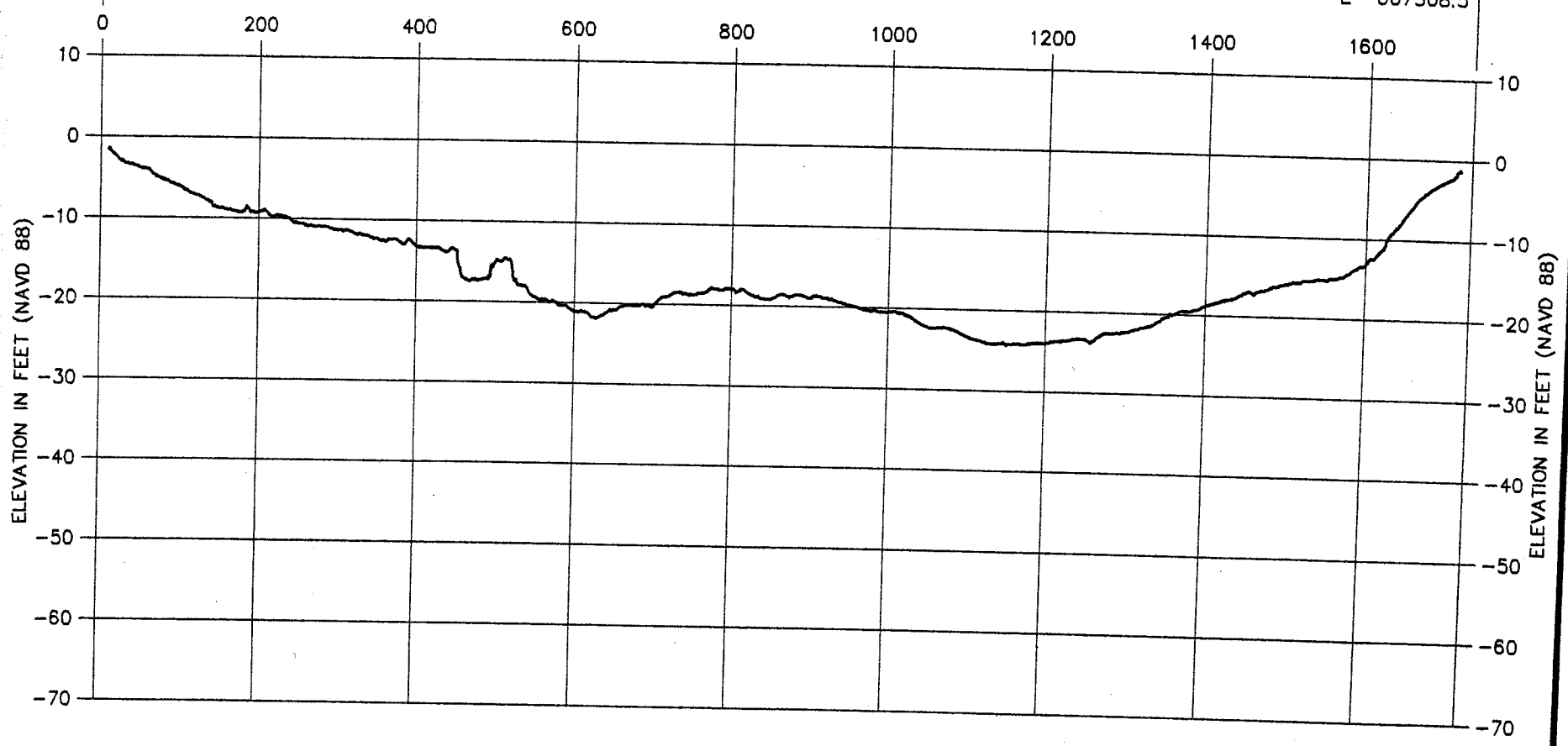
LEGEND:

200 kHz FREQUENCY

PROFILE 72

N 697359.5
E 607553.4

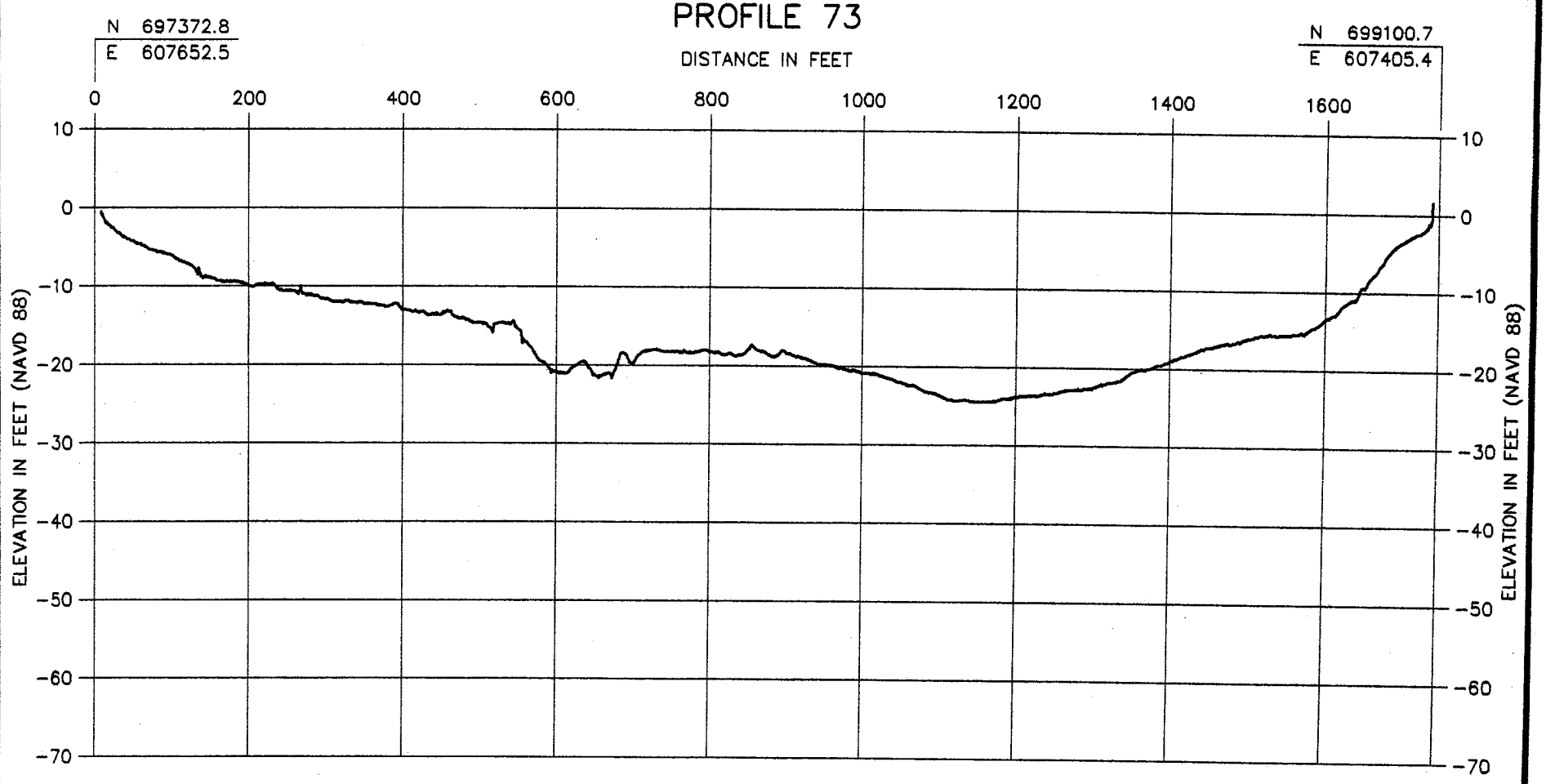
N 699071.9
E 607308.5



LEGEND:

——— 200 kHz FREQUENCY

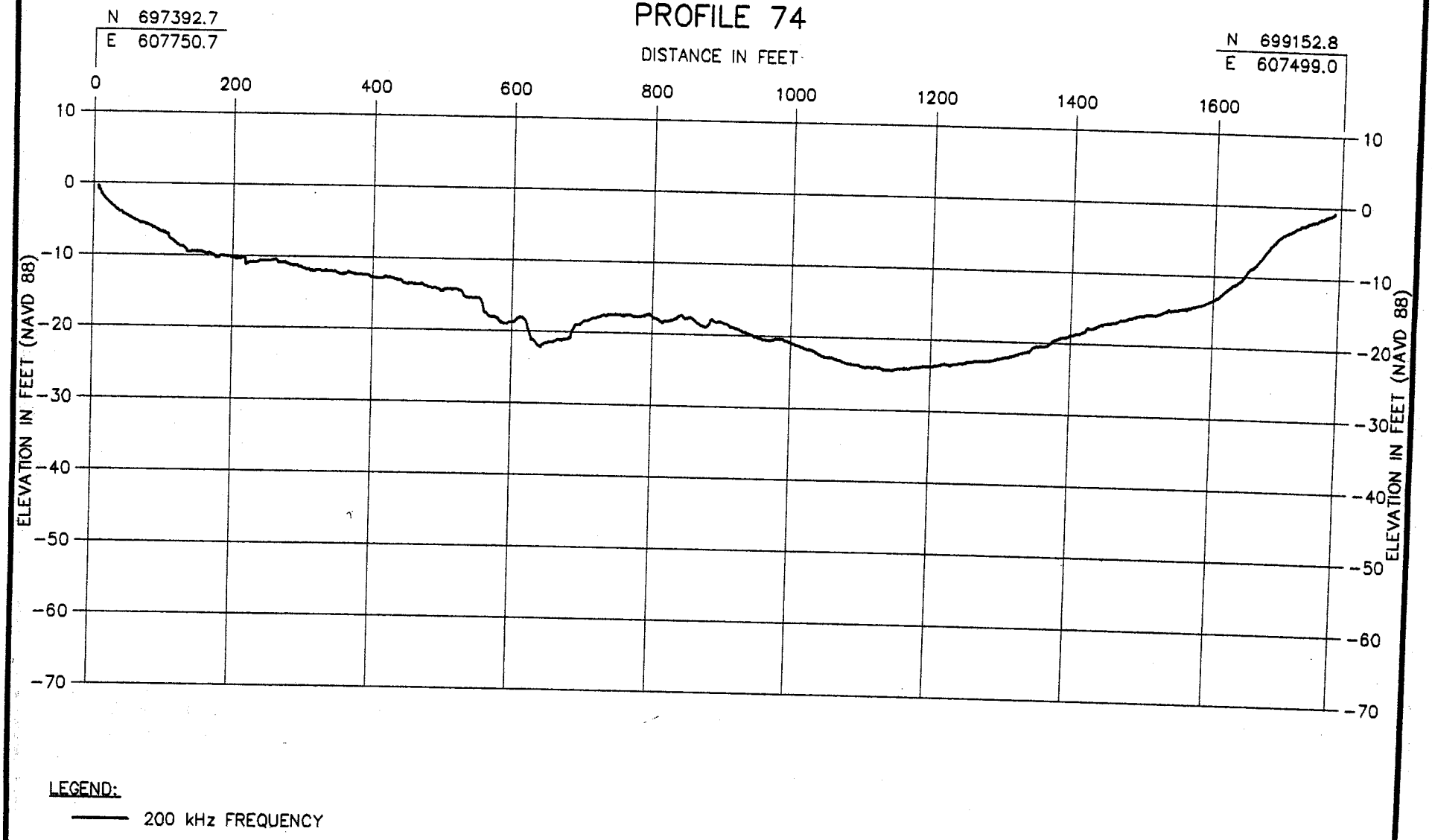
PROFILE 73



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 74



LEGEND:

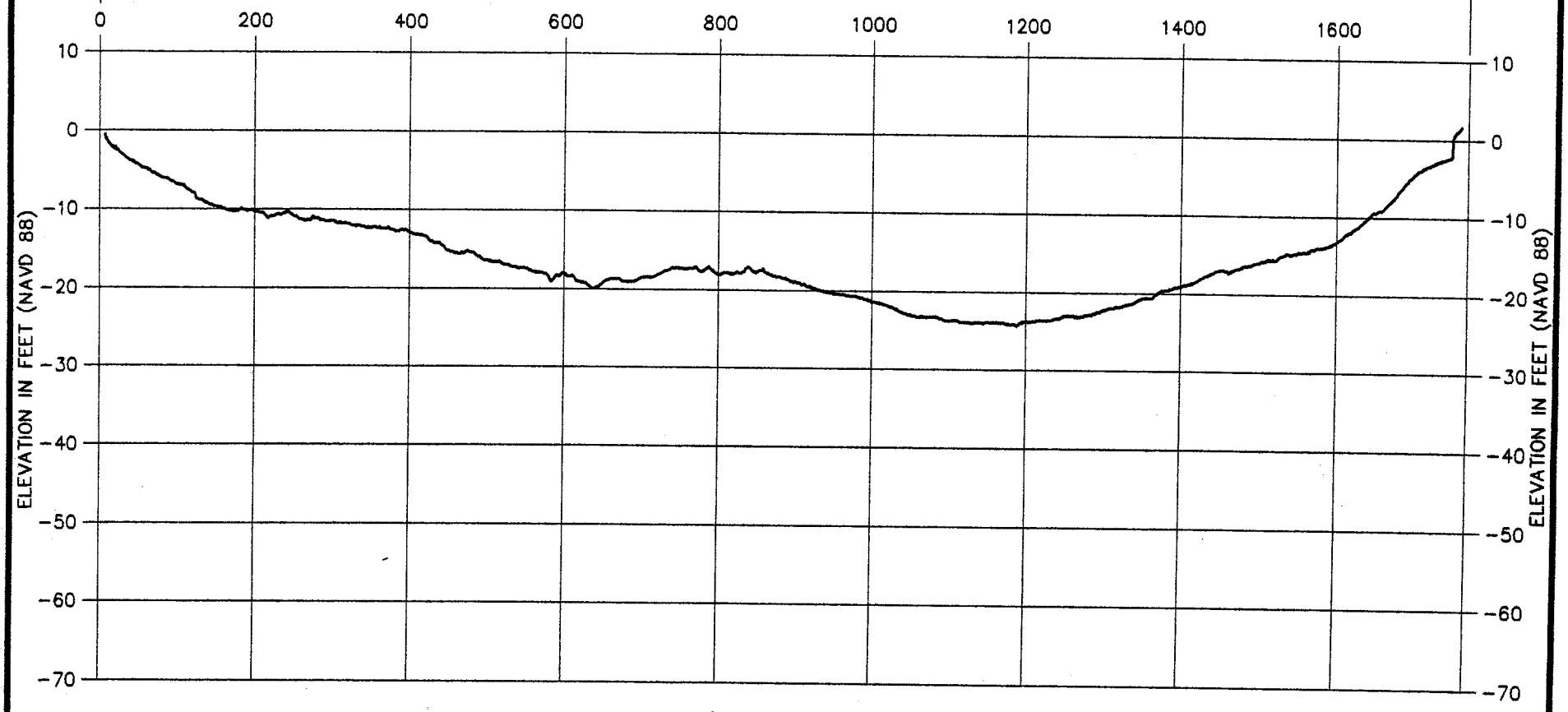
200 kHz FREQUENCY

OSI

PROFILE 75

N 697412.1
E 607849.0

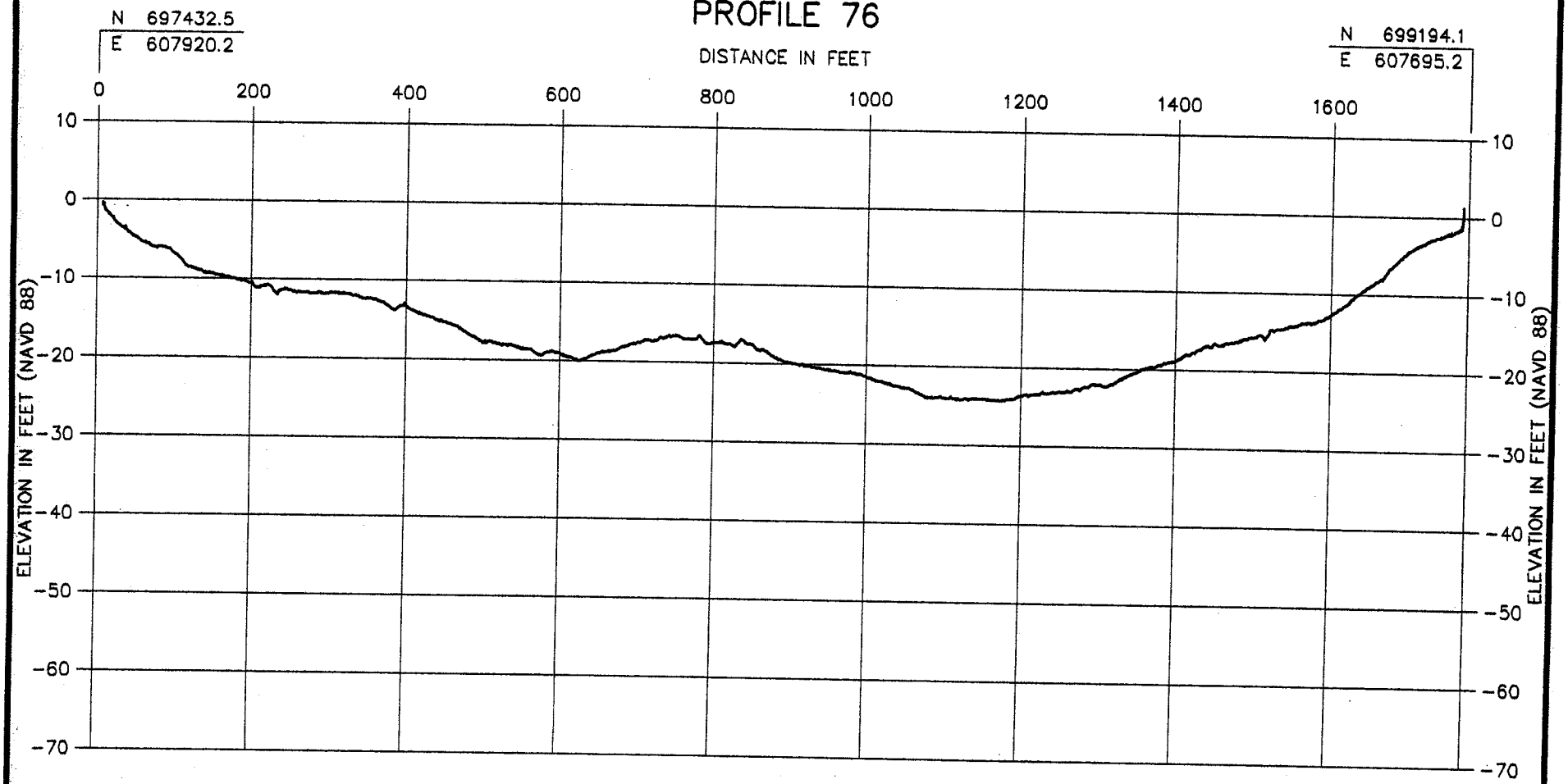
N 699162.5
E 607598.6



LEGEND:

——— 200 kHz FREQUENCY

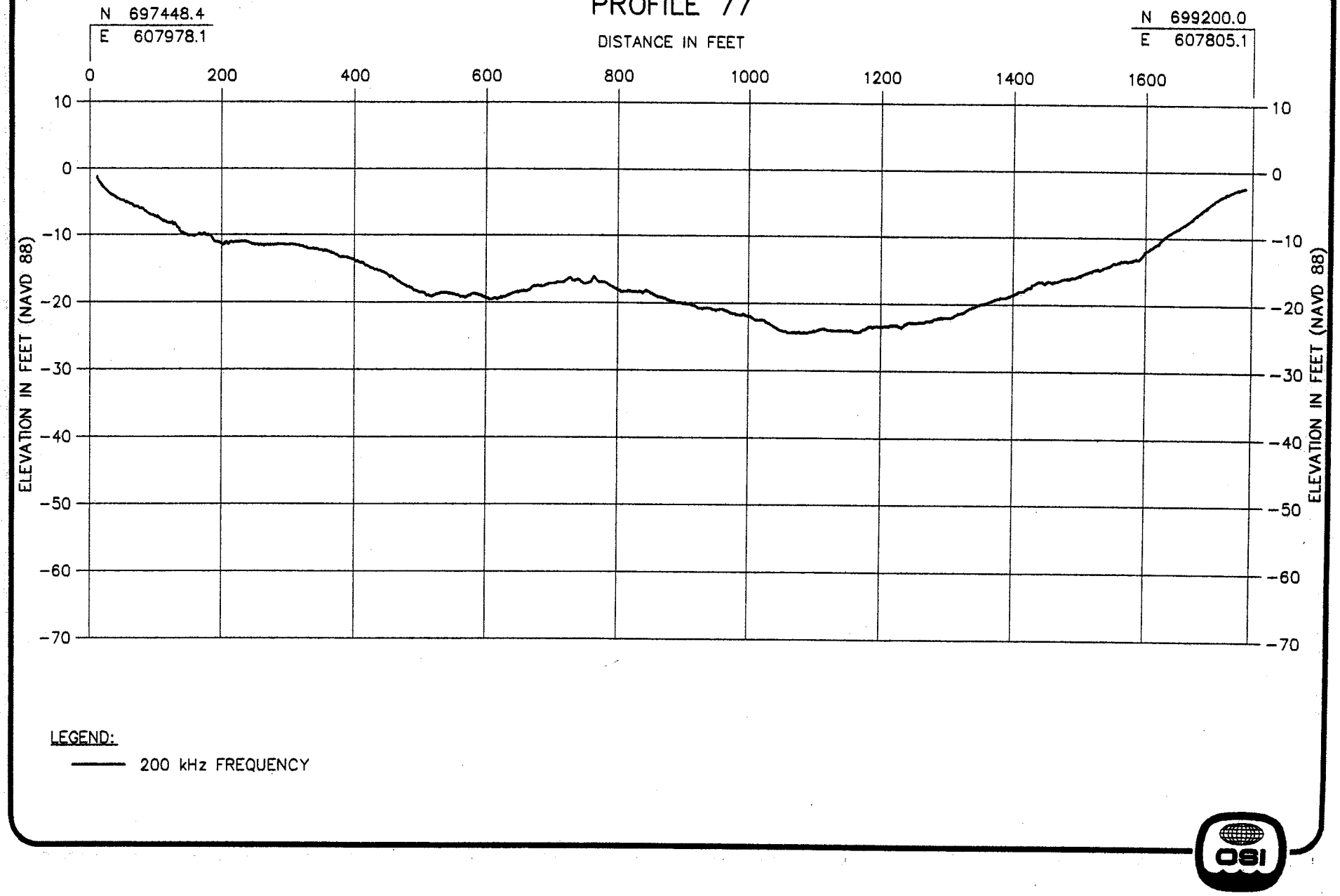
PROFILE 76



LEGEND:

——— 200 kHz FREQUENCY

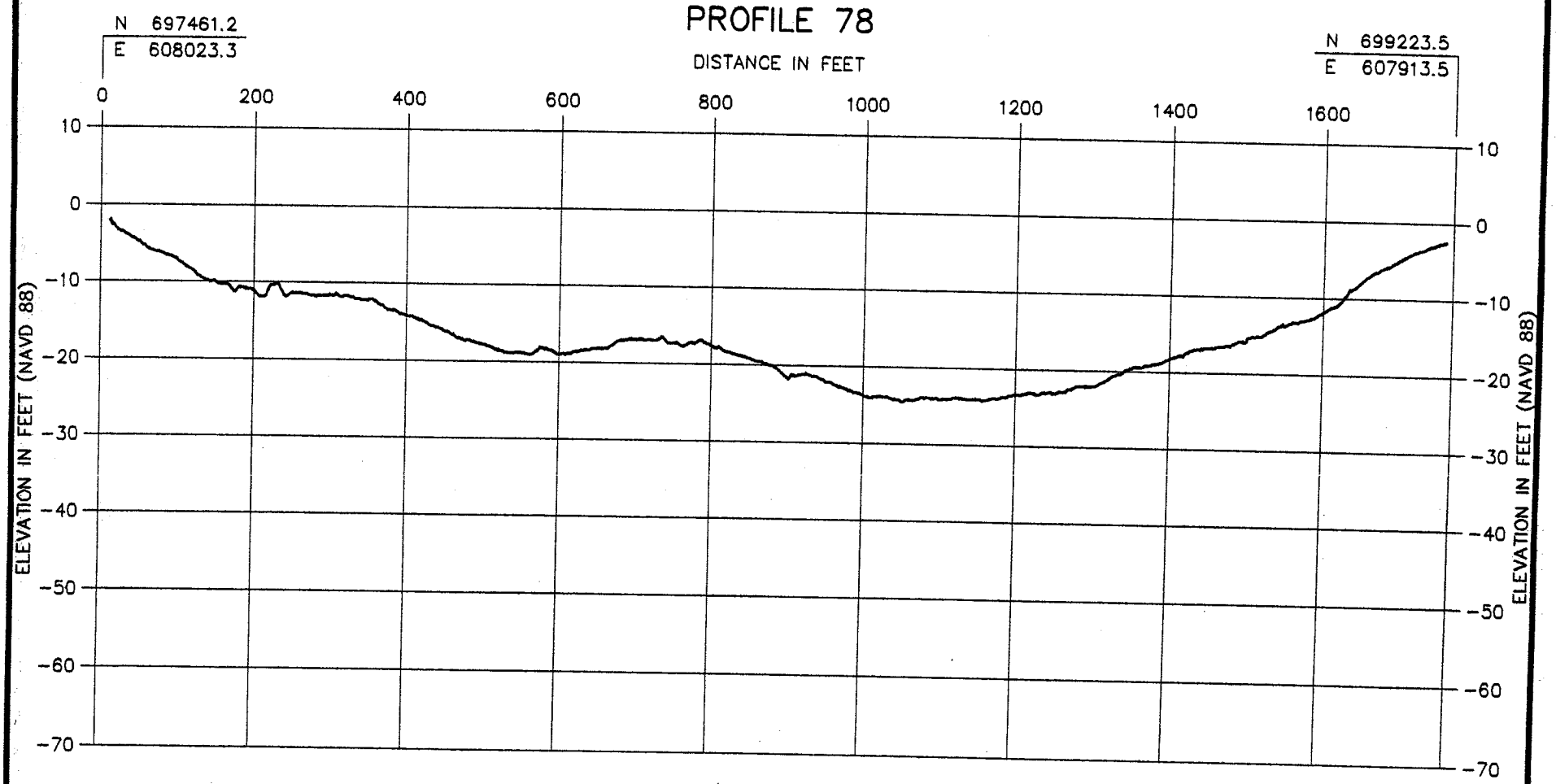
PROFILE 77



LEGEND:

200 kHz FREQUENCY

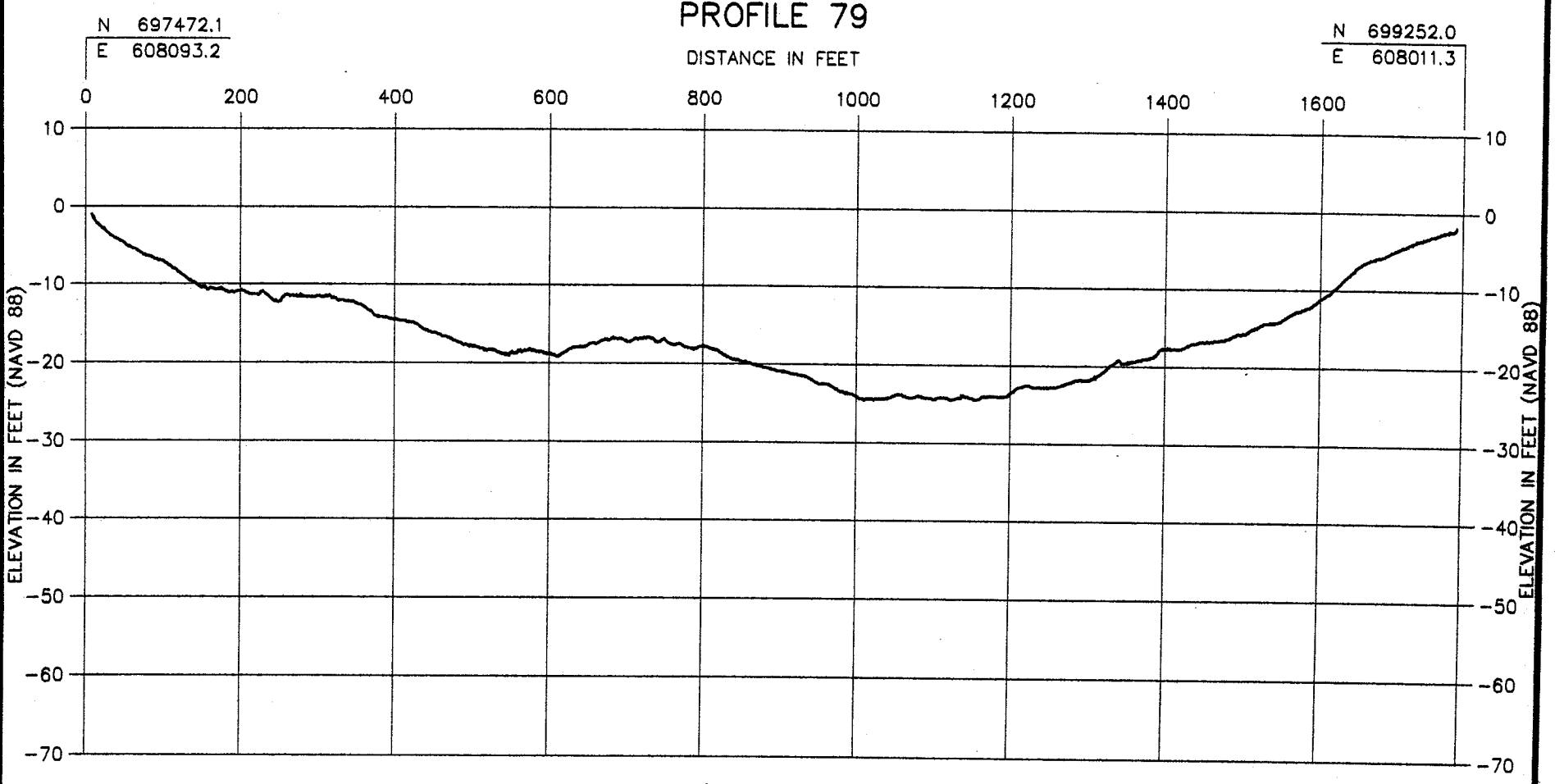
PROFILE 78



LEGEND:

——— 200 kHz FREQUENCY

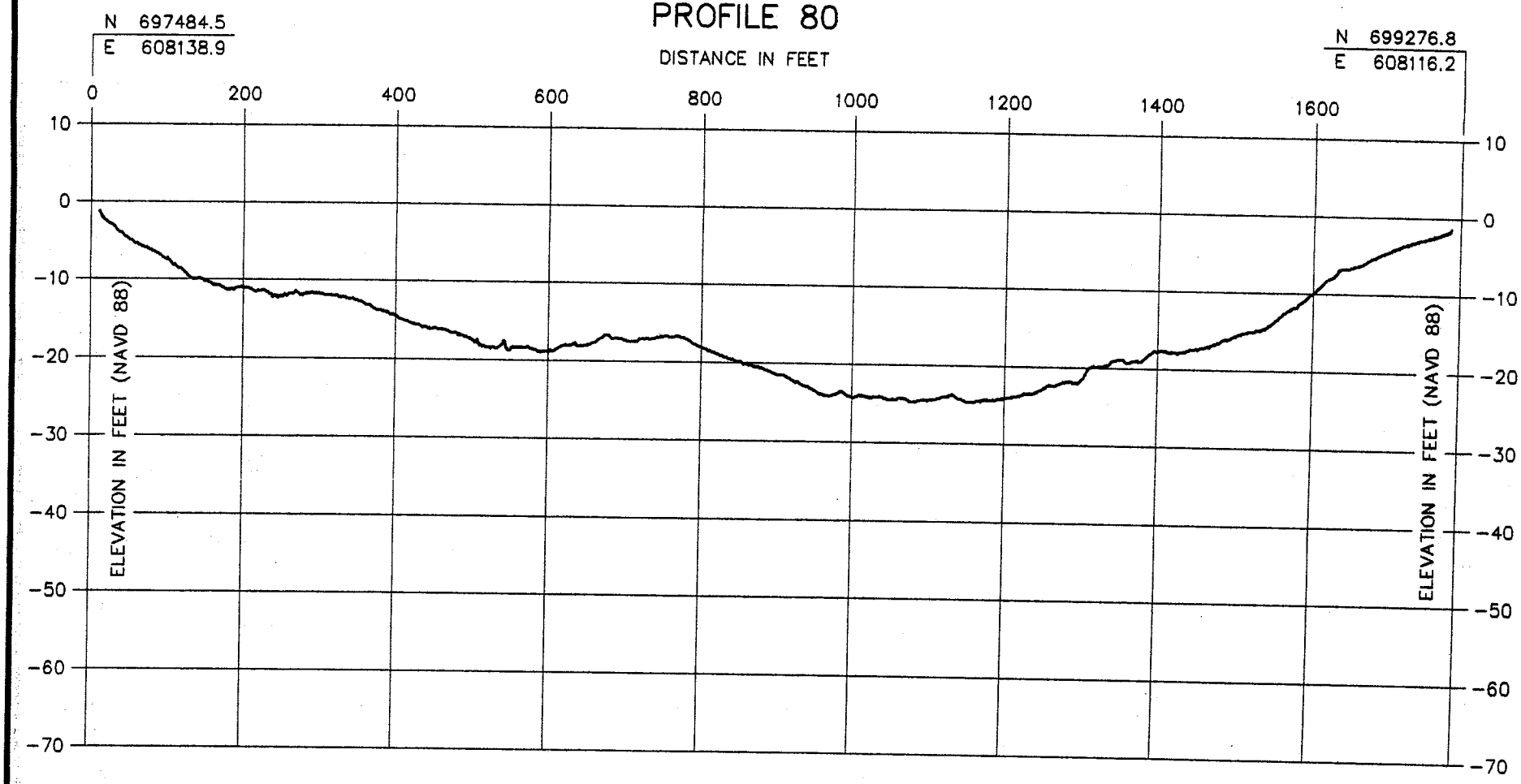
PROFILE 79



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 80



LEGEND:

——— 200 kHz FREQUENCY

OSI

PROFILE 81

N 697527.0
E 608216.3

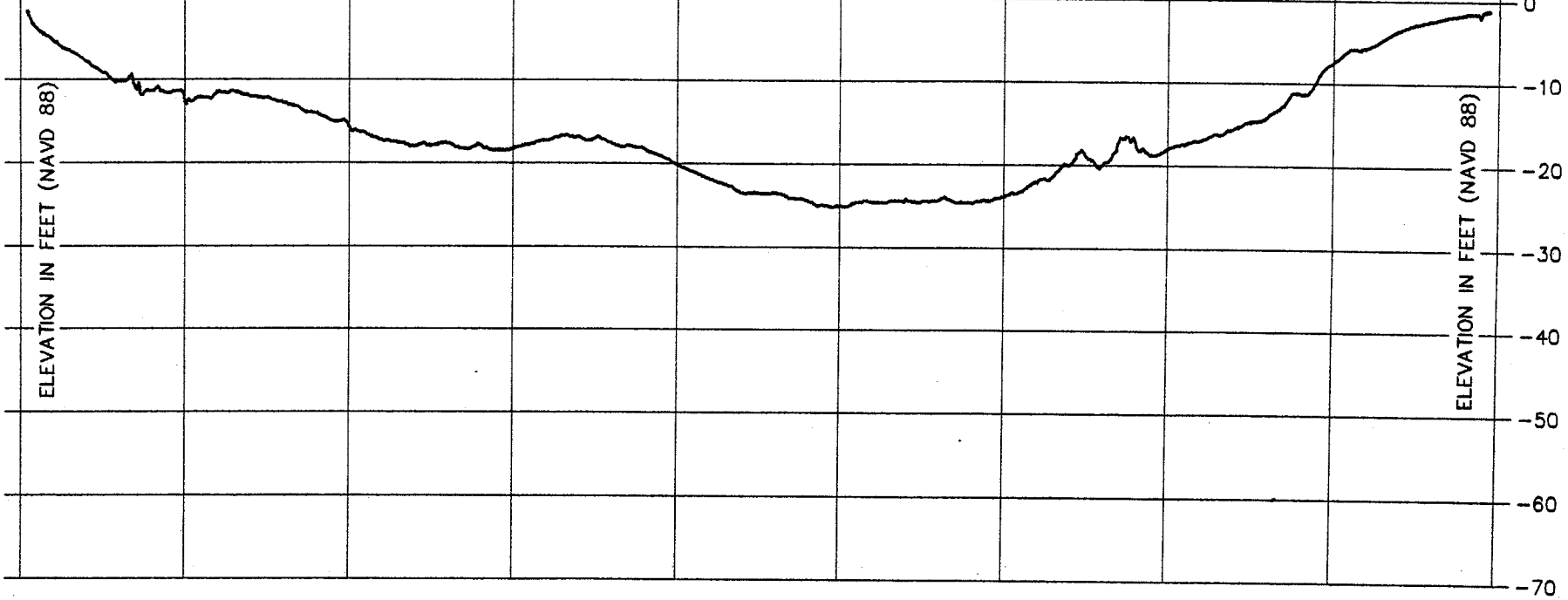
N 699327.2
E 608216.3

DISTANCE IN FEET

0 200 400 600 800 1000 1200 1400 1600 1800

10 0 -10 -20 -30 -40 -50 -60 -70

ELEVATION IN FEET (NAVD 88)

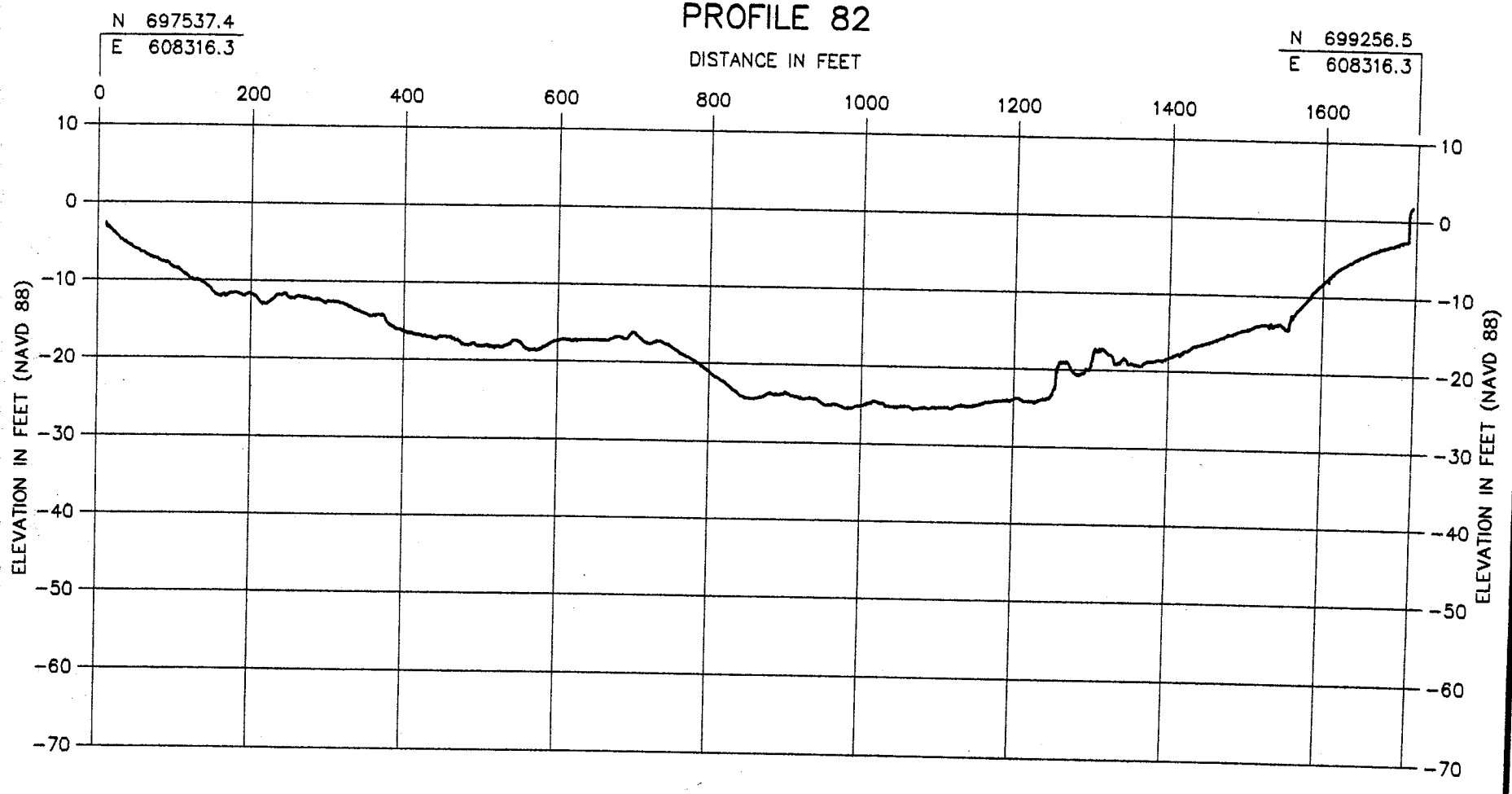


LEGEND:

——— 200 kHz FREQUENCY

OSI

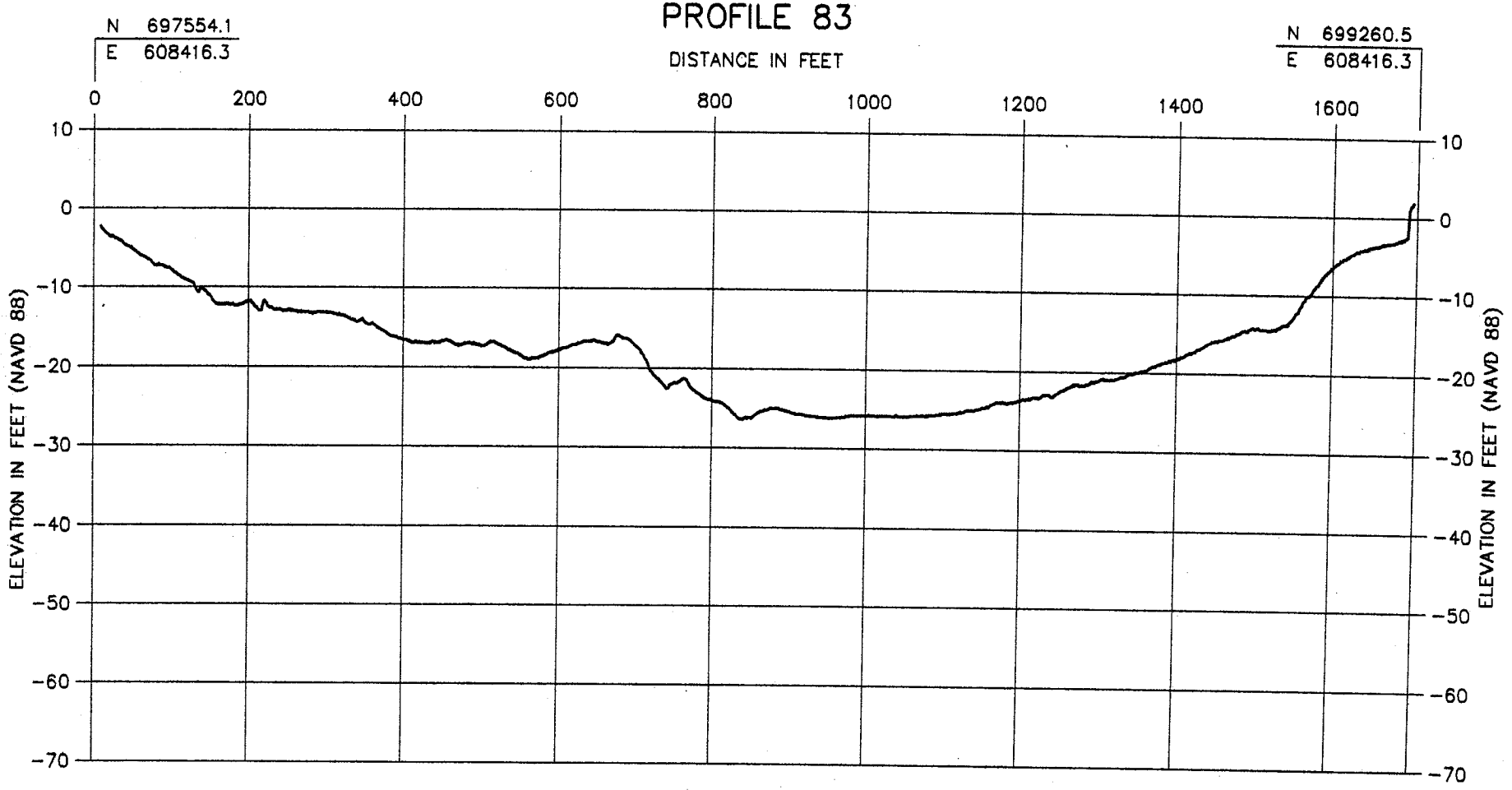
PROFILE 82



LEGEND:

200 kHz FREQUENCY

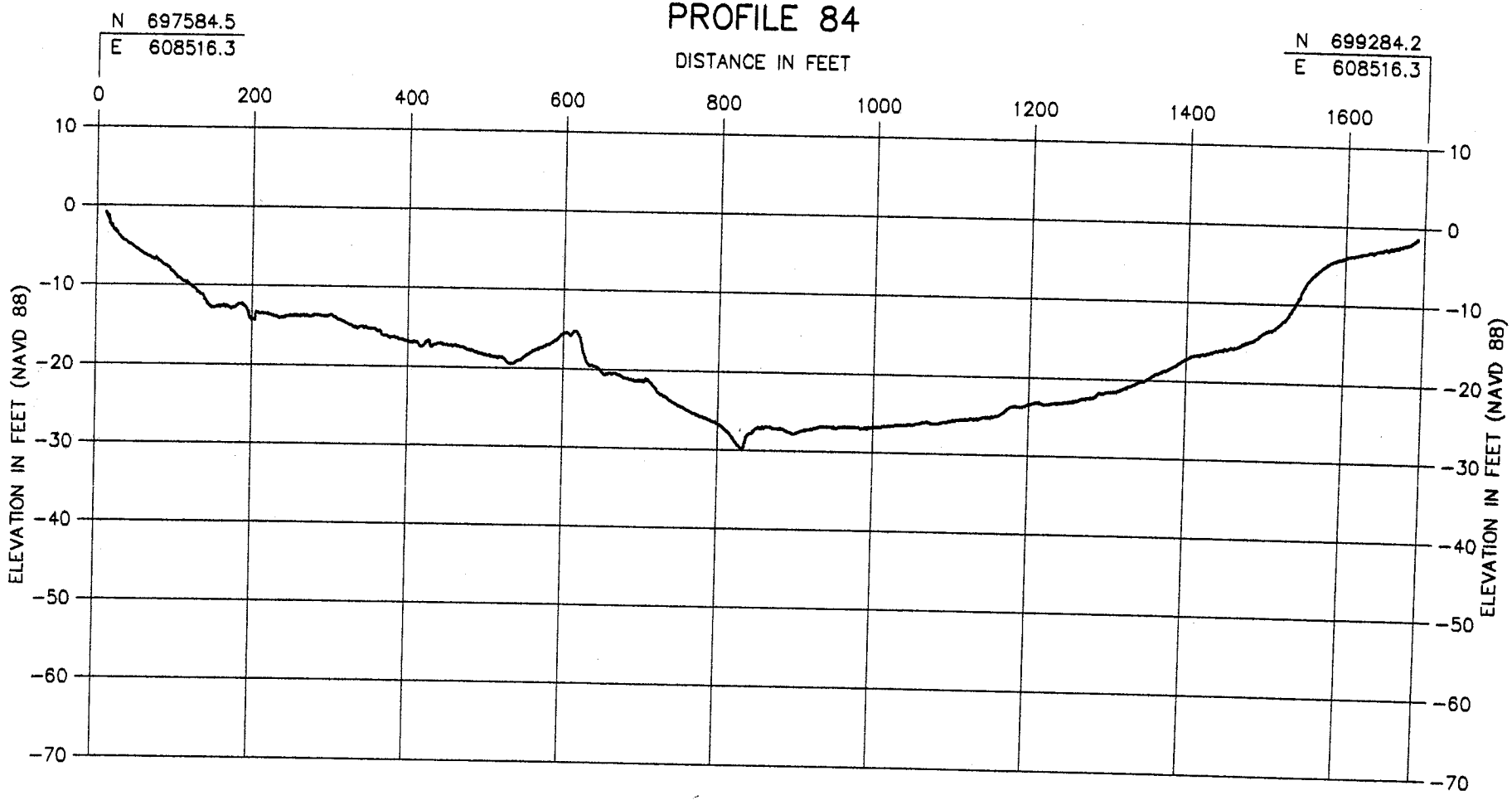
PROFILE 83



LEGEND:

——— 200 kHz FREQUENCY

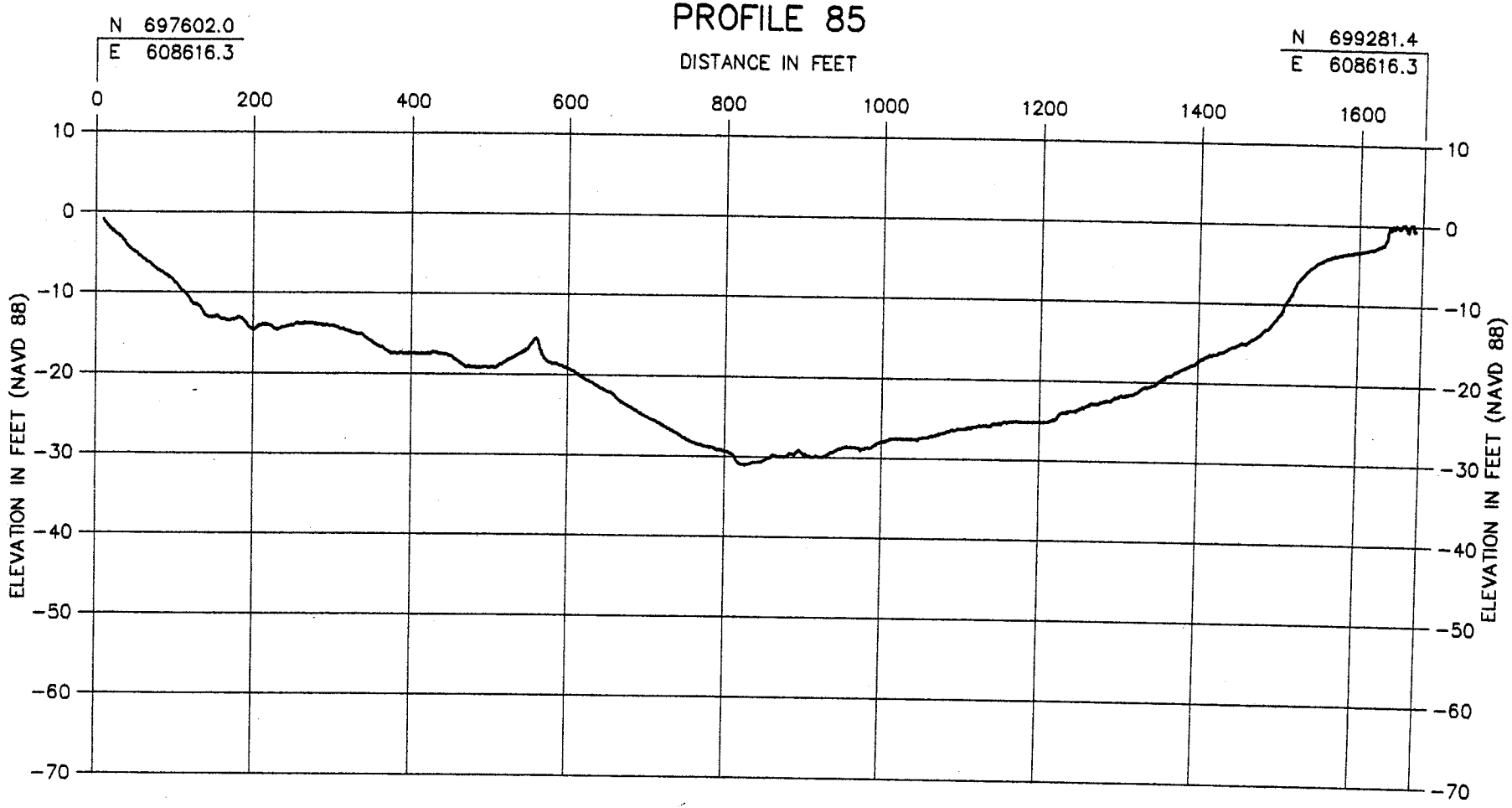
PROFILE 84



LEGEND:

——— 200 kHz FREQUENCY

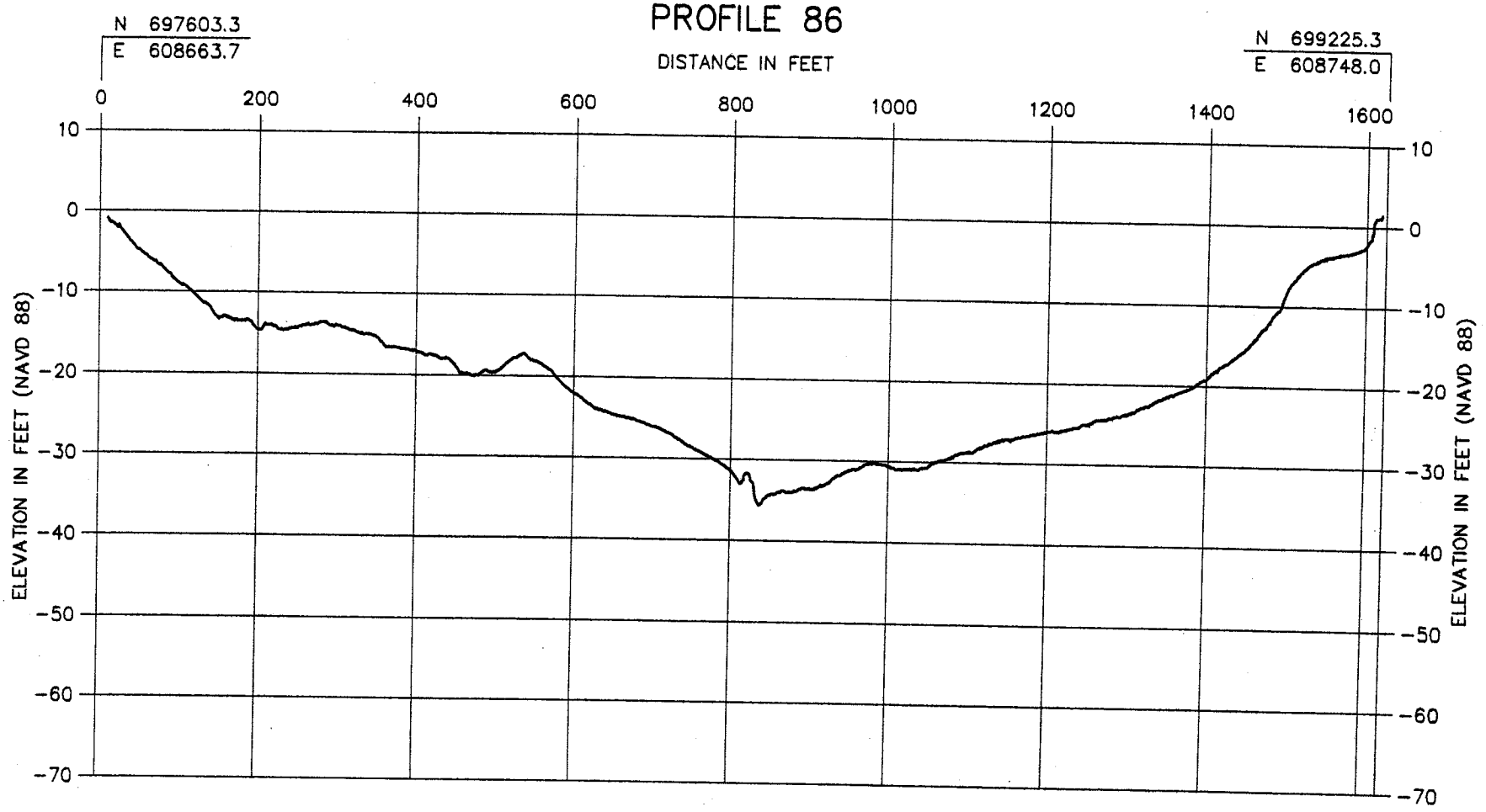
PROFILE 85



LEGEND:

——— 200 kHz FREQUENCY

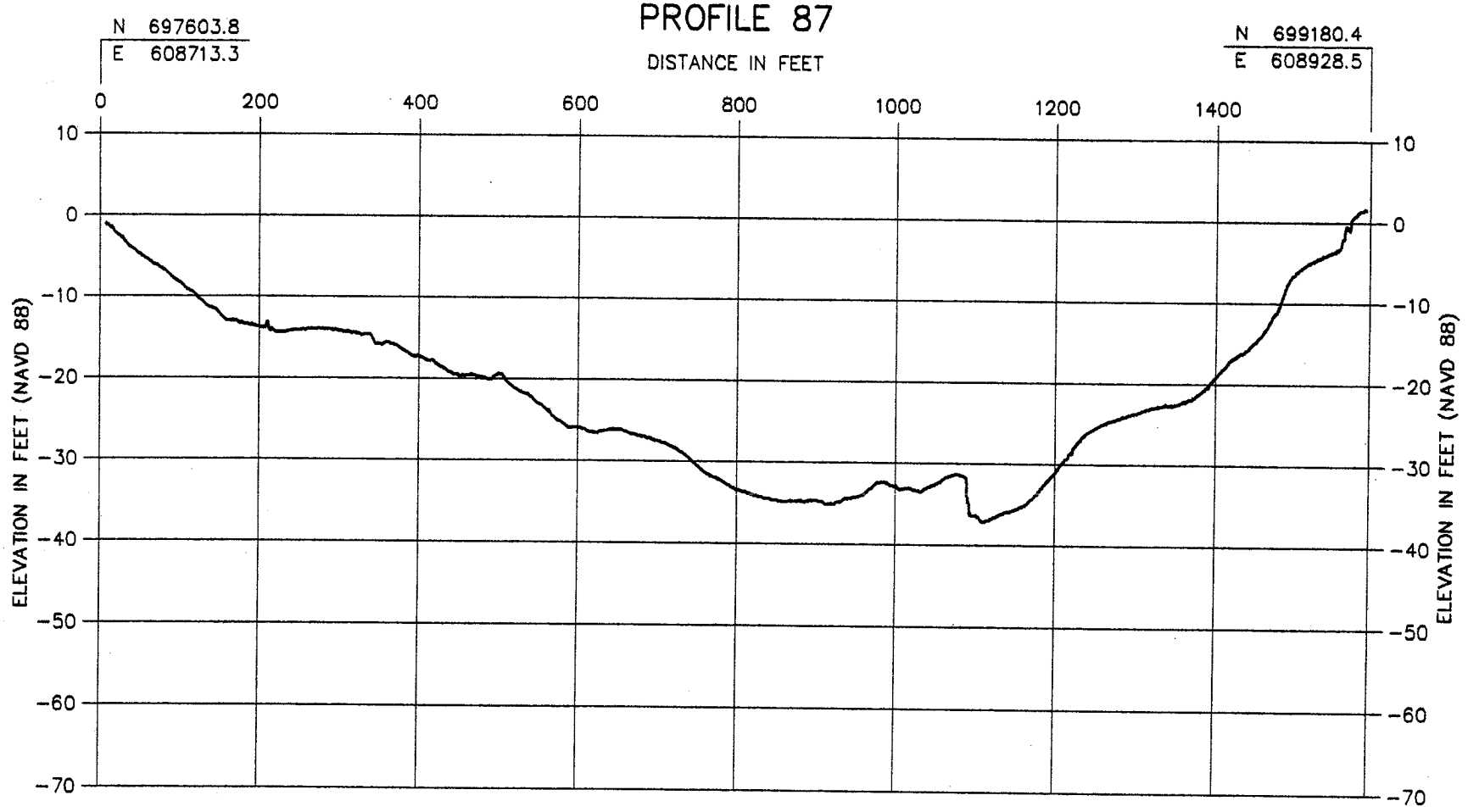
PROFILE 86



LEGEND:

——— 200 kHz FREQUENCY

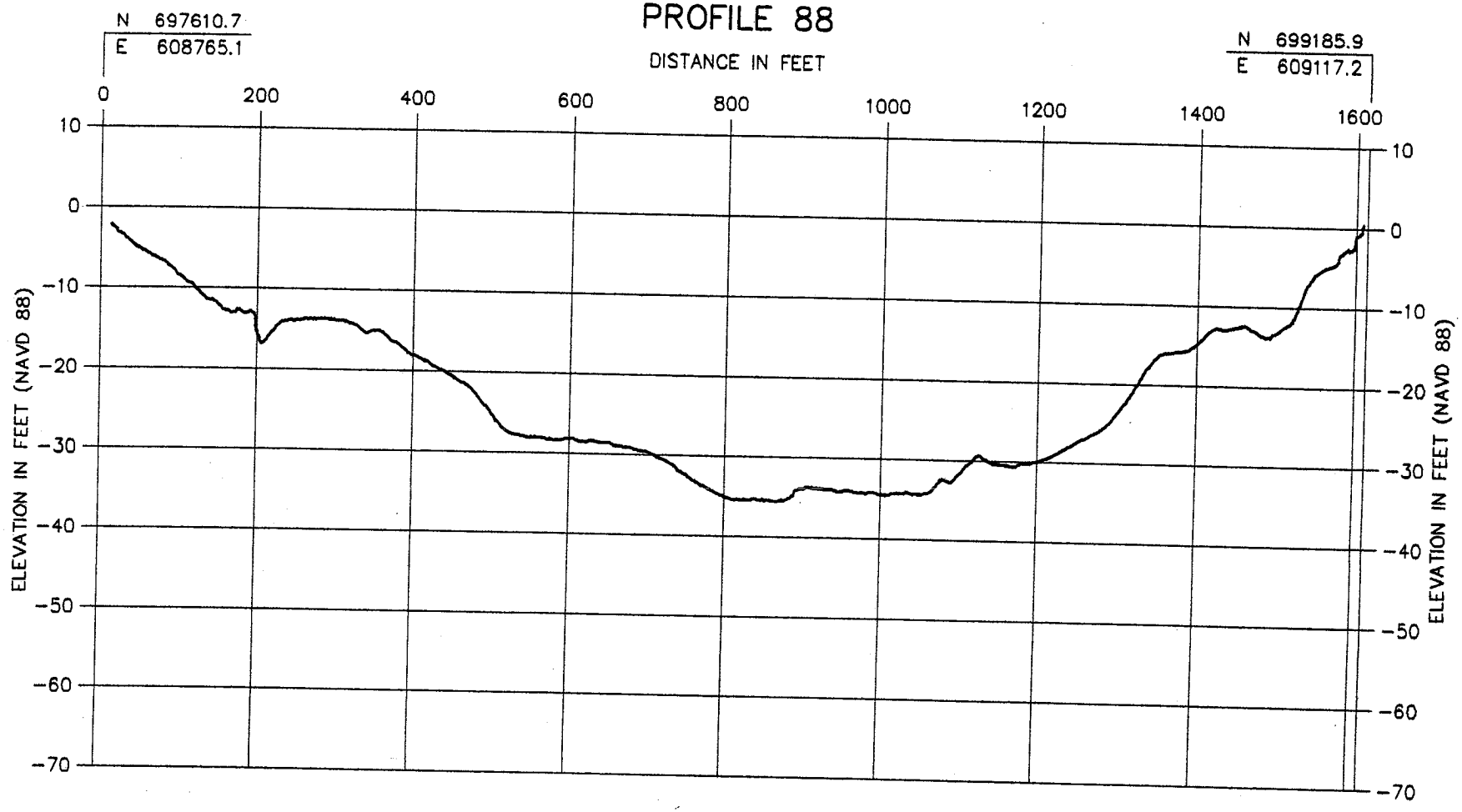
PROFILE 87



LEGEND:

——— 200 kHz FREQUENCY

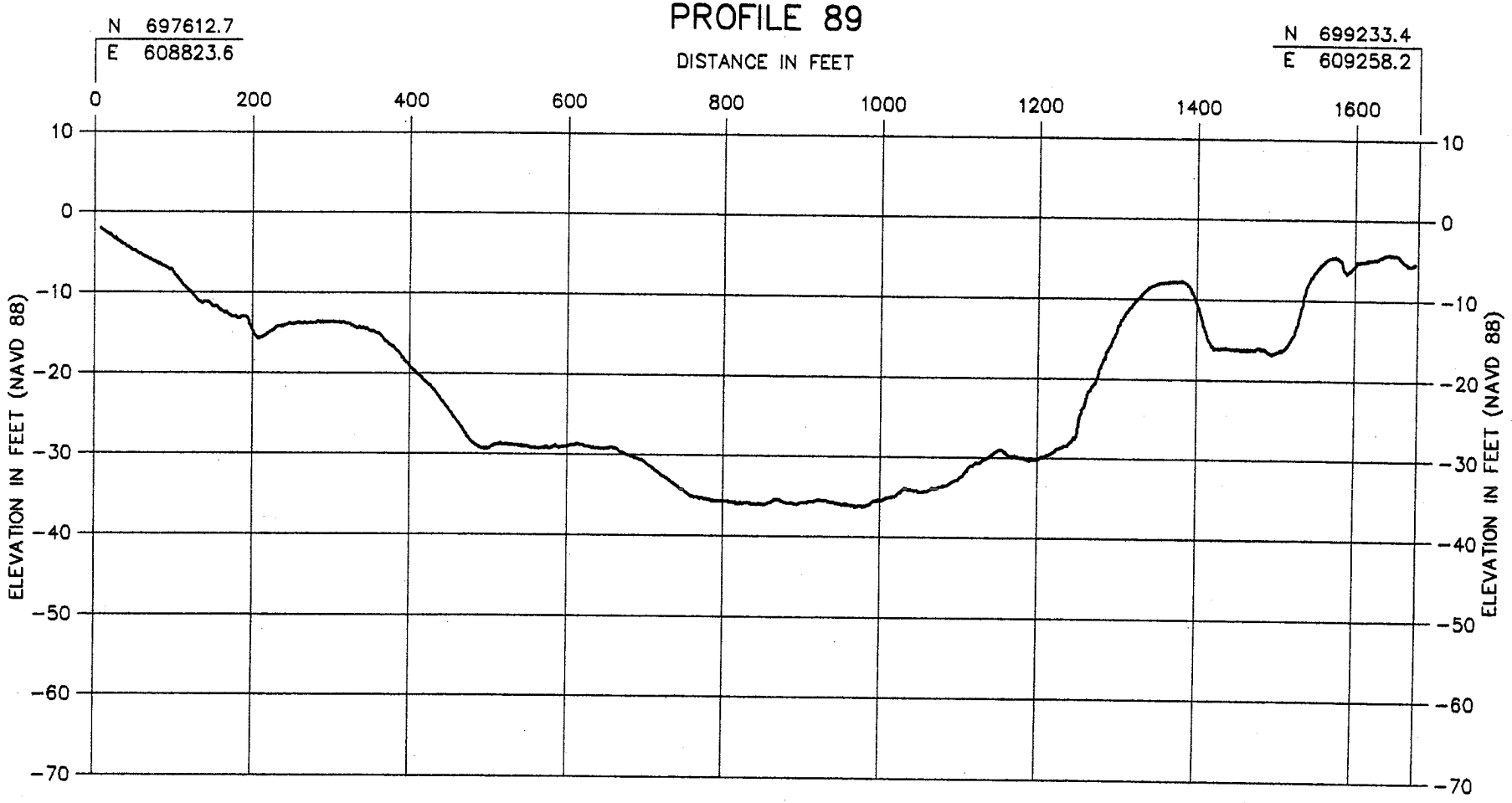
PROFILE 88



LEGEND:

200 kHz FREQUENCY

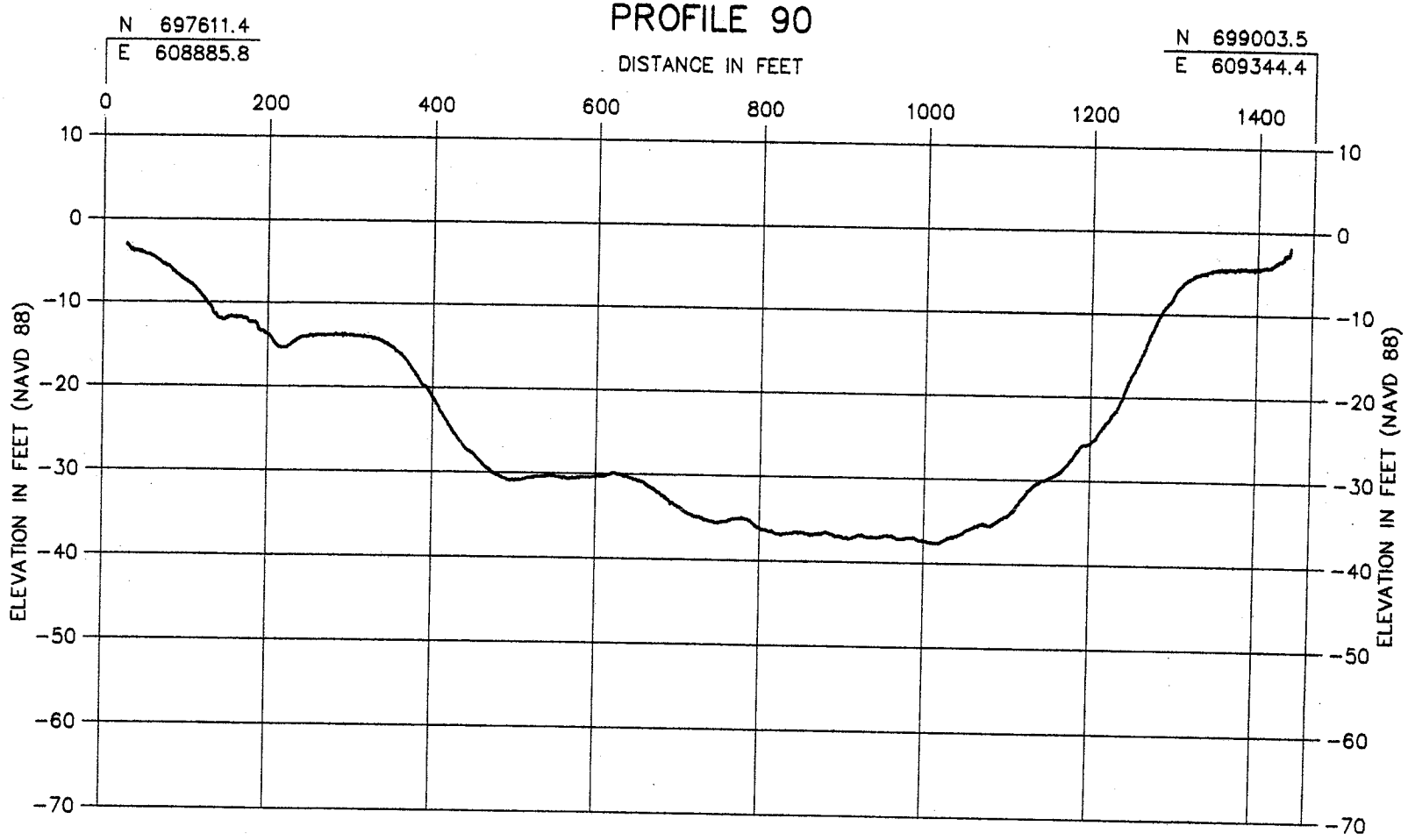
PROFILE 89



LEGEND:

——— 200 kHz FREQUENCY

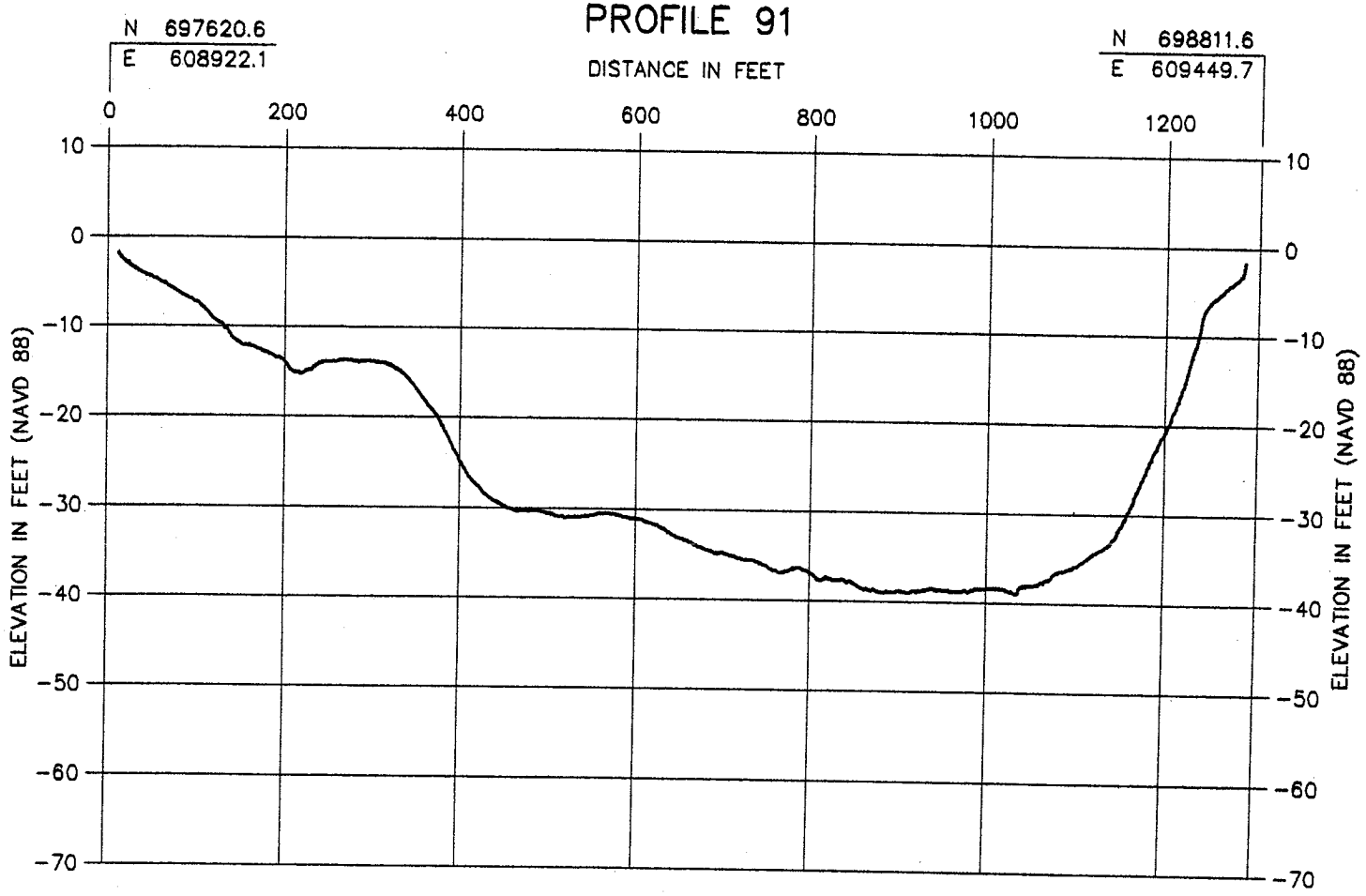
PROFILE 90



LEGEND:

200 kHz FREQUENCY

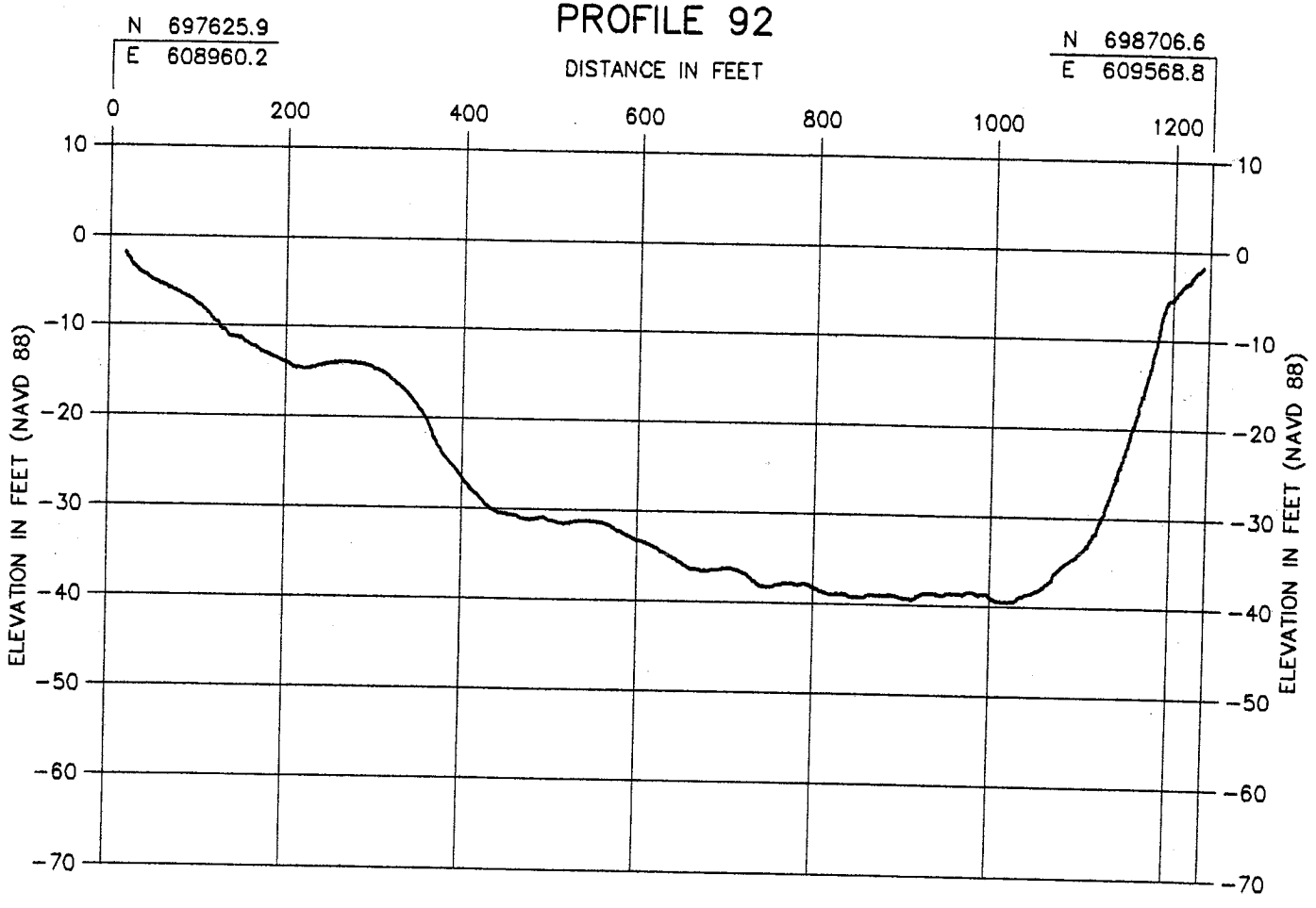
PROFILE 91



LEGEND:

200 kHz FREQUENCY

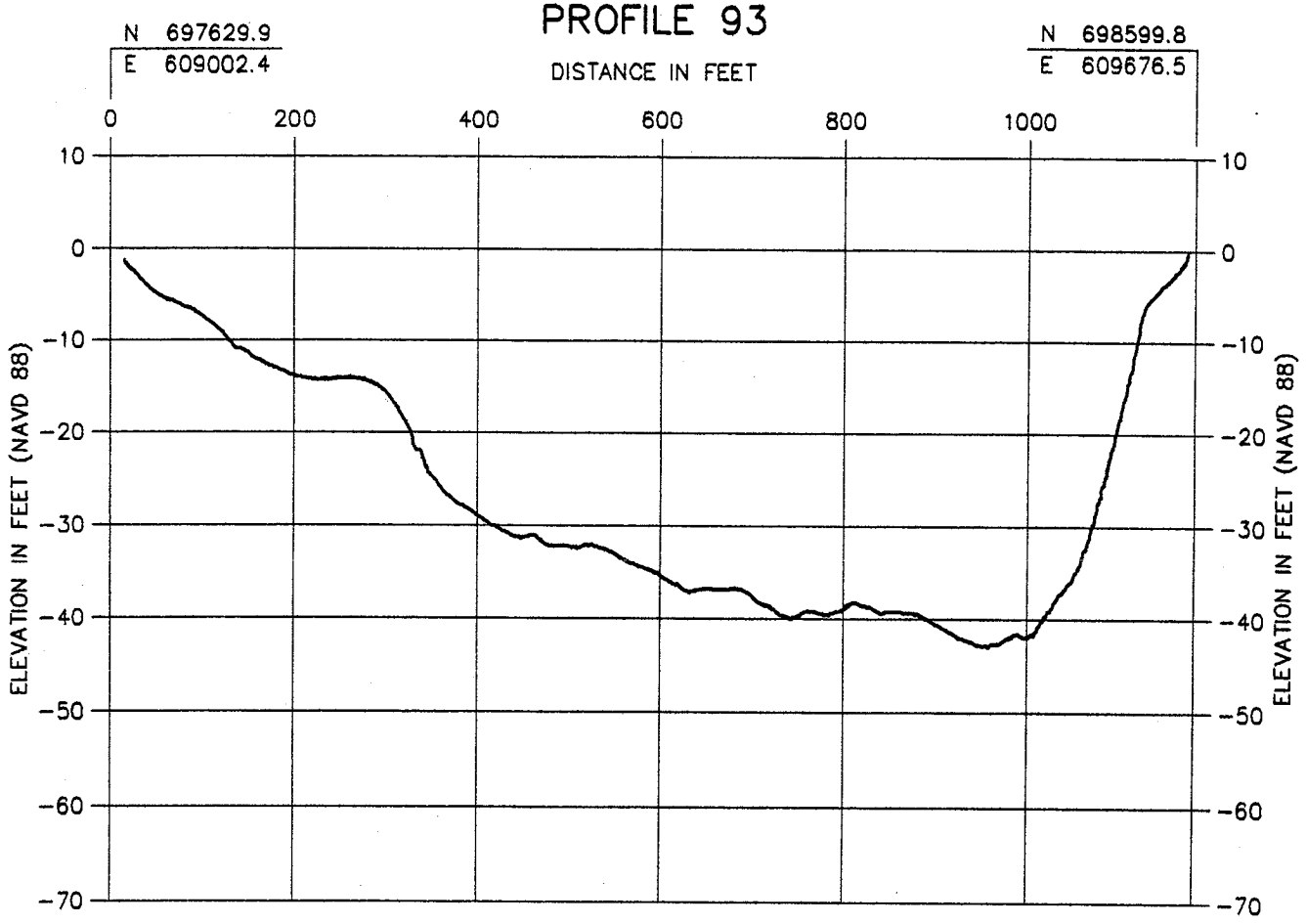
PROFILE 92



LEGEND:

——— 200 kHz FREQUENCY

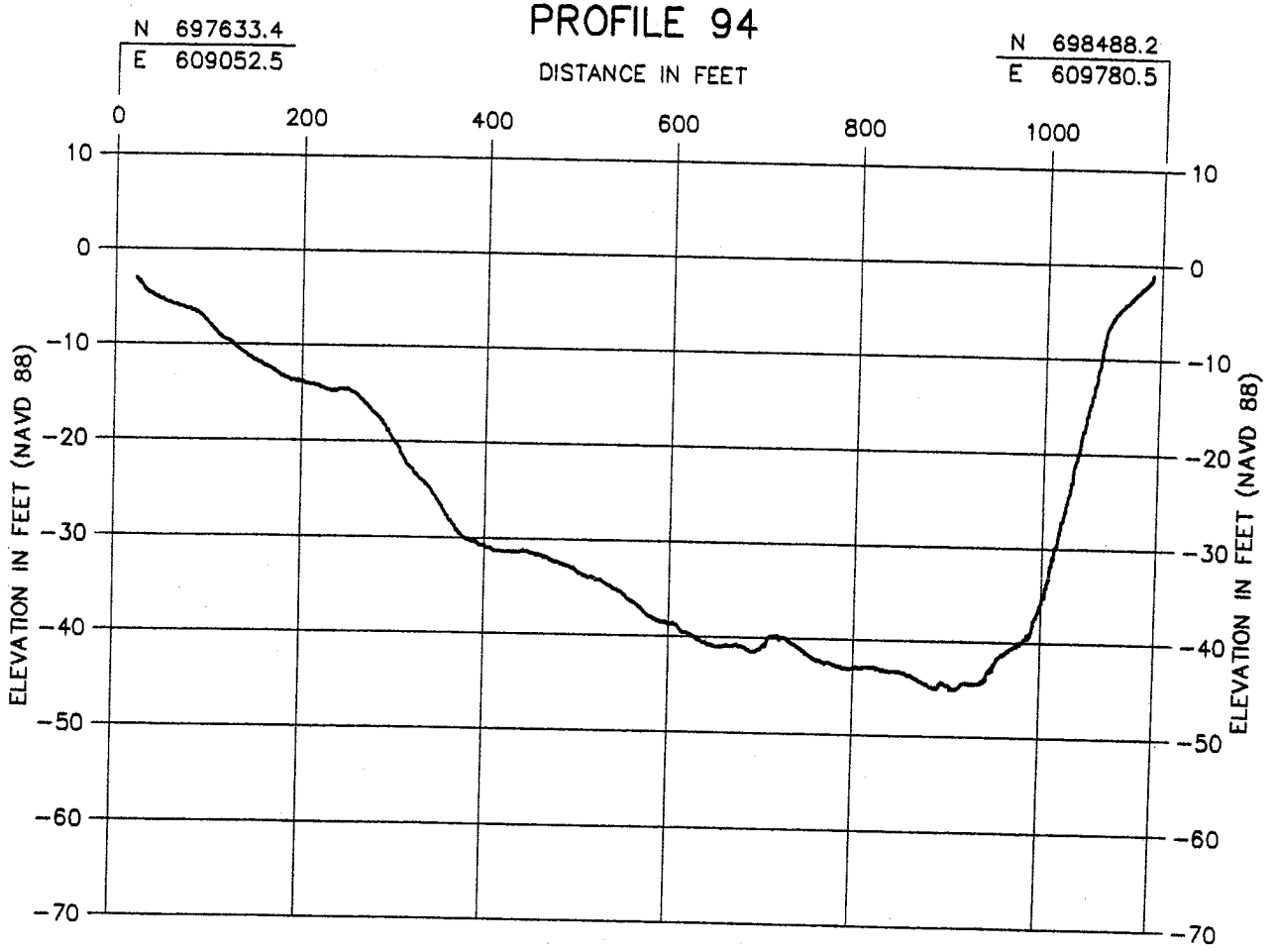
PROFILE 93



LEGEND:

——— 200 kHz FREQUENCY

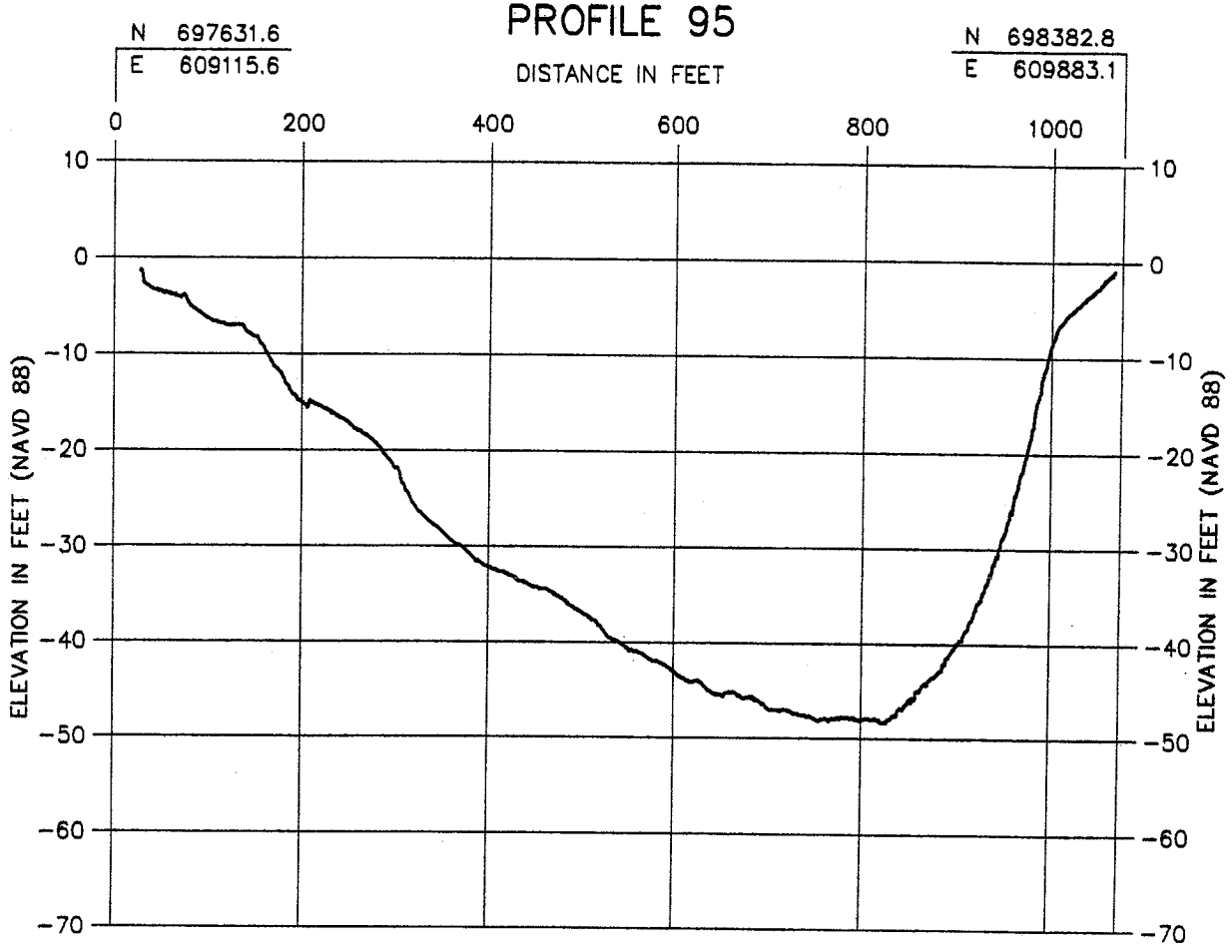
PROFILE 94



LEGEND:

——— 200 kHz FREQUENCY

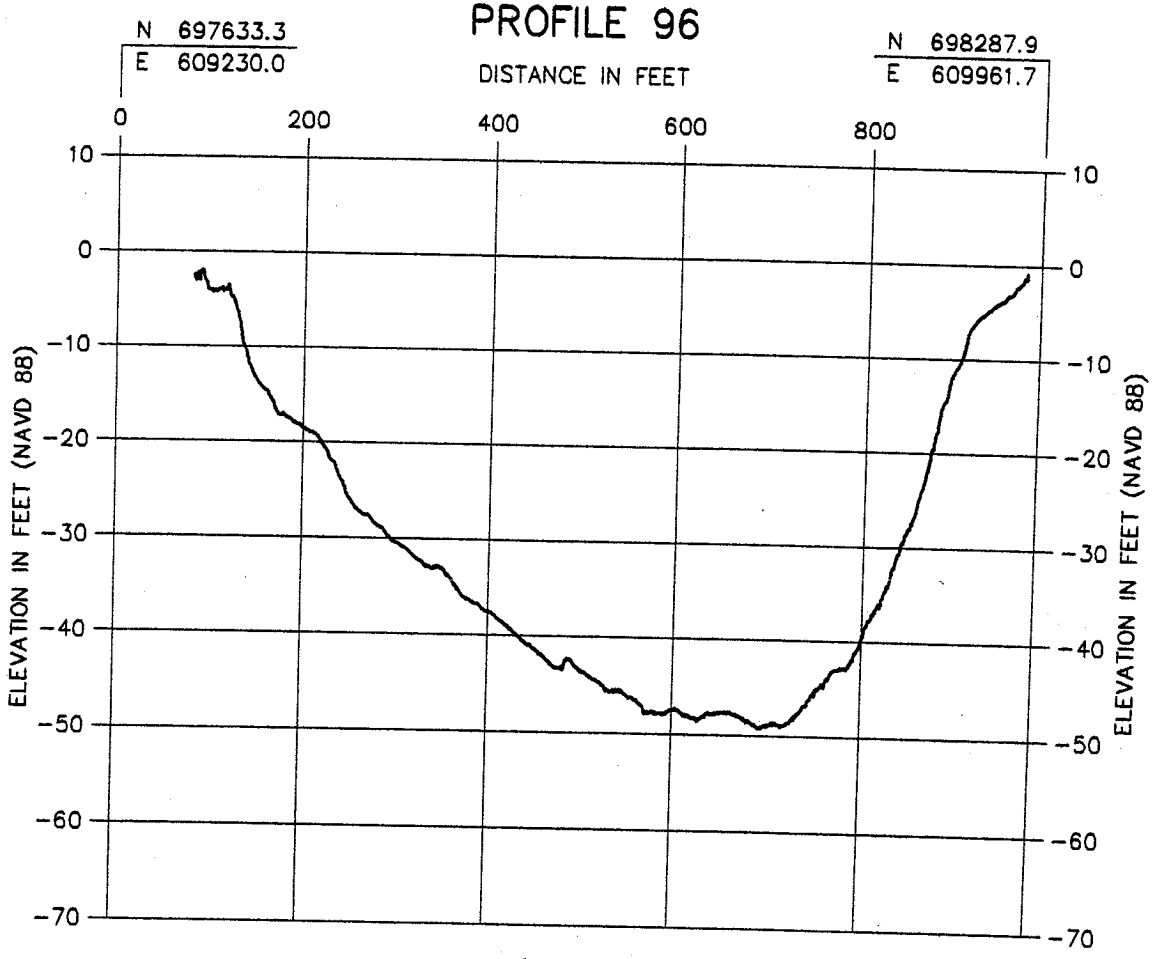
PROFILE 95



LEGEND:

——— 200 kHz FREQUENCY

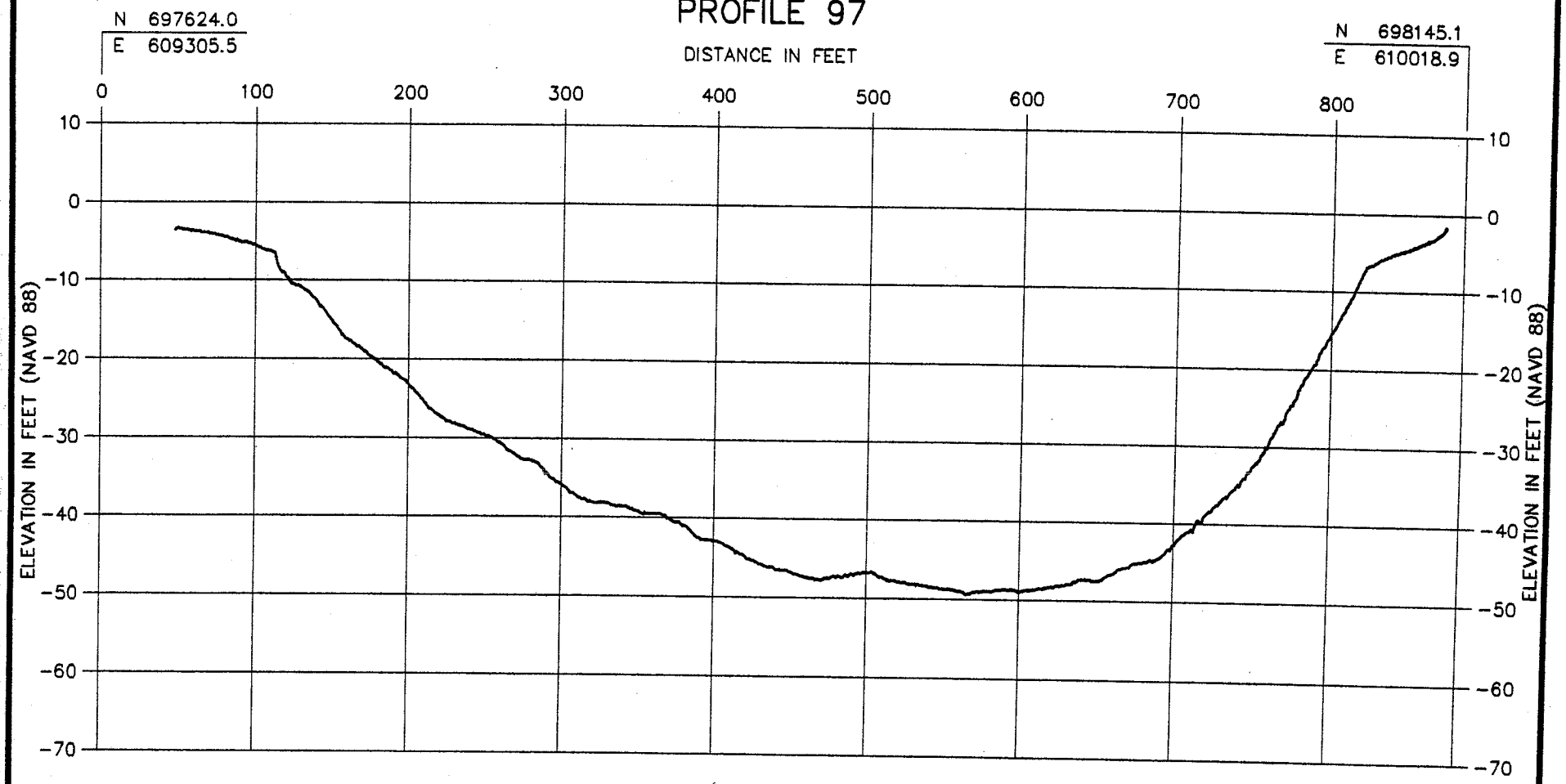
PROFILE 96



LEGEND:

200 kHz FREQUENCY

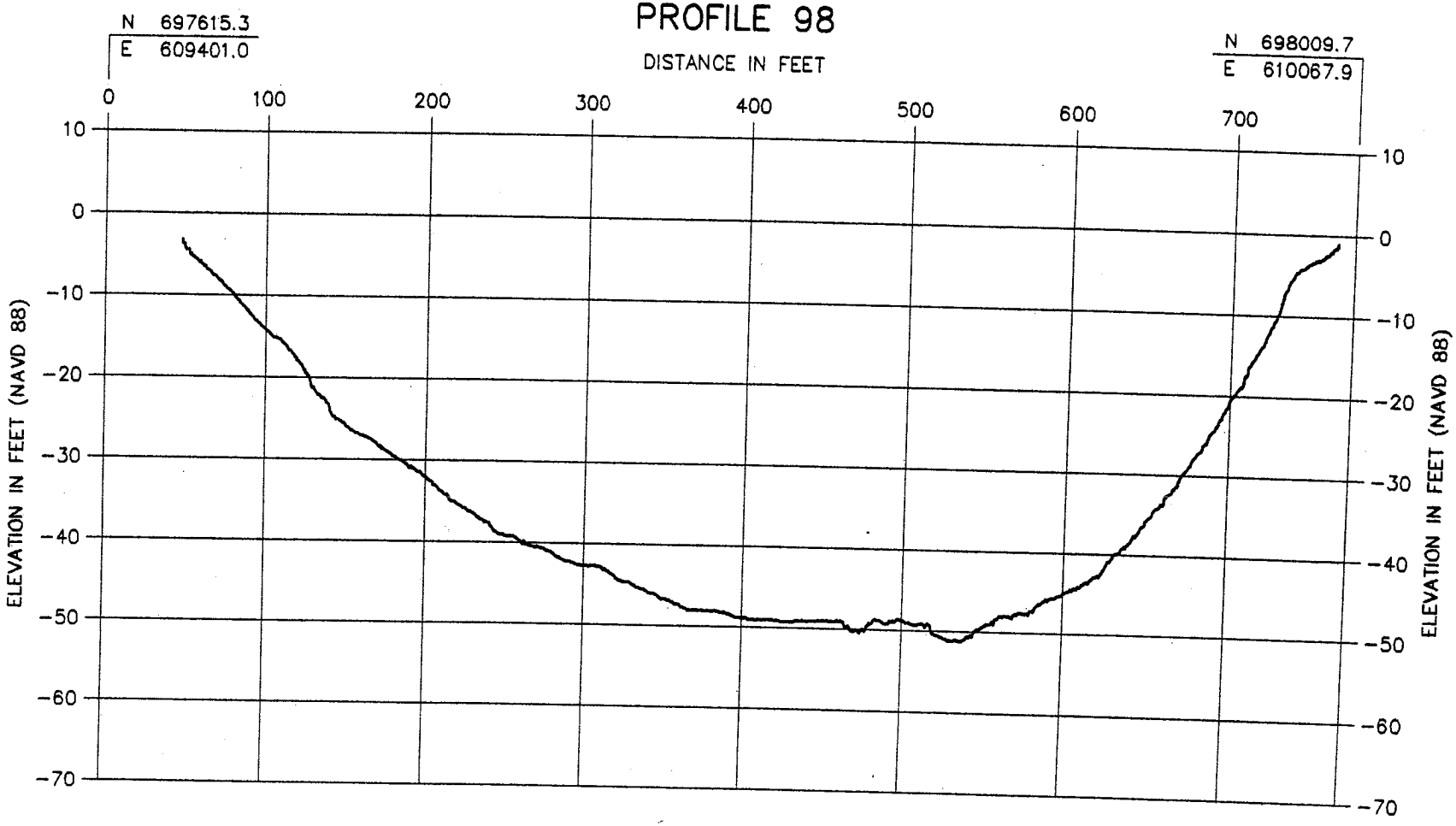
PROFILE 97



LEGEND:

200 kHz FREQUENCY

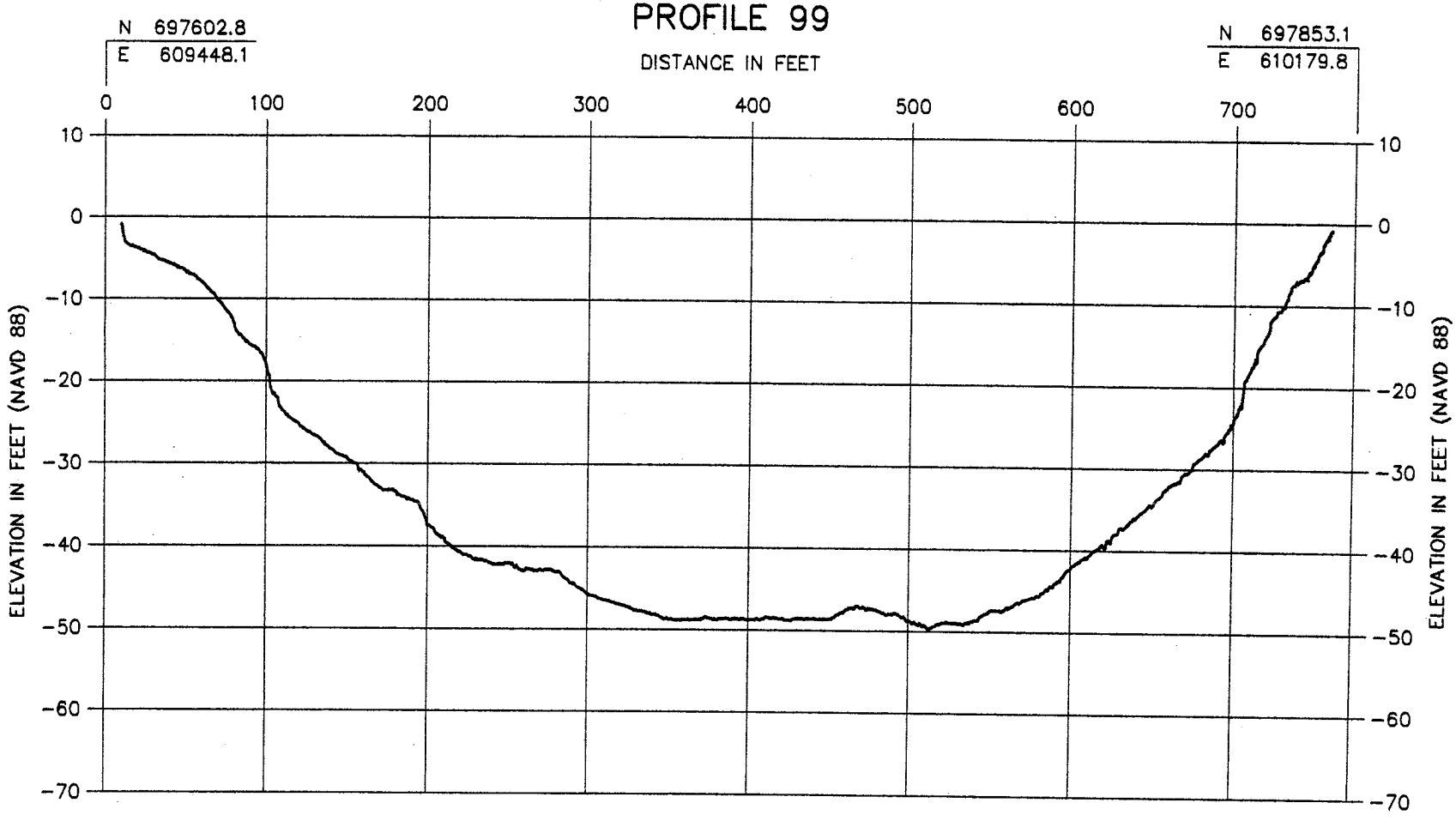
PROFILE 98



LEGEND:

——— 200 kHz FREQUENCY

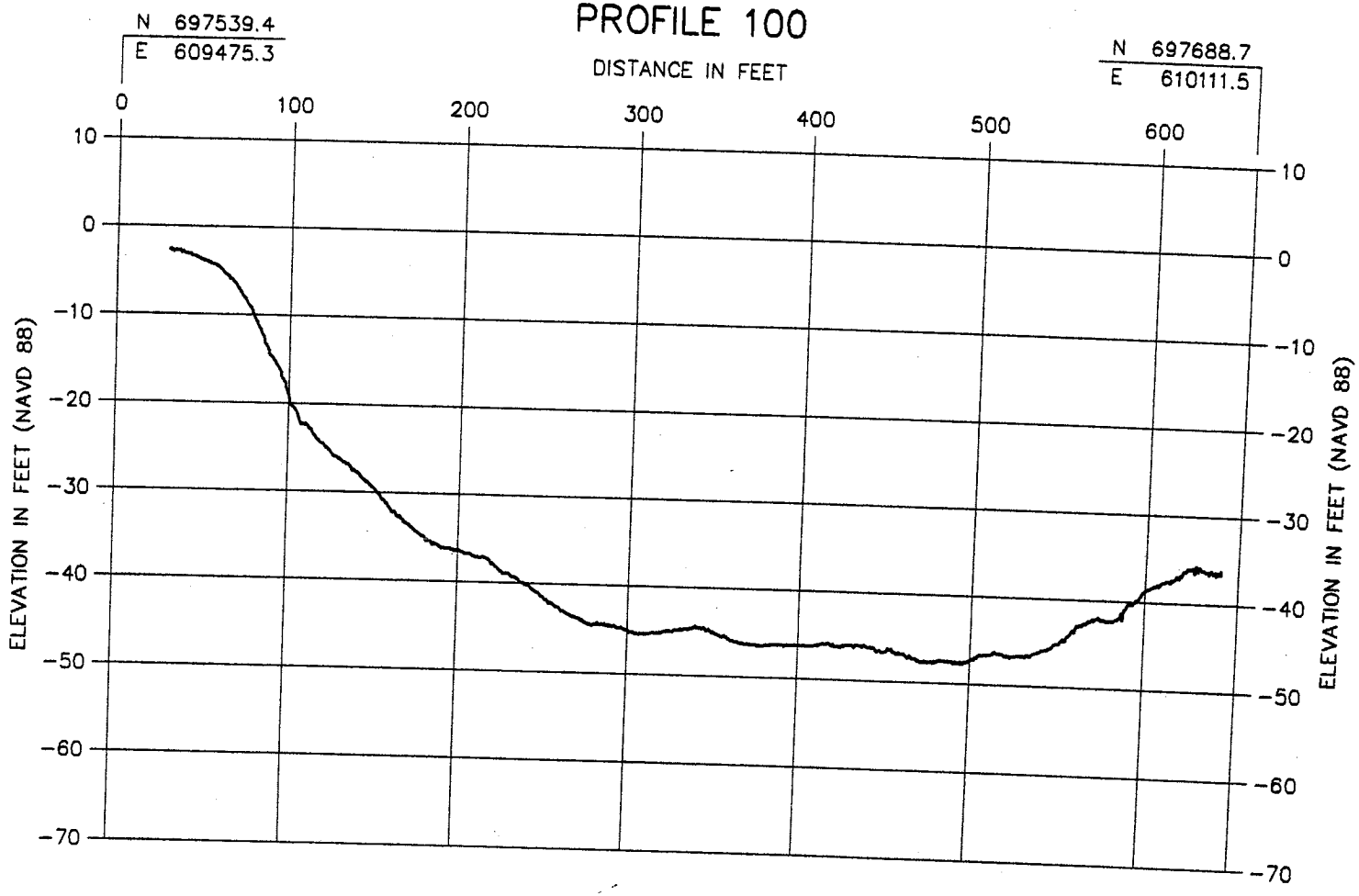
PROFILE 99



LEGEND:

——— 200 kHz FREQUENCY

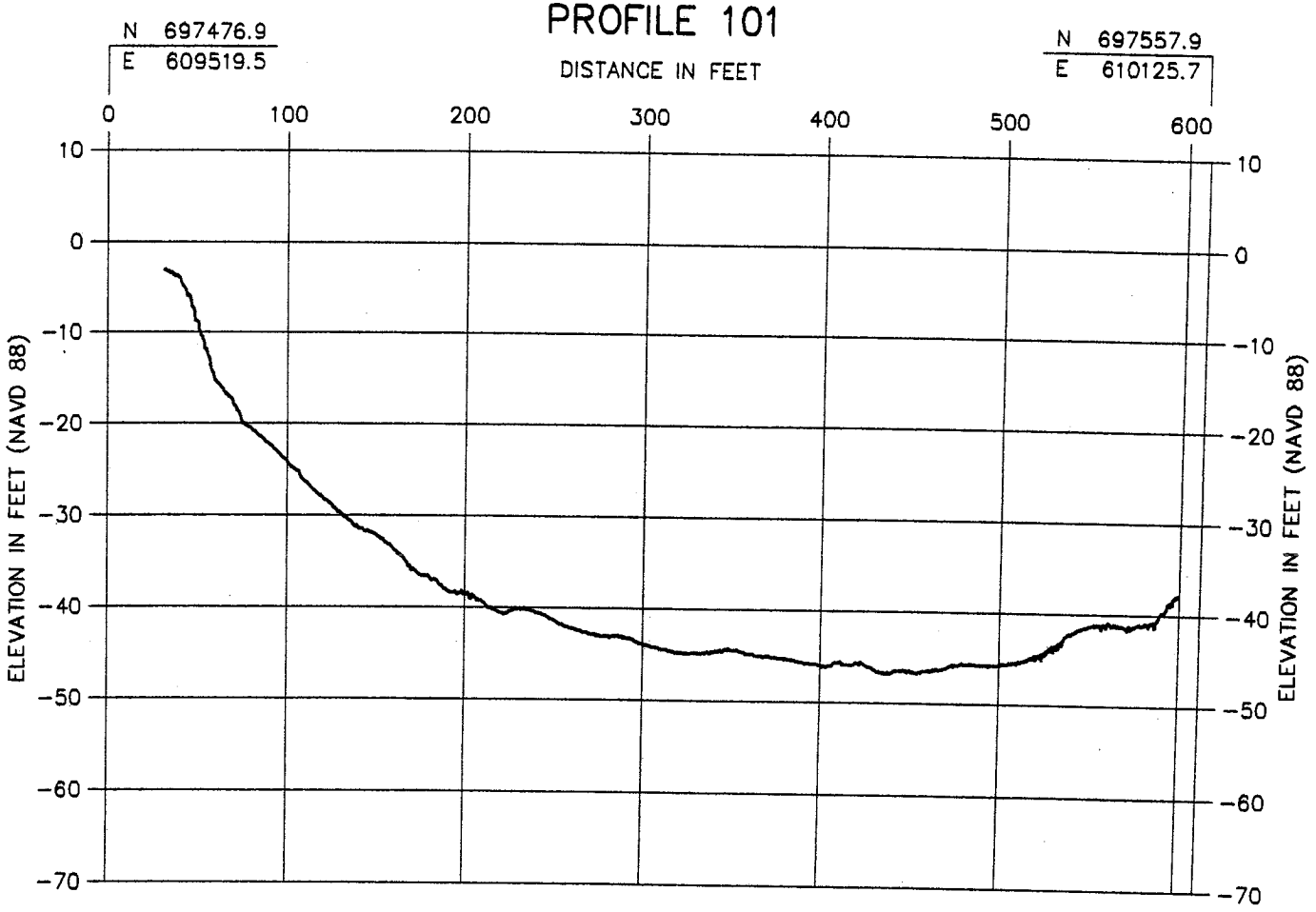
PROFILE 100



LEGEND:

——— 200 kHz FREQUENCY

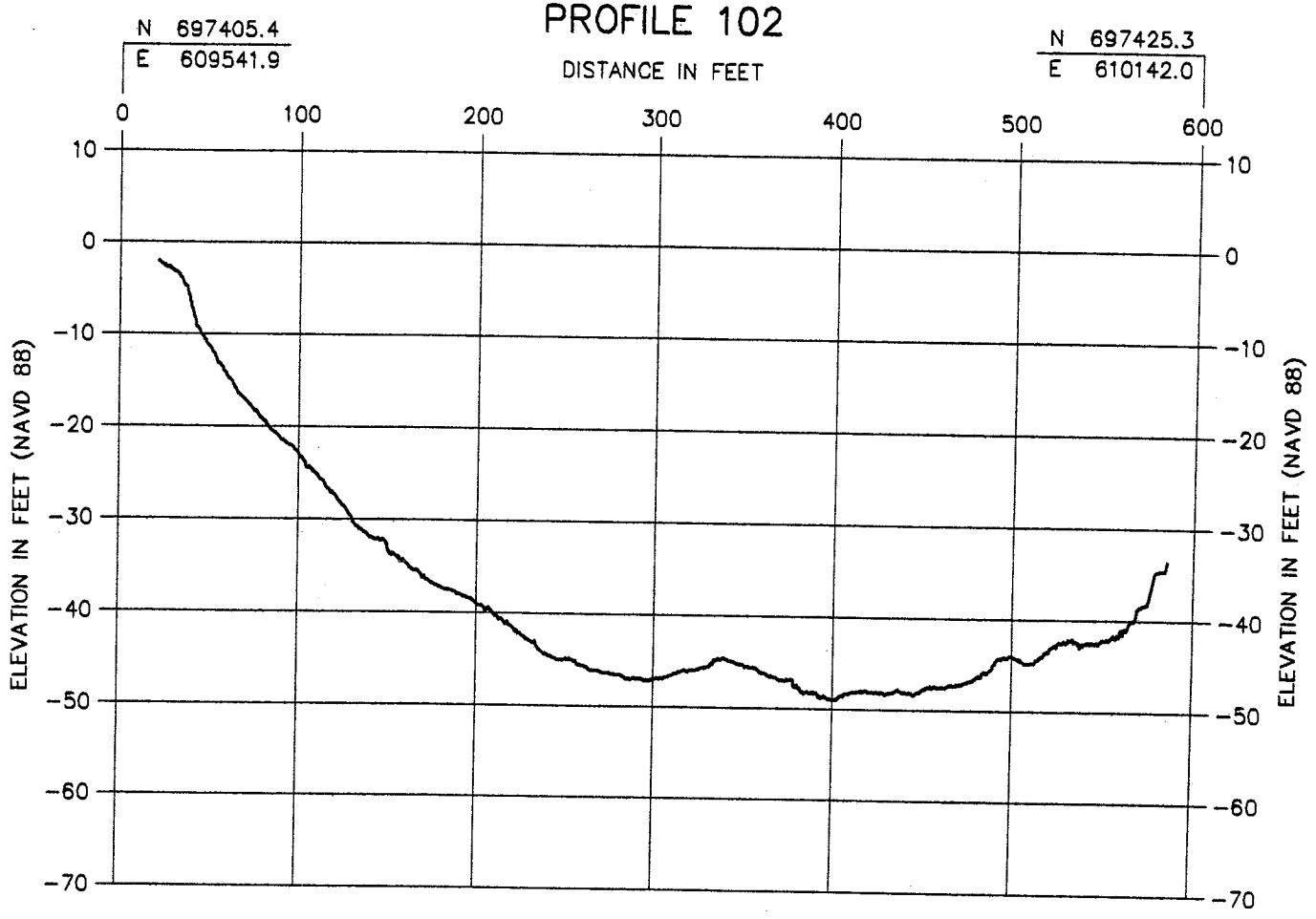
PROFILE 101



LEGEND:

——— 200 kHz FREQUENCY

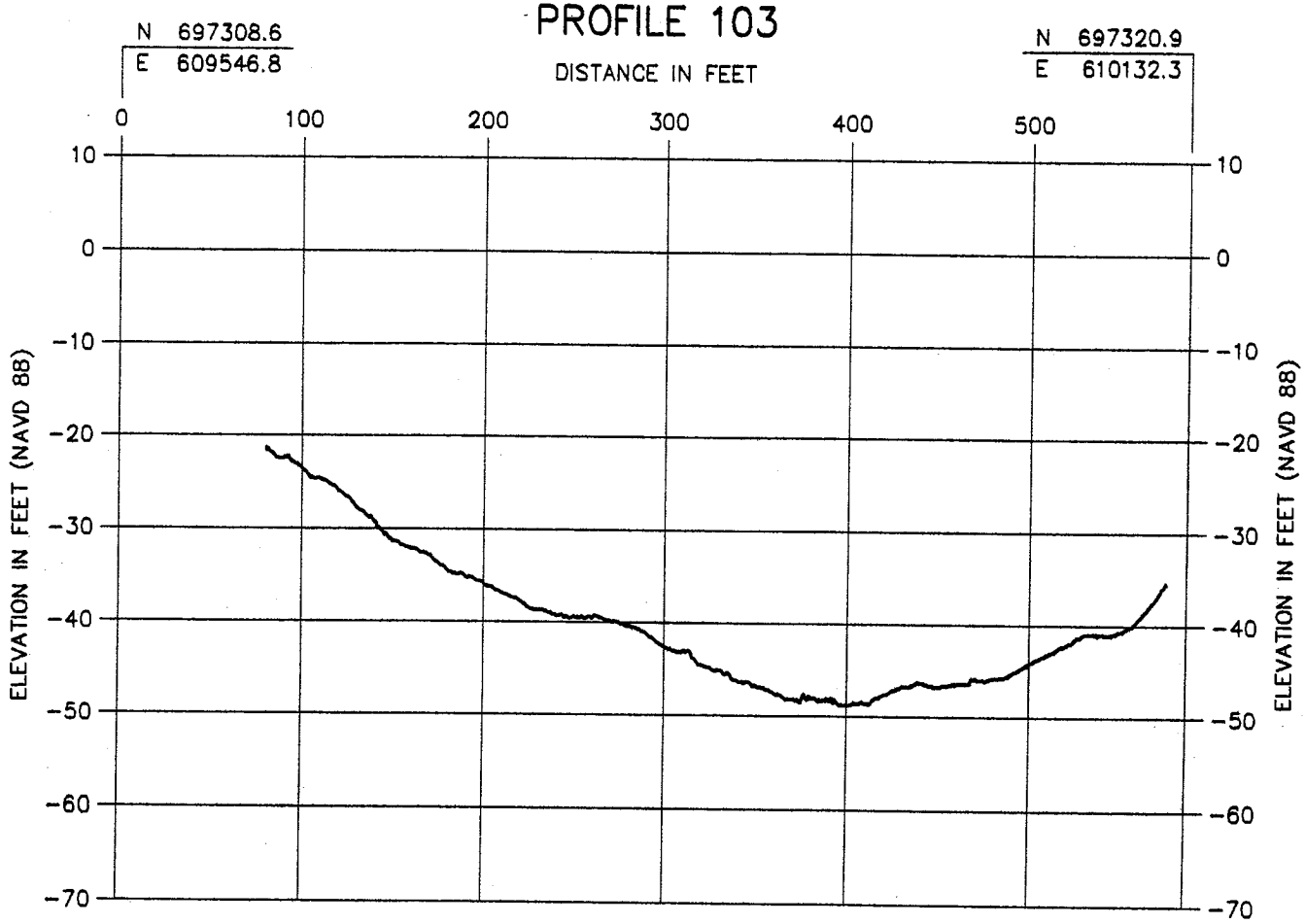
PROFILE 102



LEGEND:

——— 200 kHz FREQUENCY

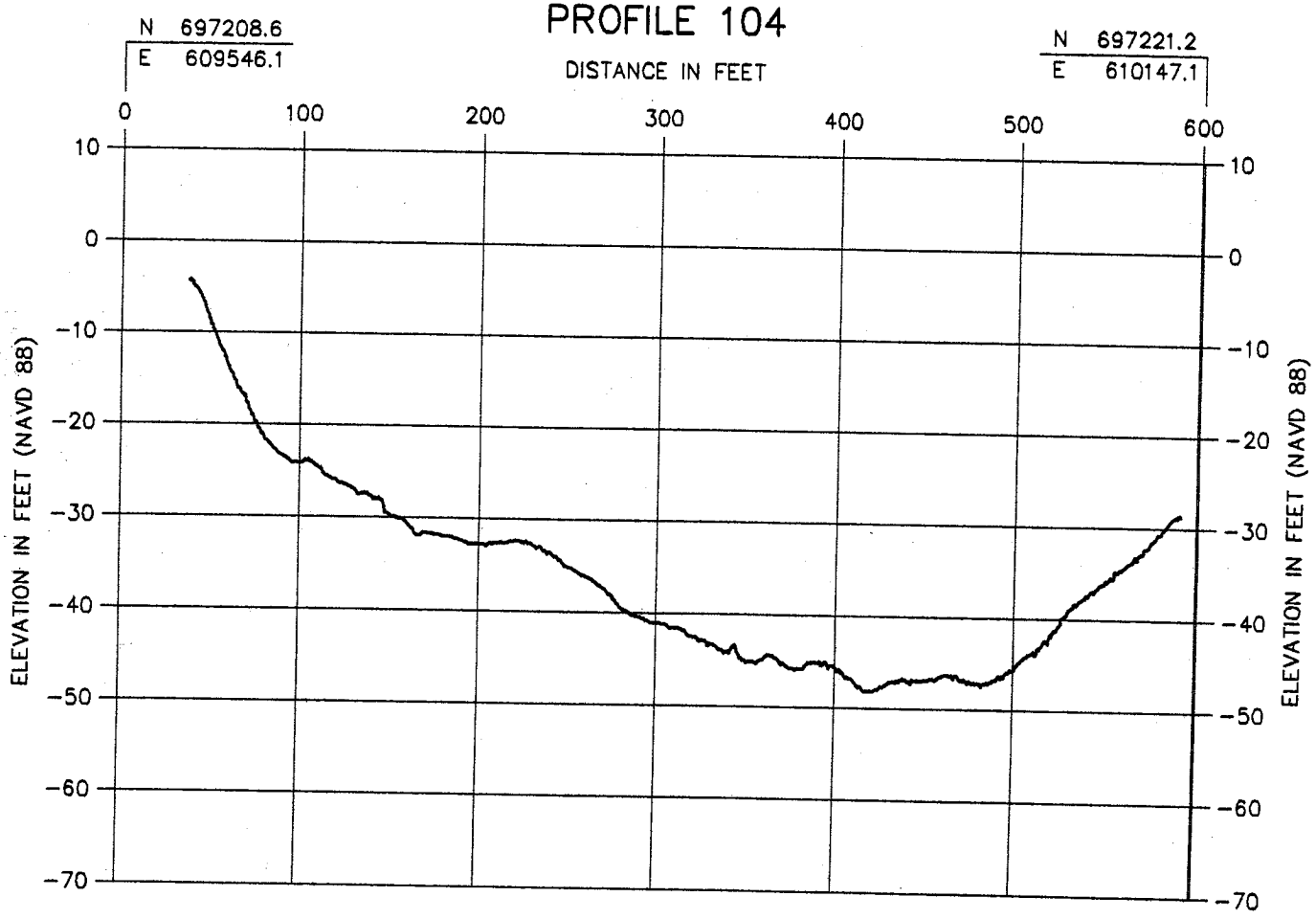
PROFILE 103



LEGEND:

——— 200 kHz FREQUENCY

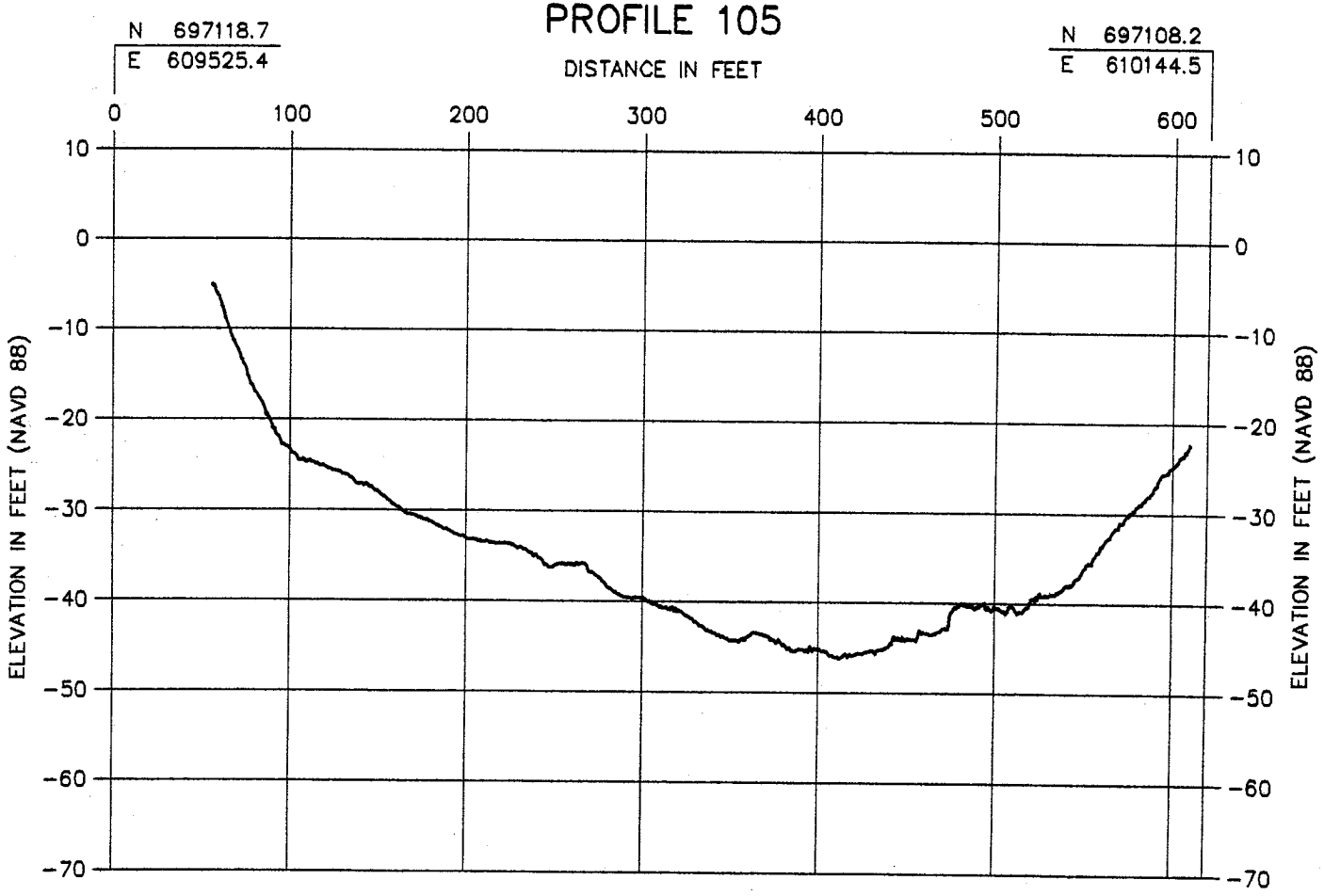
PROFILE 104



LEGEND:

——— 200 kHz FREQUENCY

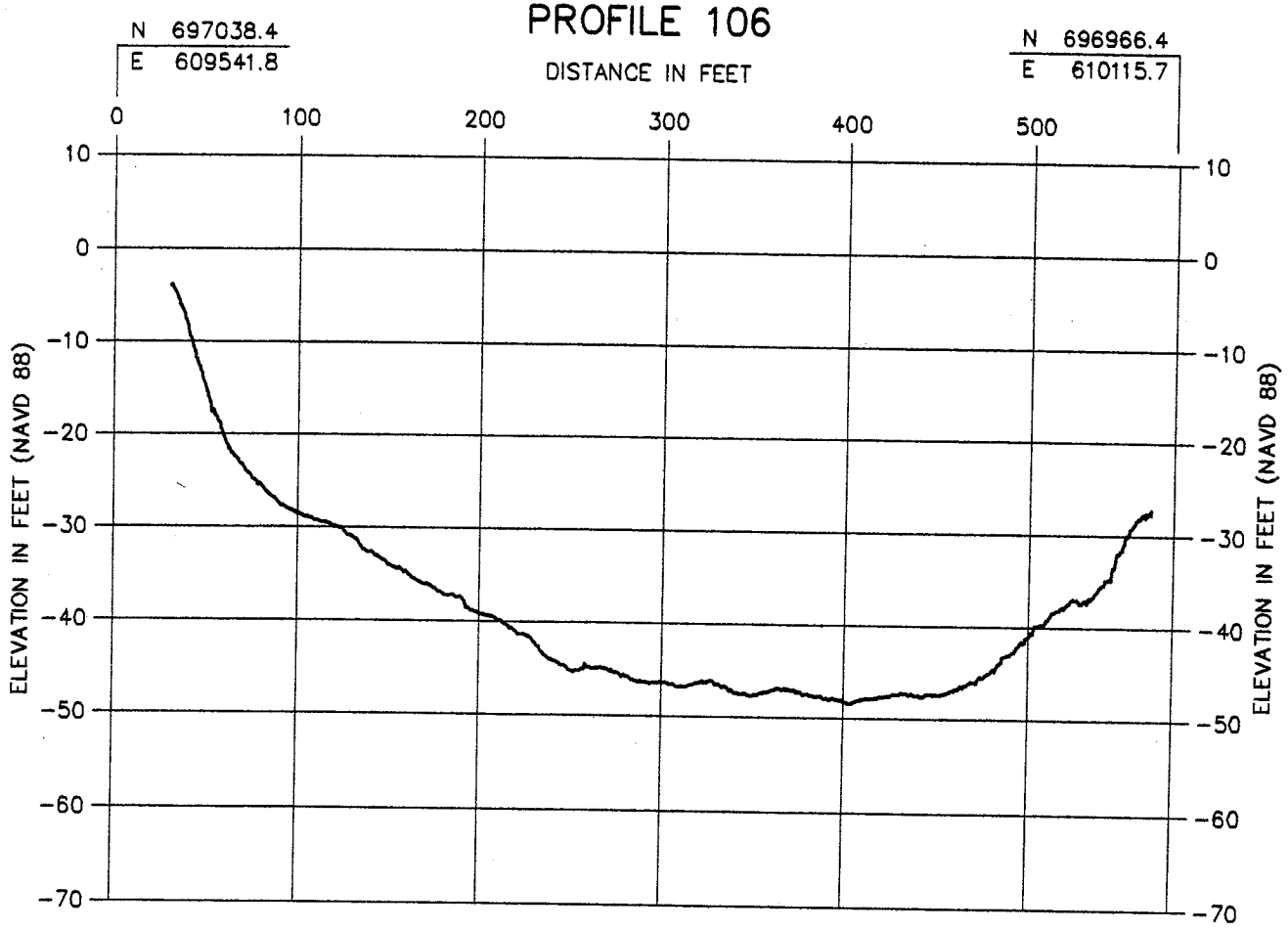
PROFILE 105



LEGEND:

——— 200 kHz FREQUENCY

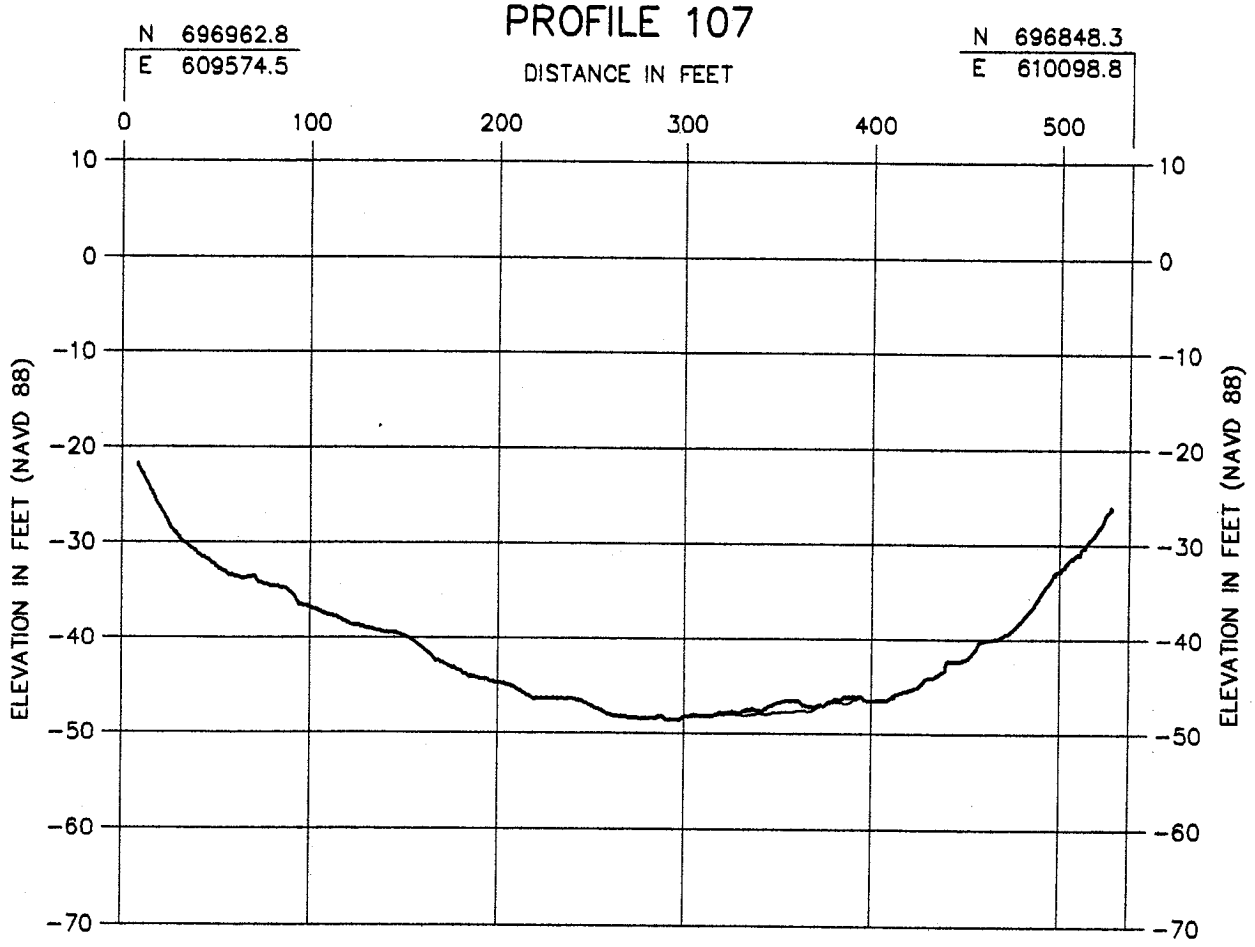
PROFILE 106



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 107

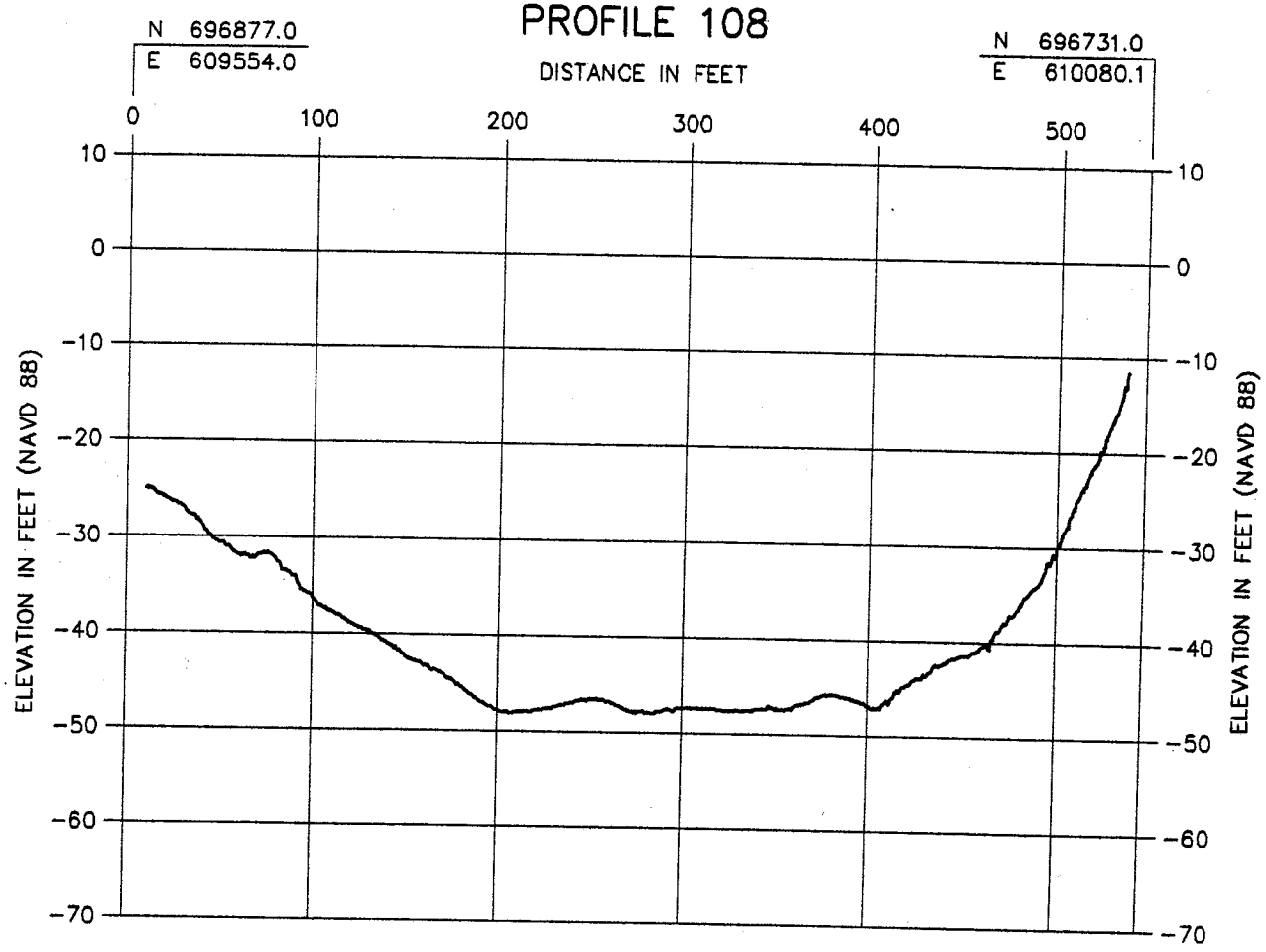


LEGEND:

——— 200 kHz FREQUENCY

——— 24 kHz FREQUENCY

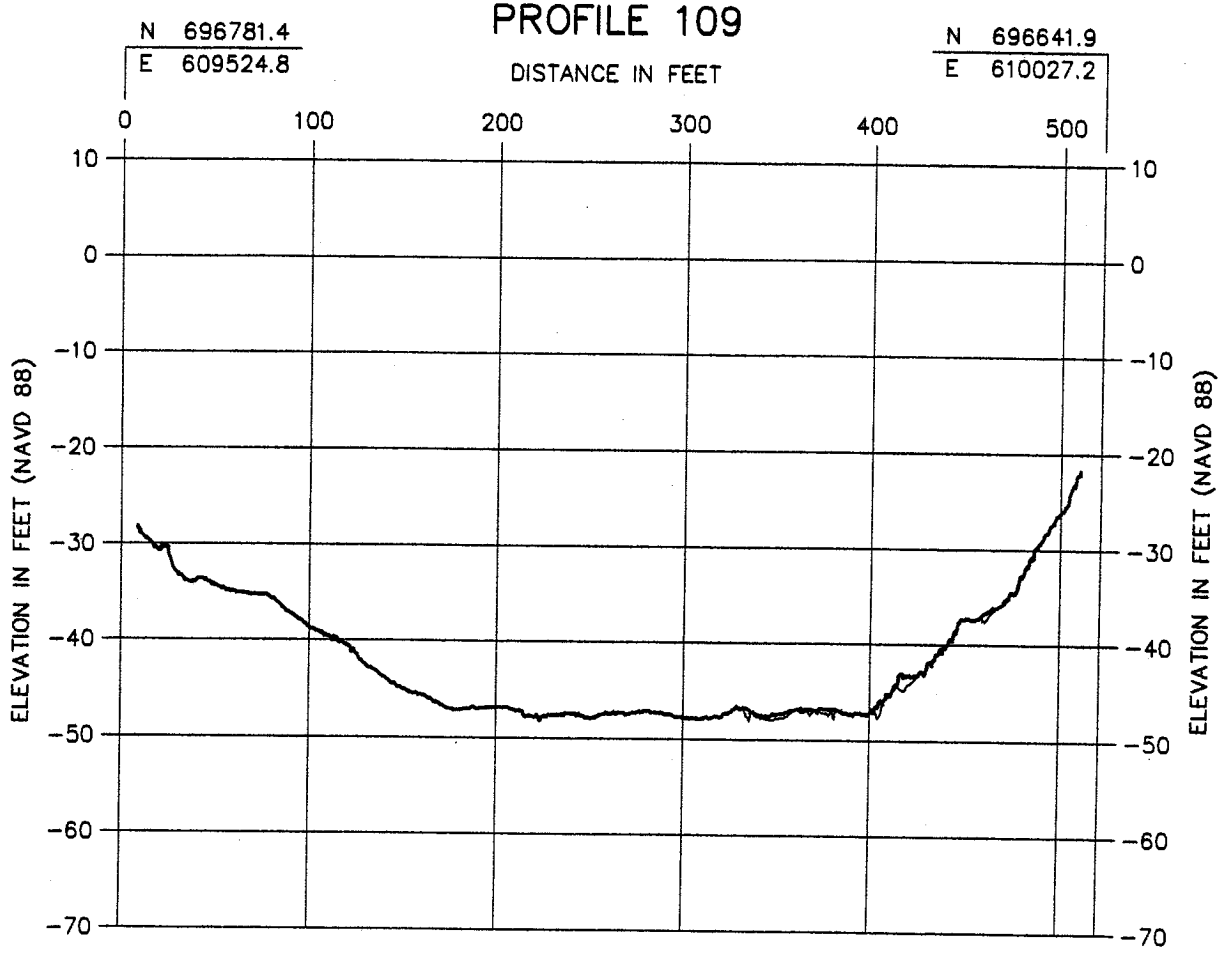
PROFILE 108



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 109

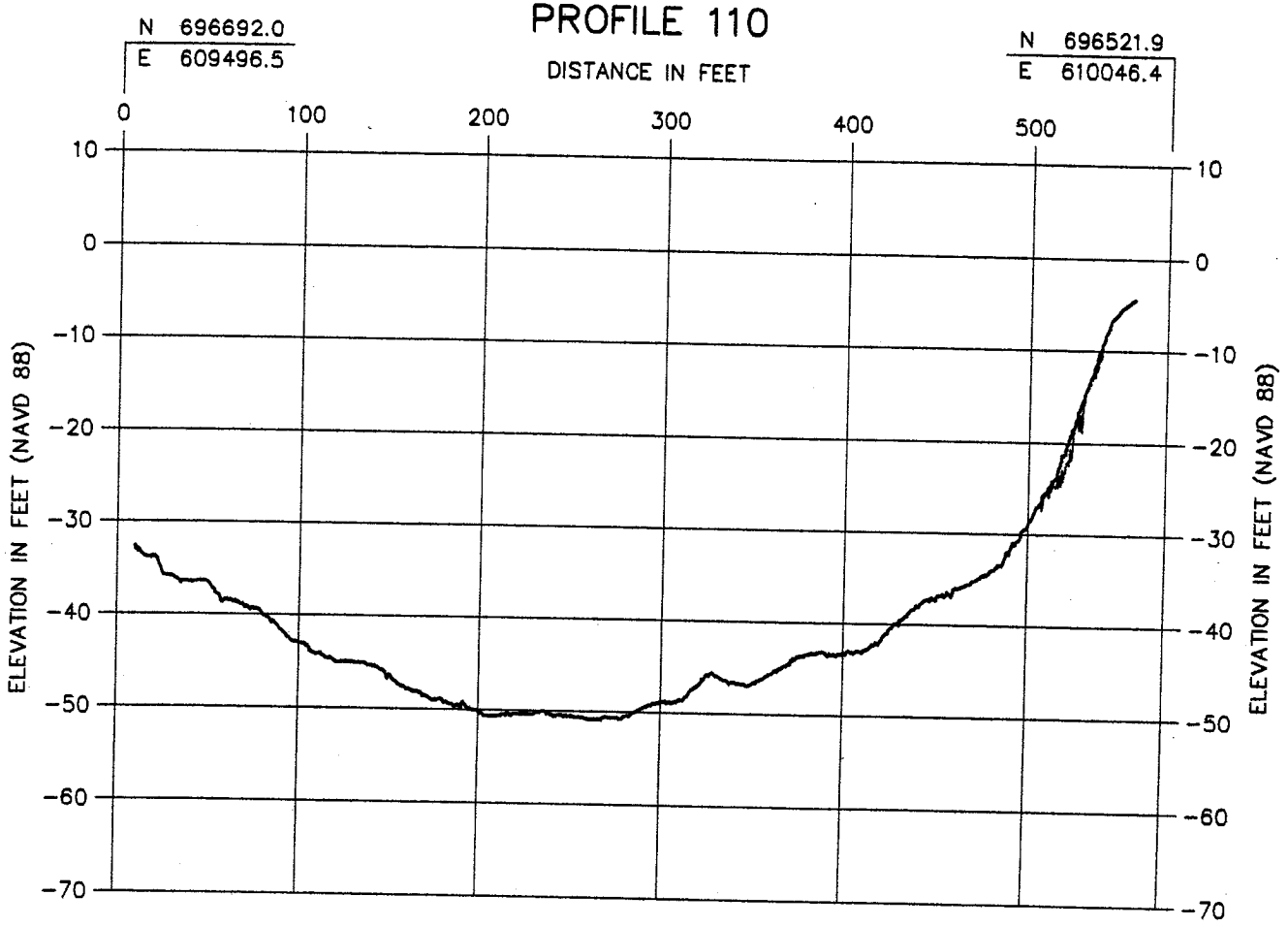


LEGEND:

200 kHz FREQUENCY

24 kHz FREQUENCY

PROFILE 110

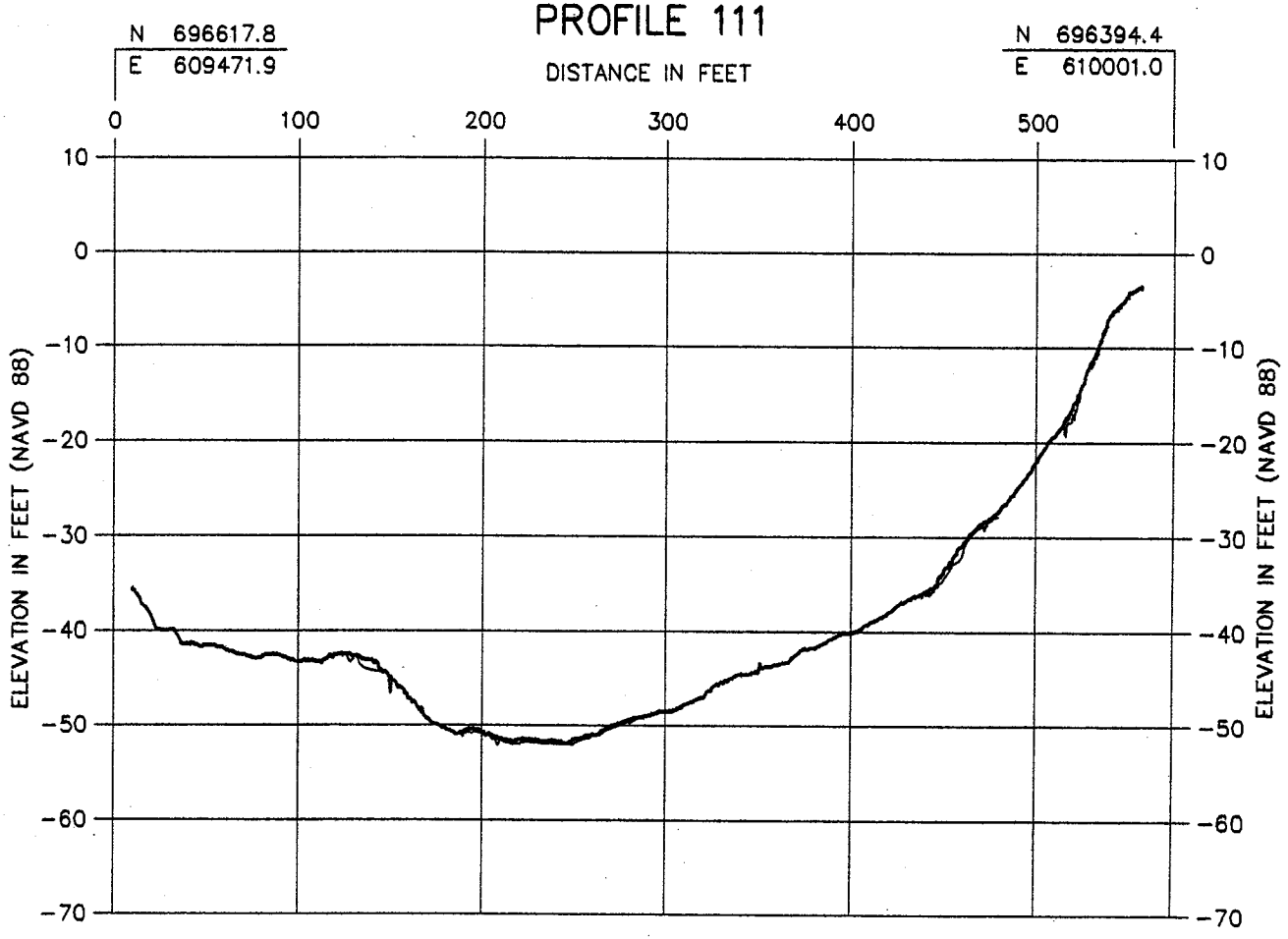


LEGEND:

——— 200 kHz FREQUENCY

——— 24 kHz FREQUENCY

PROFILE 111

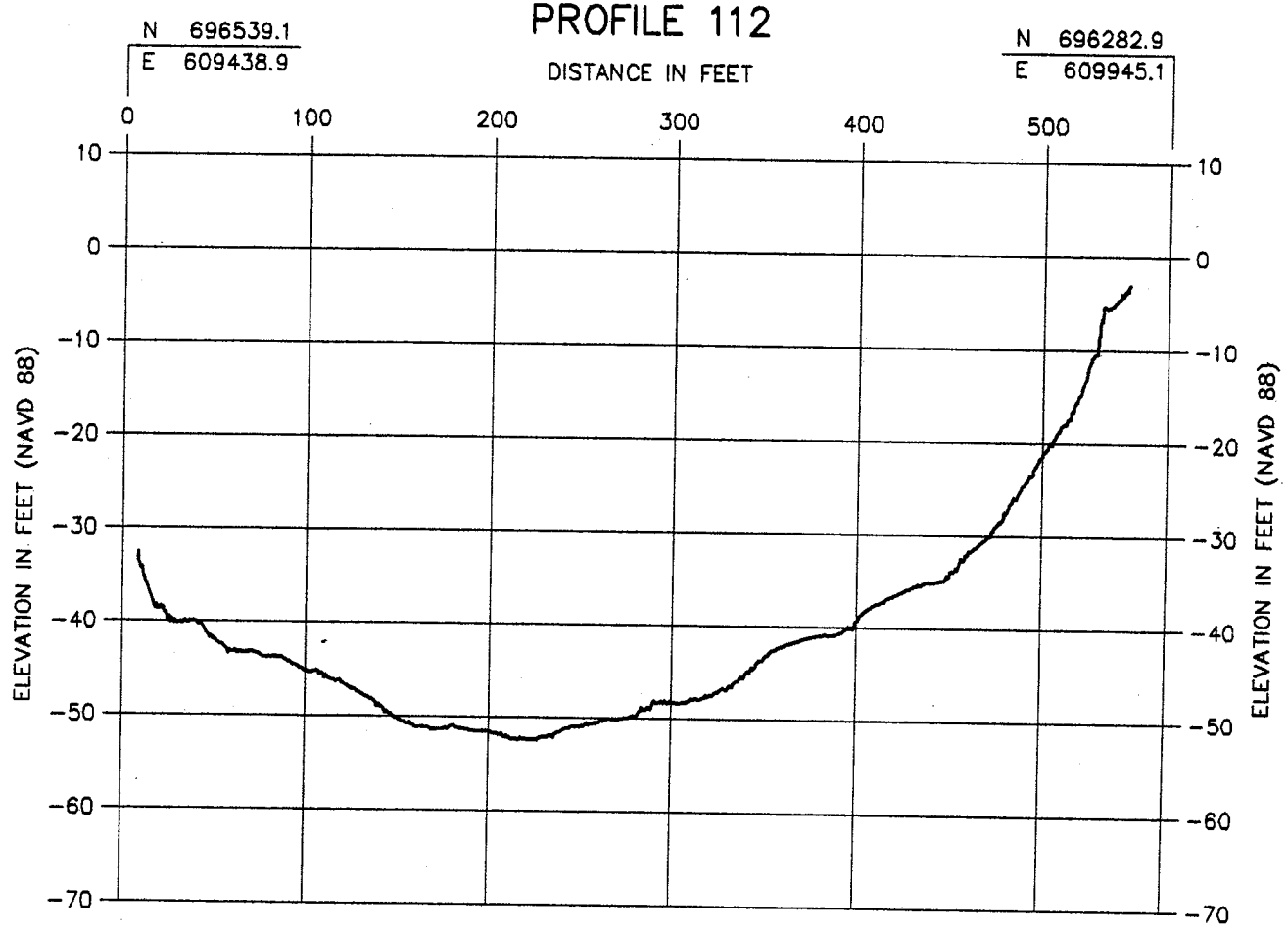


LEGEND:

——— 200 kHz FREQUENCY

——— 24 kHz FREQUENCY

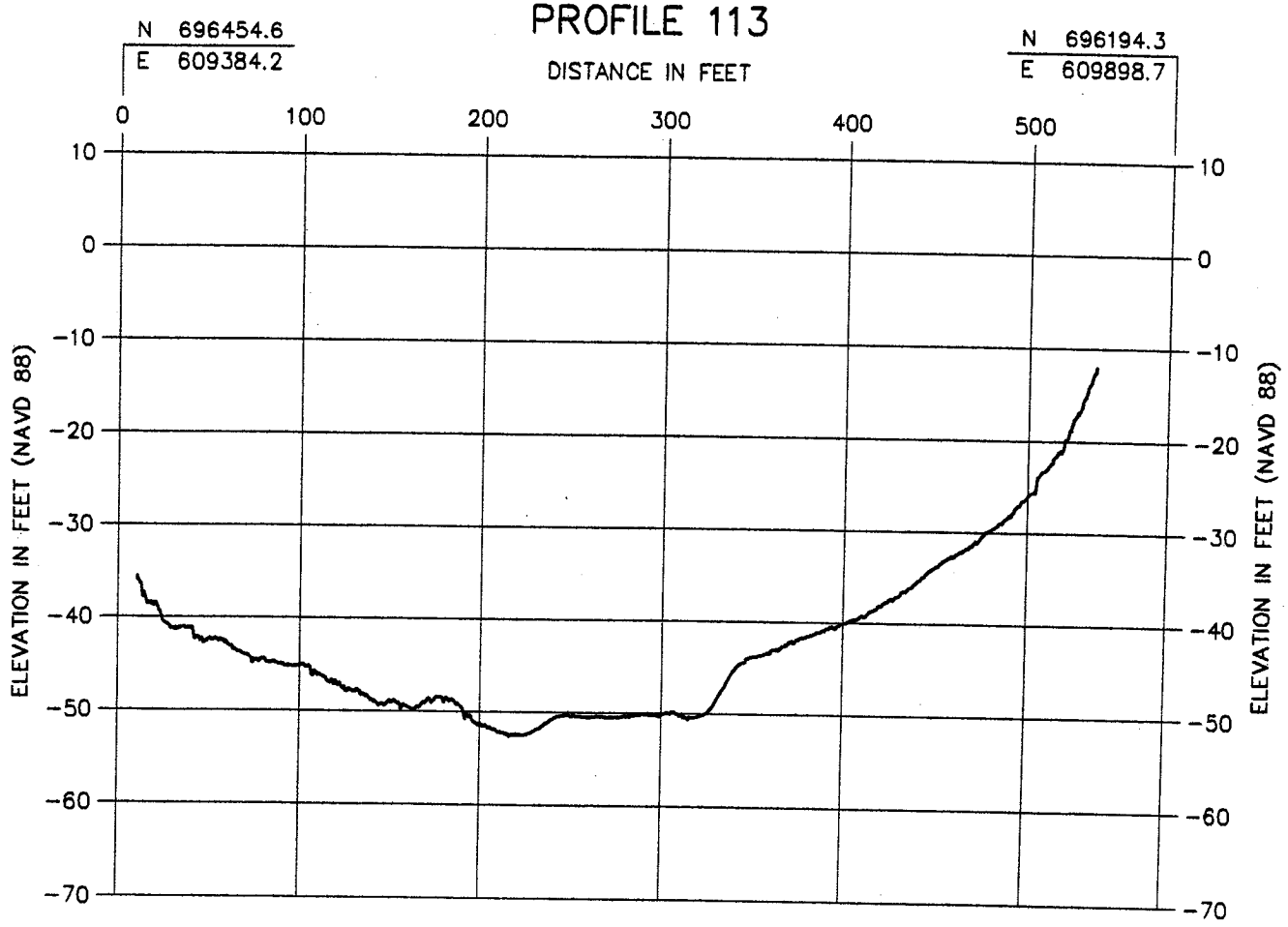
PROFILE 112



LEGEND:

——— 200 kHz FREQUENCY

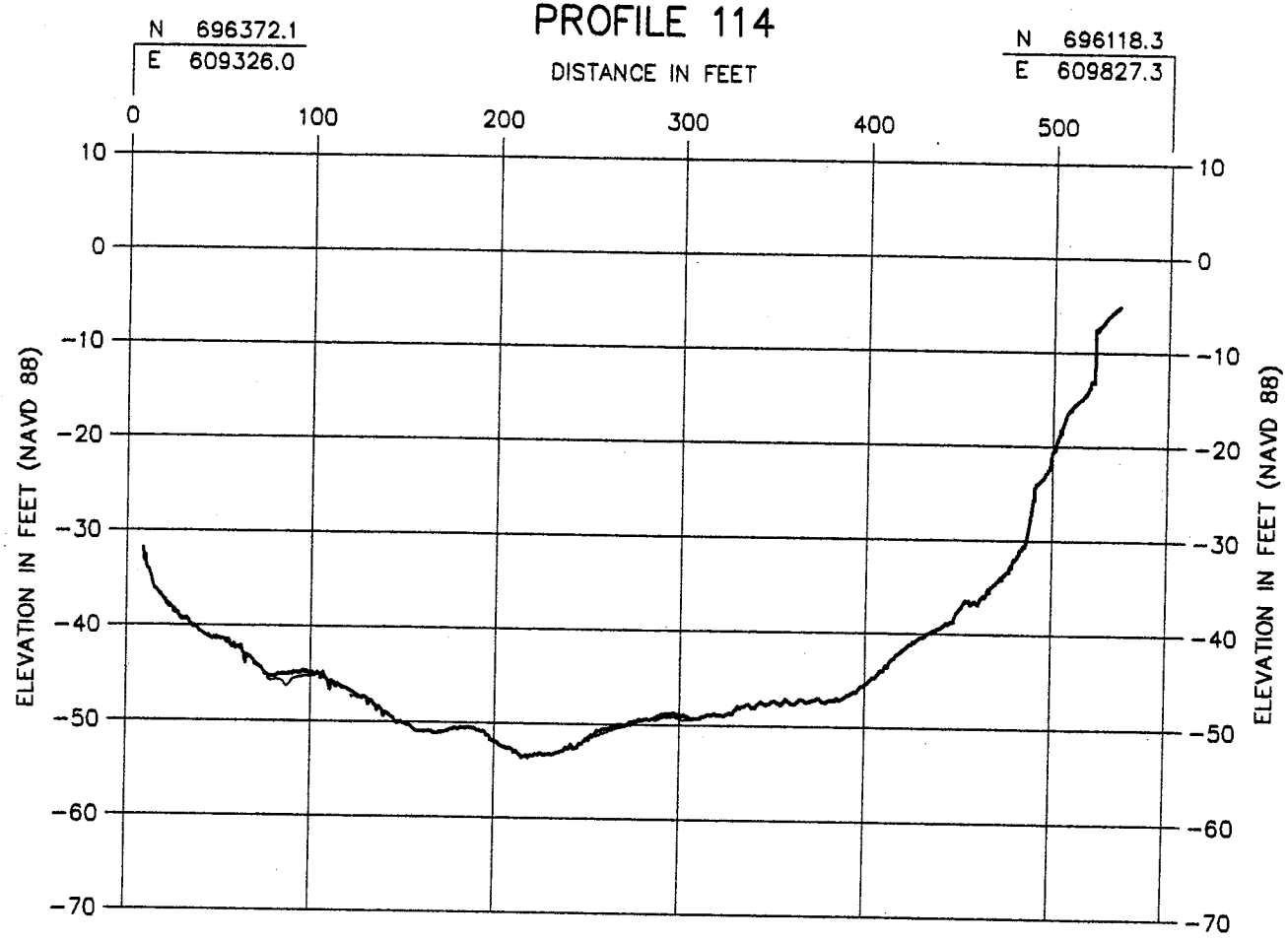
PROFILE 113



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 114

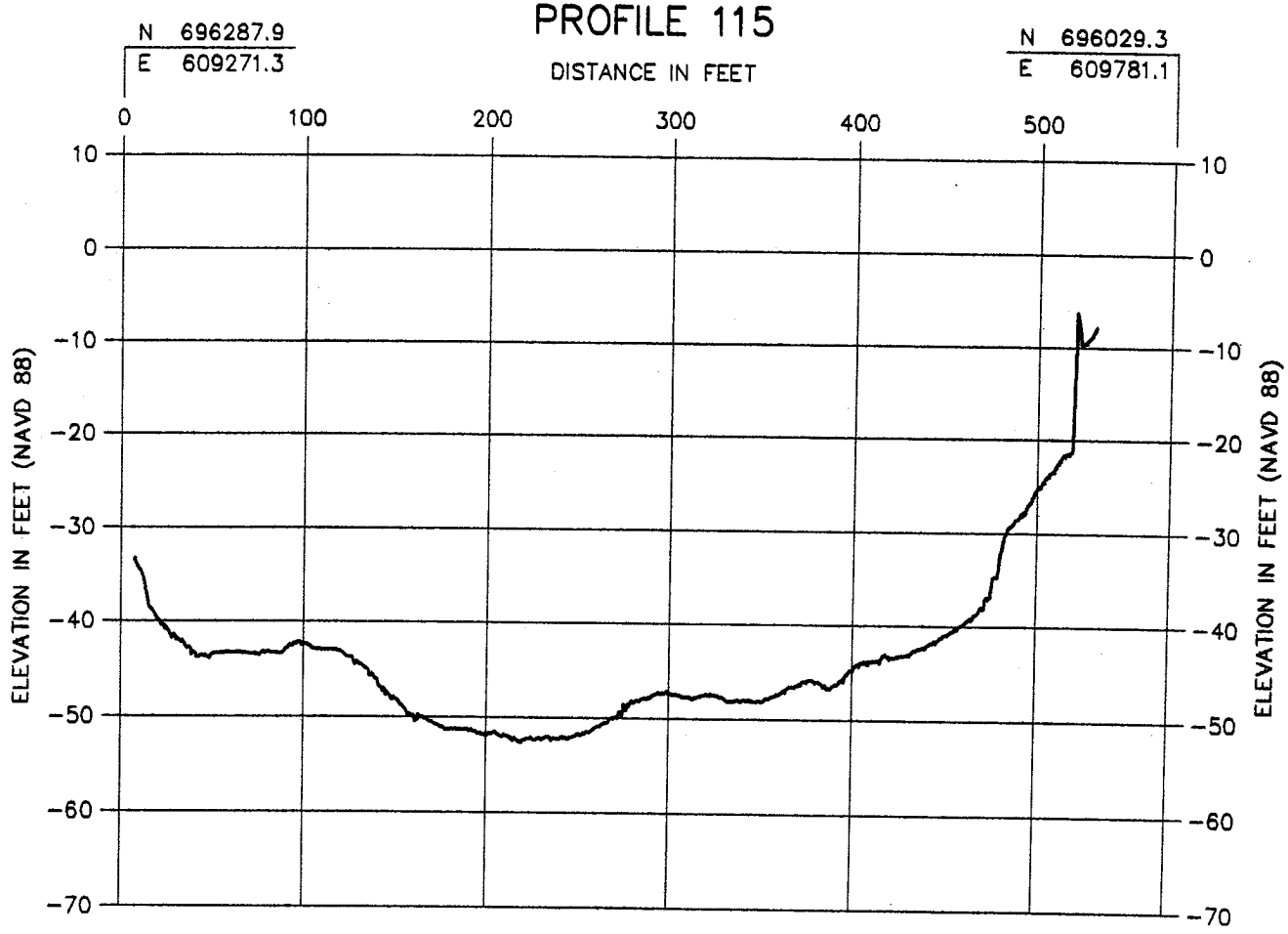


LEGEND:

200 kHz FREQUENCY

24 kHz FREQUENCY

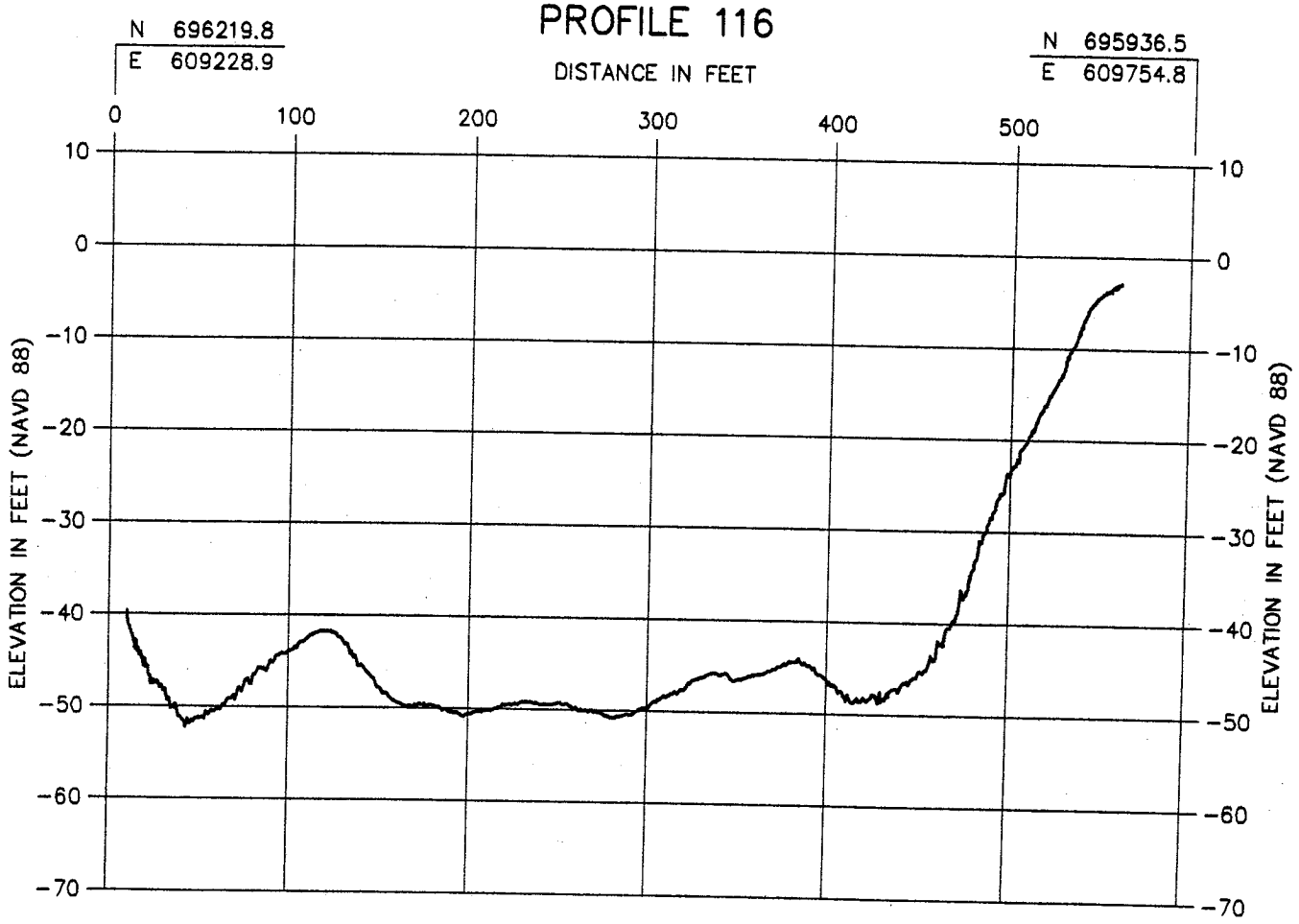
PROFILE 115



LEGEND:

——— 200 kHz FREQUENCY

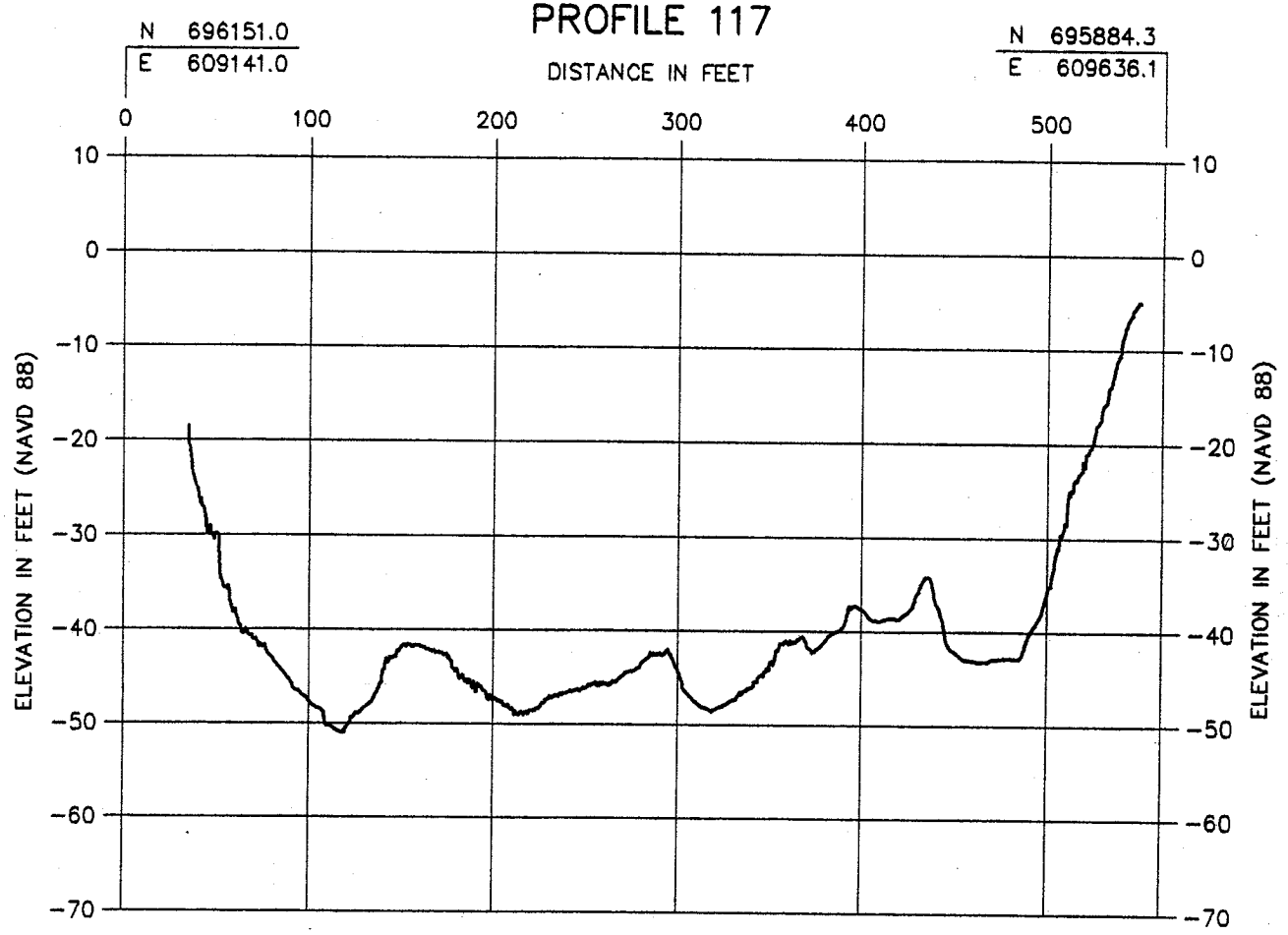
PROFILE 116



LEGEND:

——— 200 kHz FREQUENCY

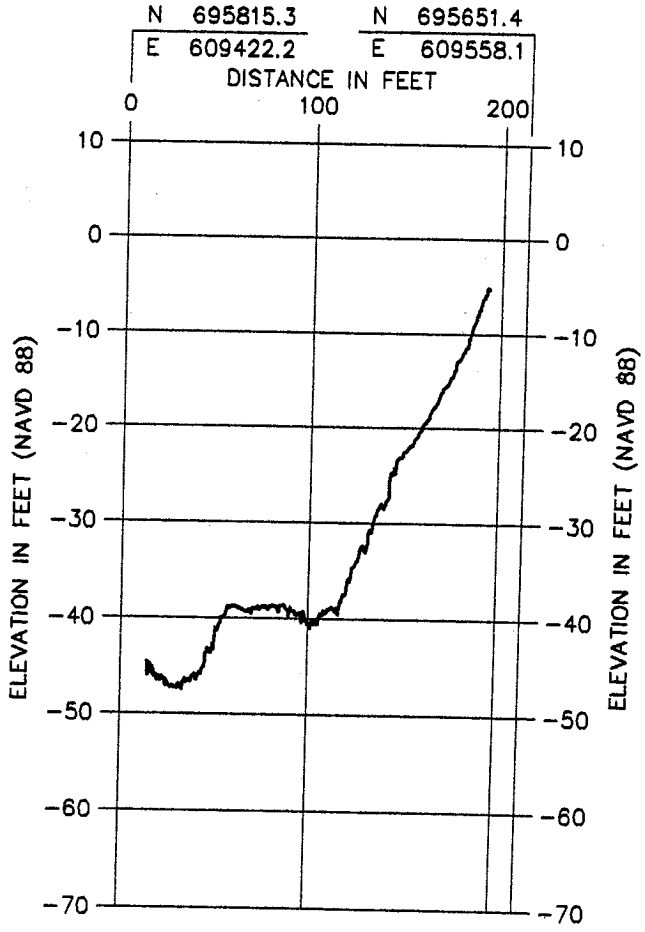
PROFILE 117



LEGEND:

——— 200 kHz FREQUENCY

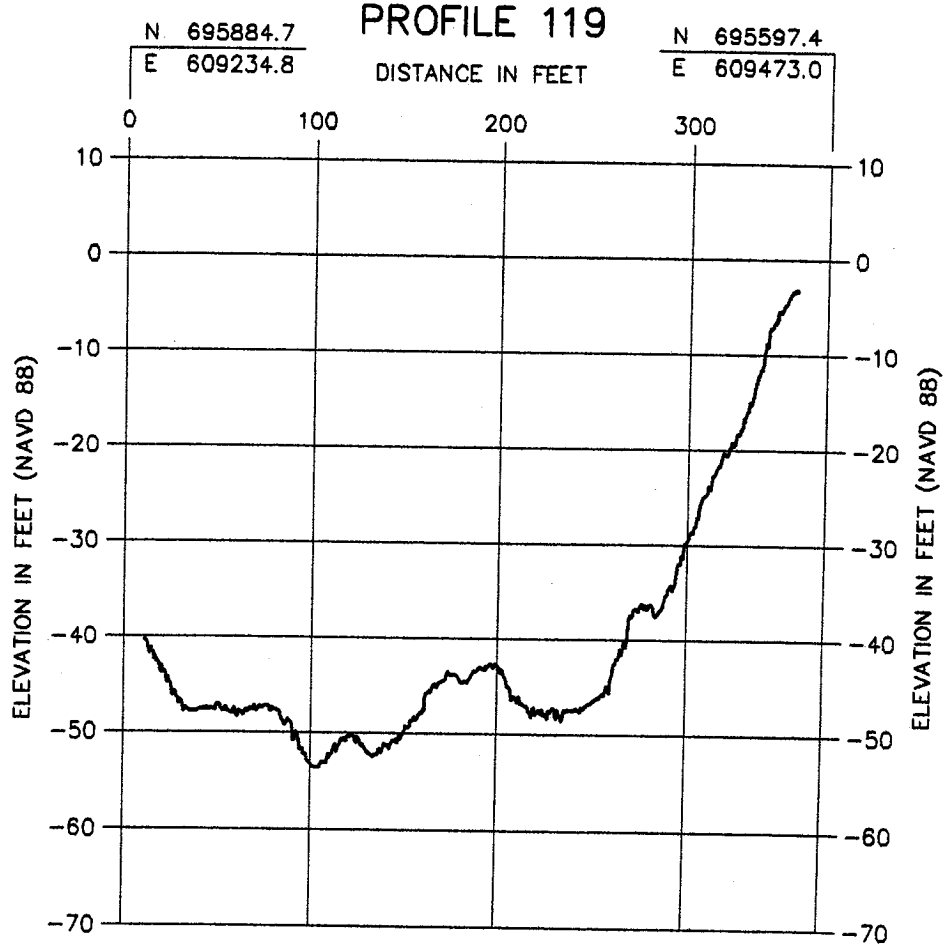
PROFILE 118



LEGEND:

——— 200 kHz FREQUENCY

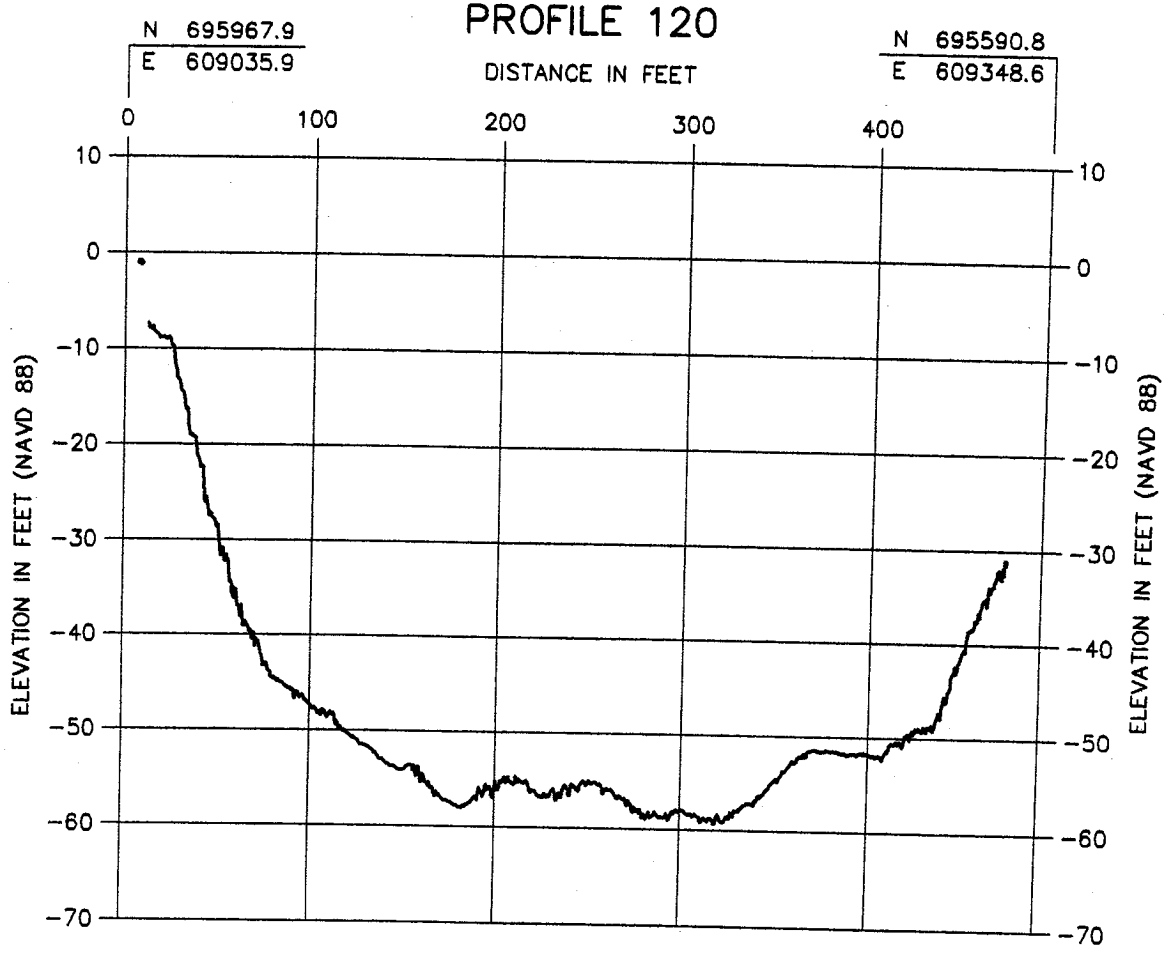
PROFILE 119



LEGEND:

——— 200 kHz FREQUENCY

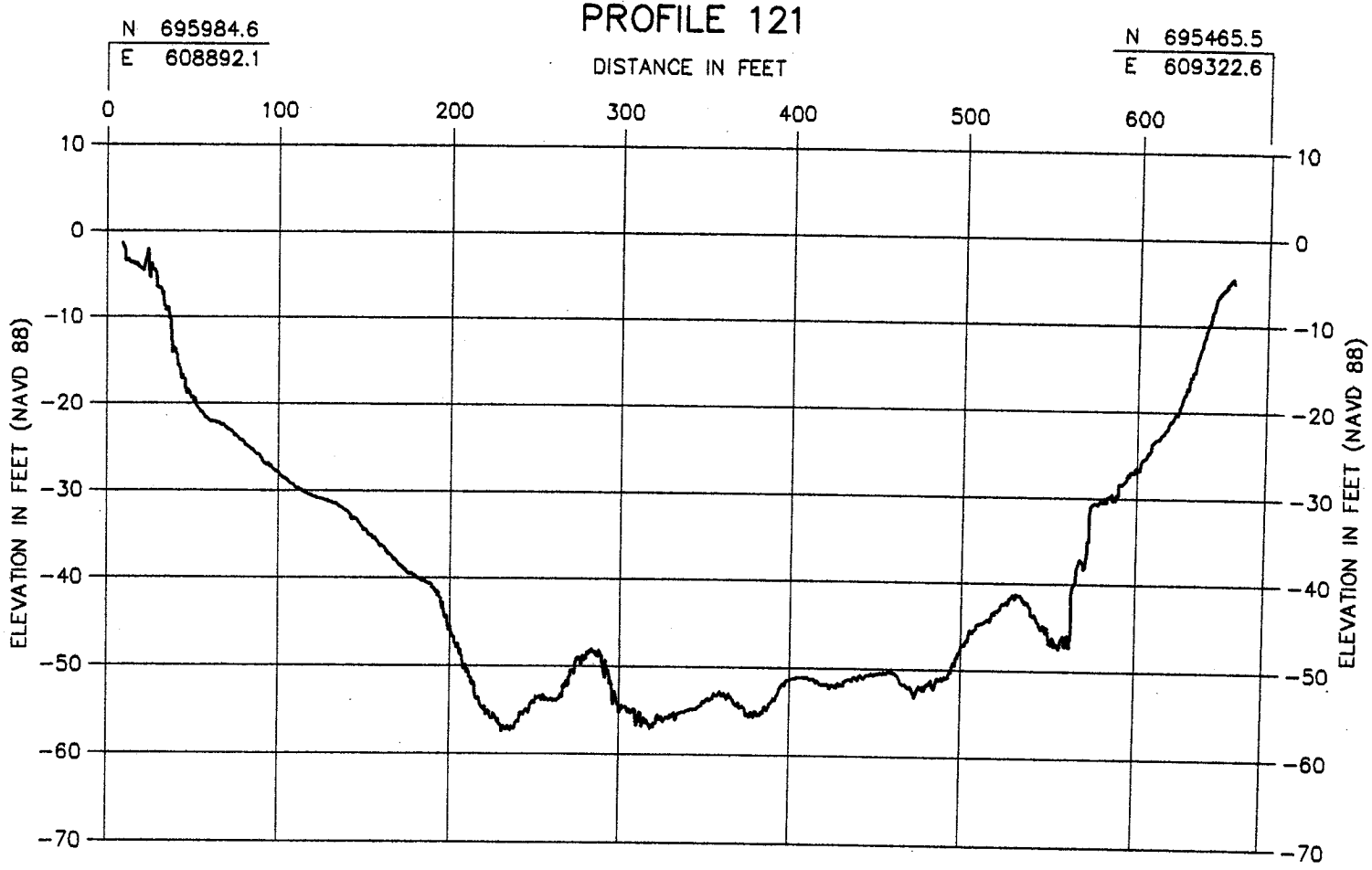
PROFILE 120



LEGEND:

——— 200 kHz FREQUENCY

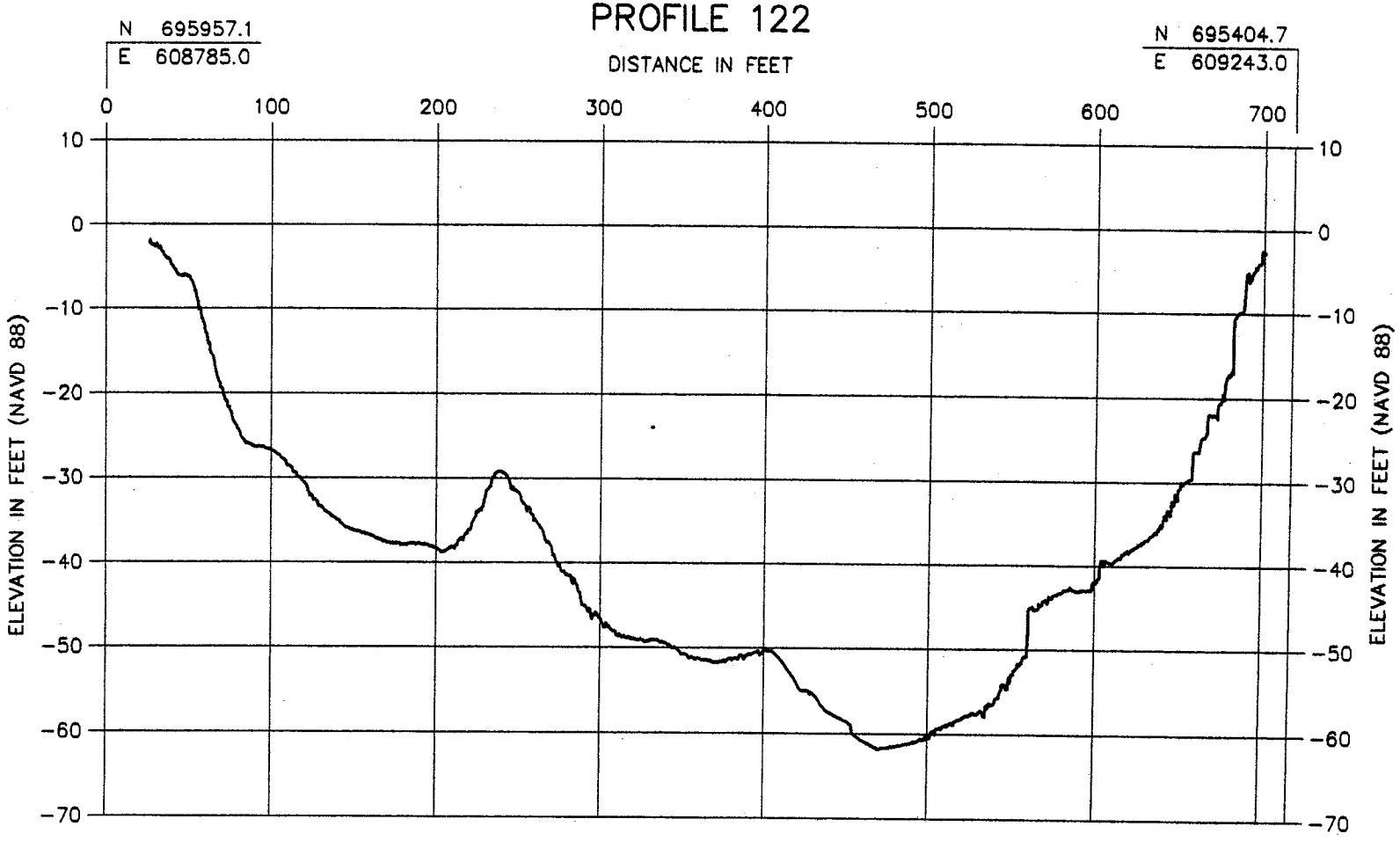
PROFILE 121



LEGEND:

——— 200 kHz FREQUENCY

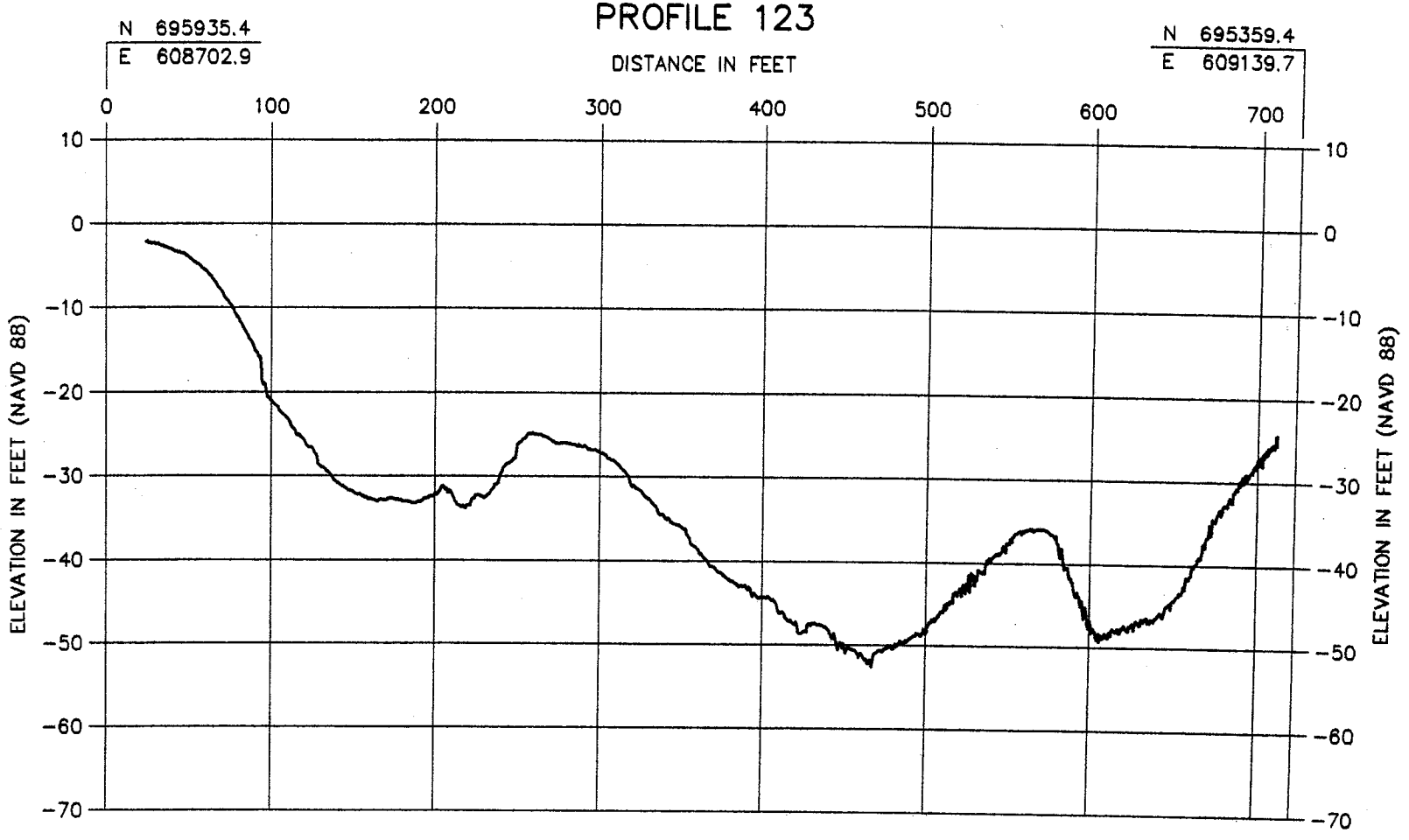
PROFILE 122



LEGEND:

——— 200 kHz FREQUENCY

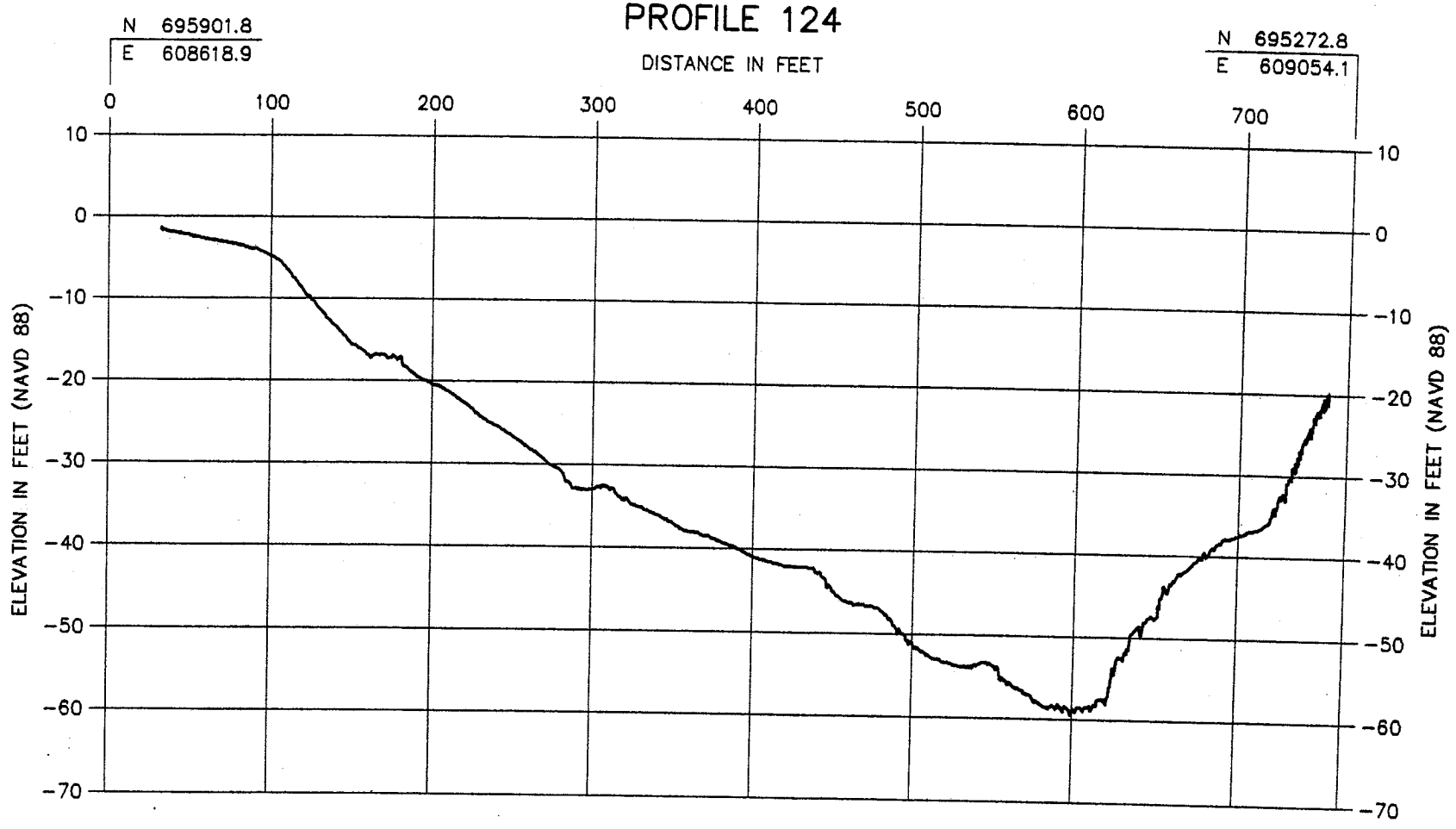
PROFILE 123



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 124



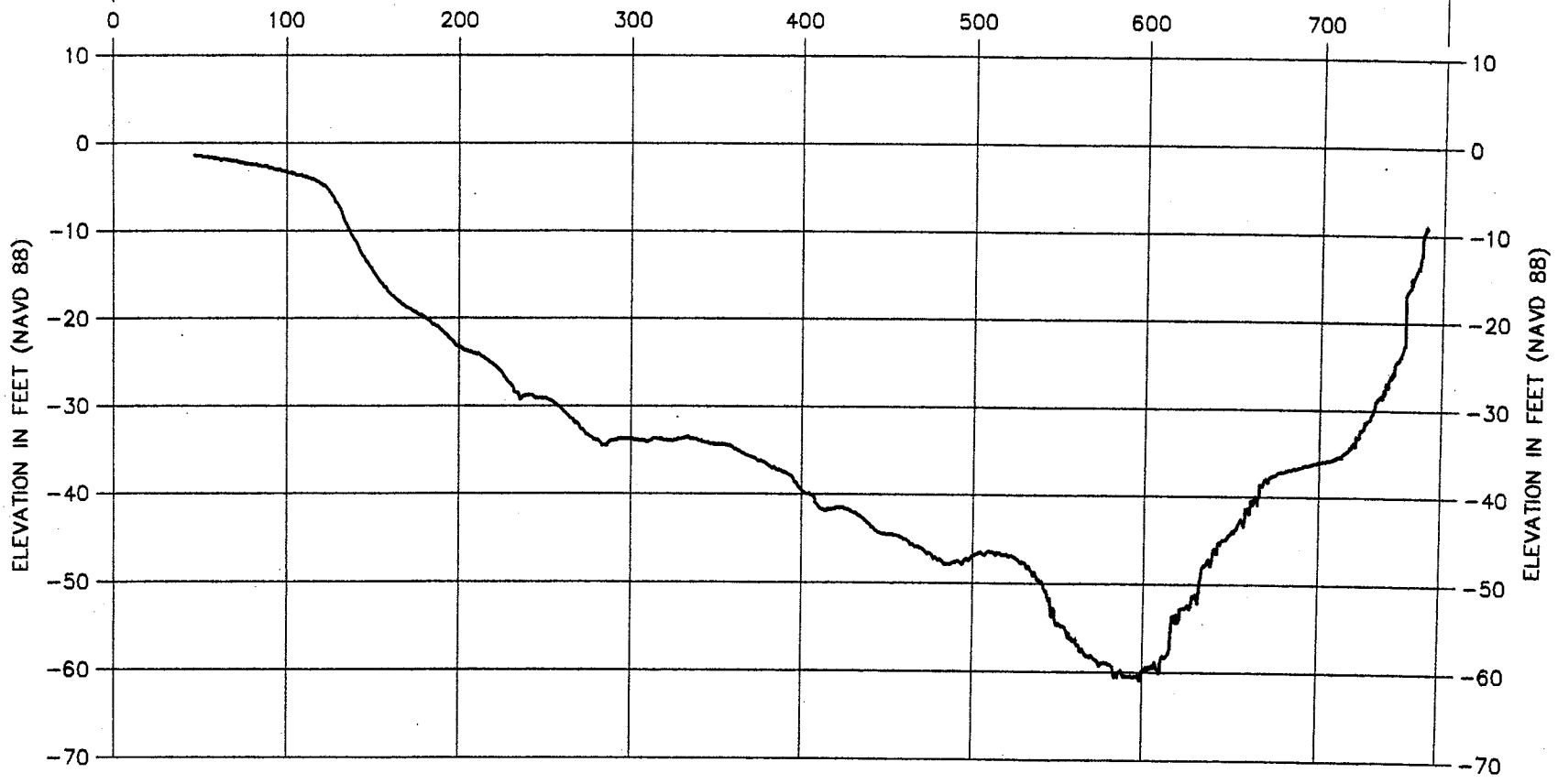
LEGEND:

——— 200 kHz FREQUENCY

PROFILE 125

N 695845.3
E 608536.3

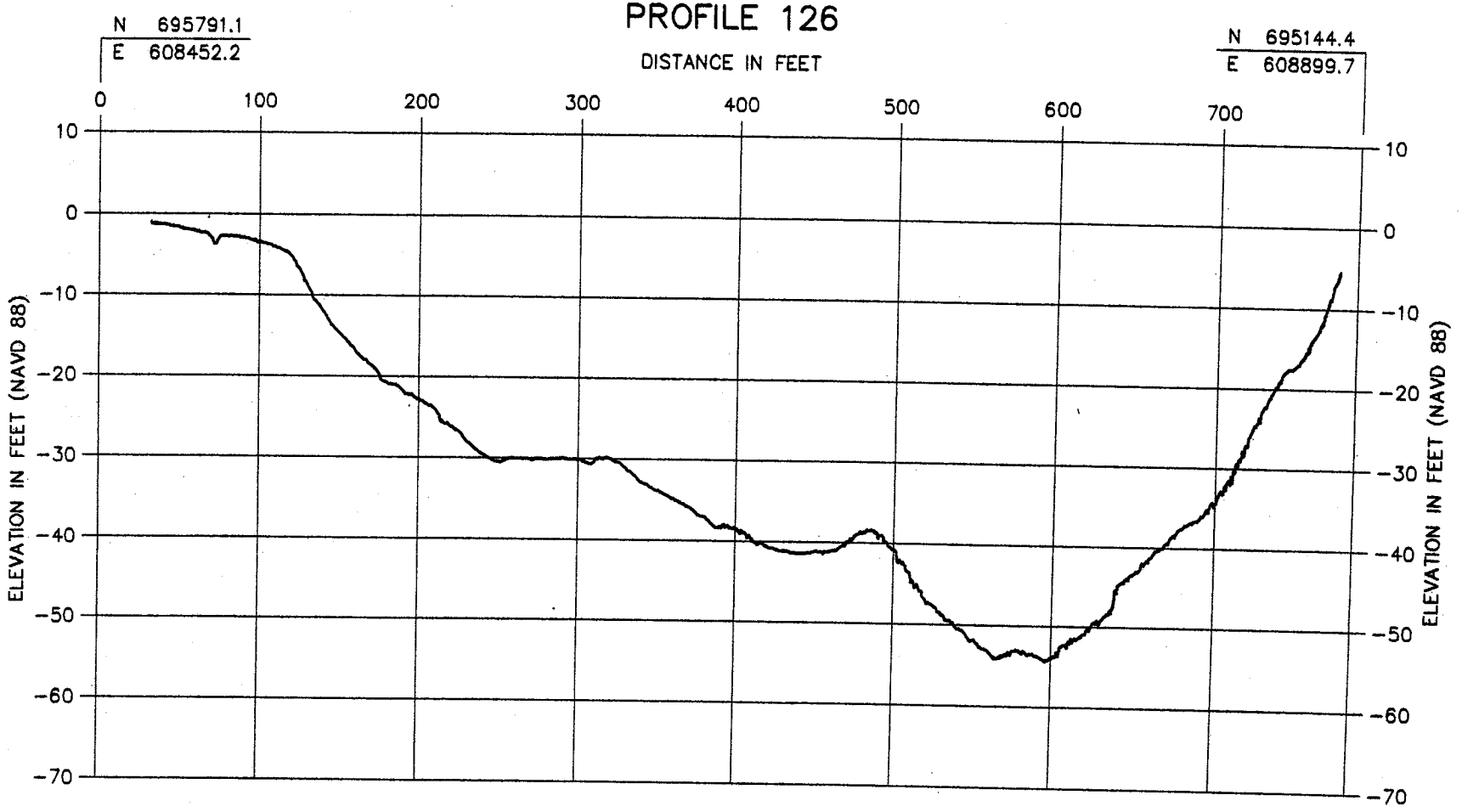
N 695211.9
E 608974.6



LEGEND:

——— 200 kHz FREQUENCY

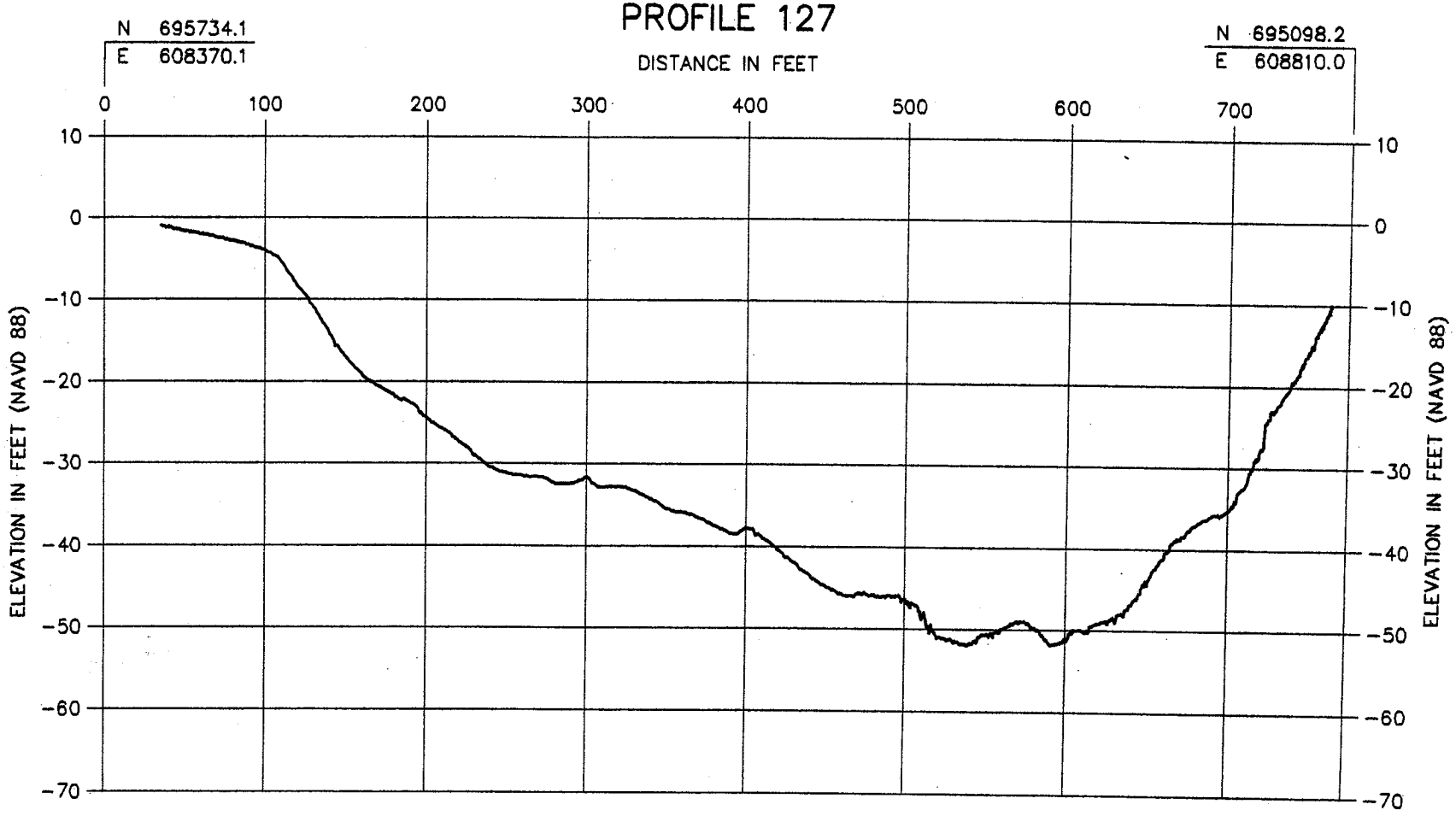
PROFILE 126



LEGEND:

——— 200 kHz FREQUENCY

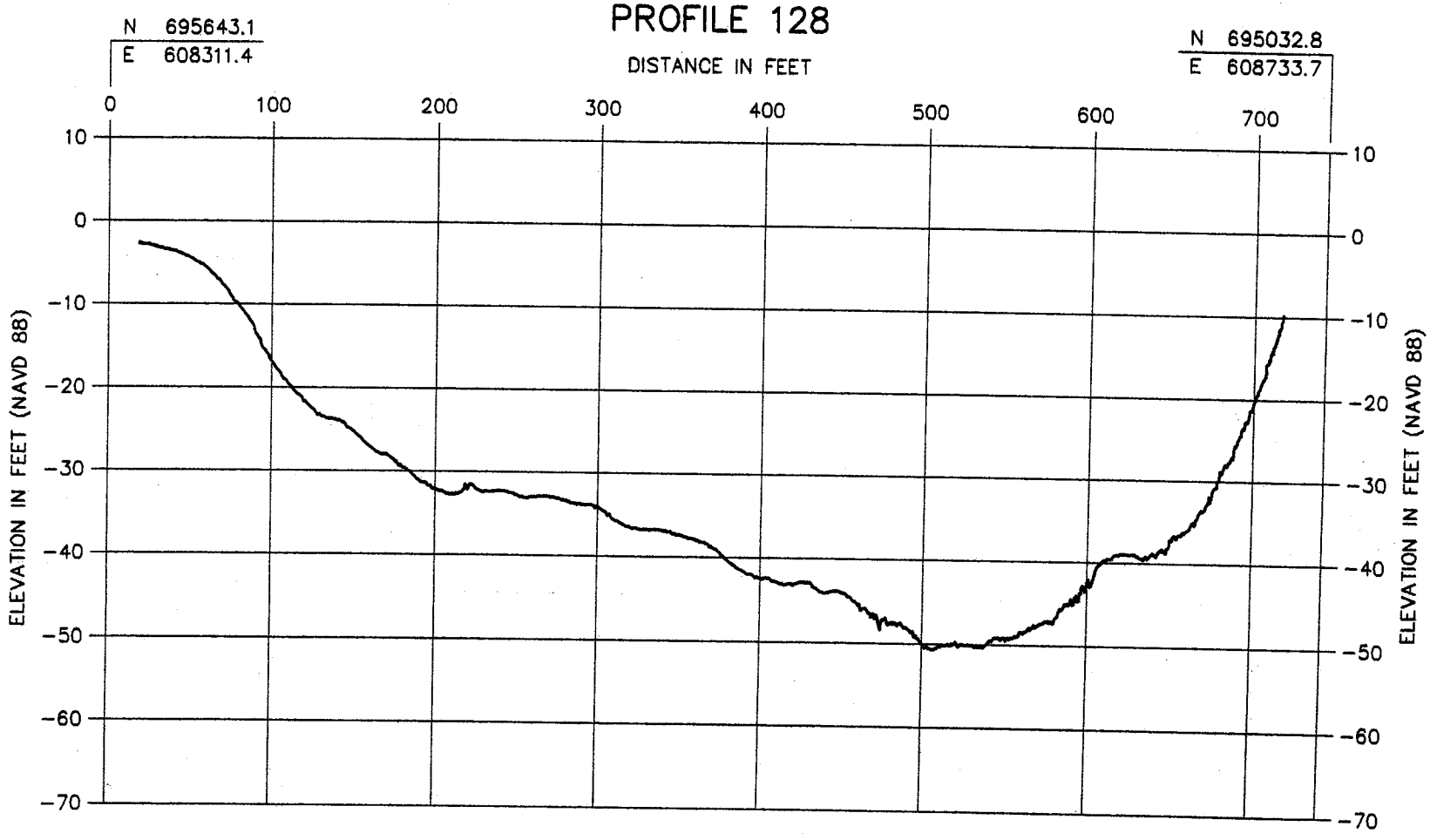
PROFILE 127



LEGEND:

——— 200 kHz FREQUENCY

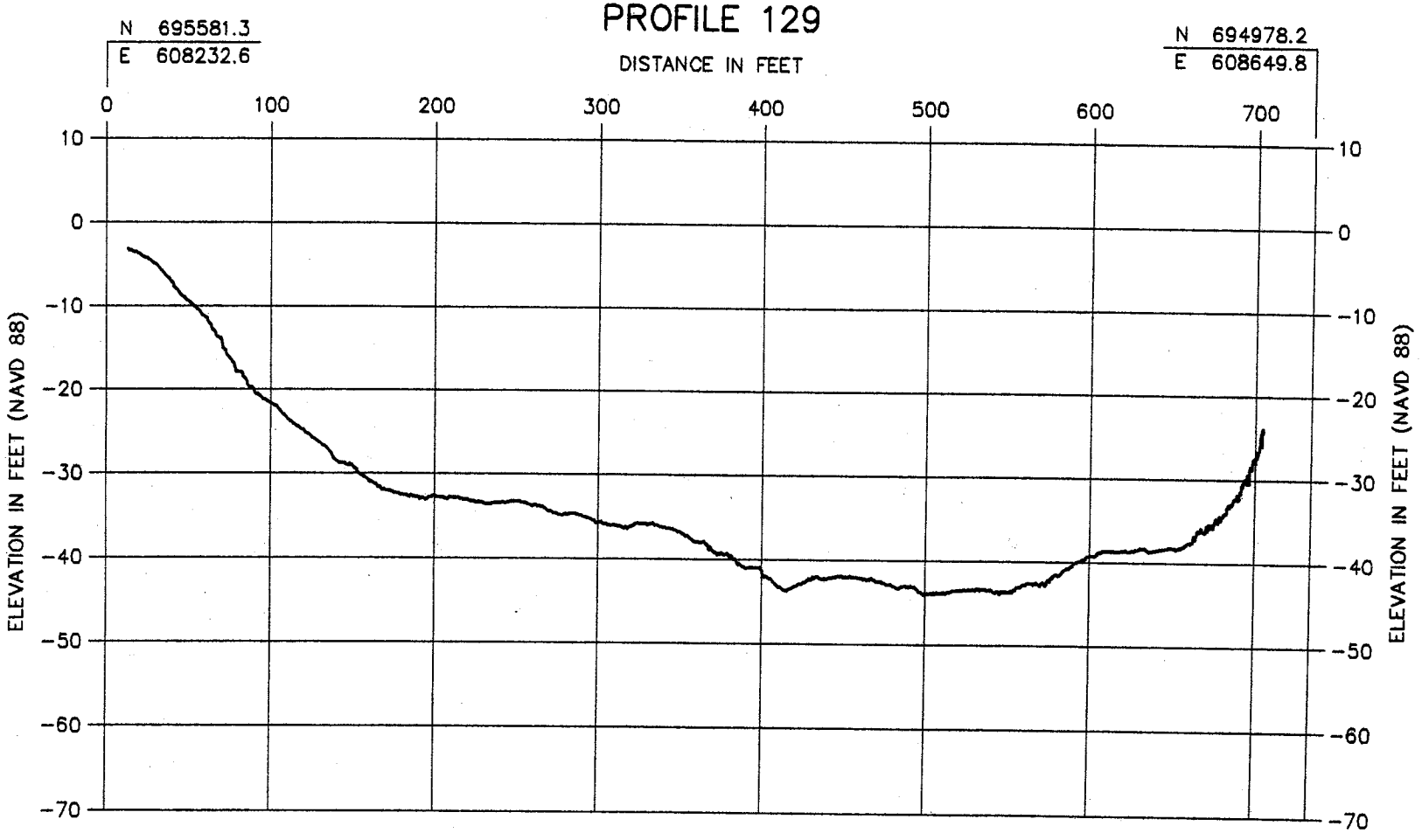
PROFILE 128



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 129



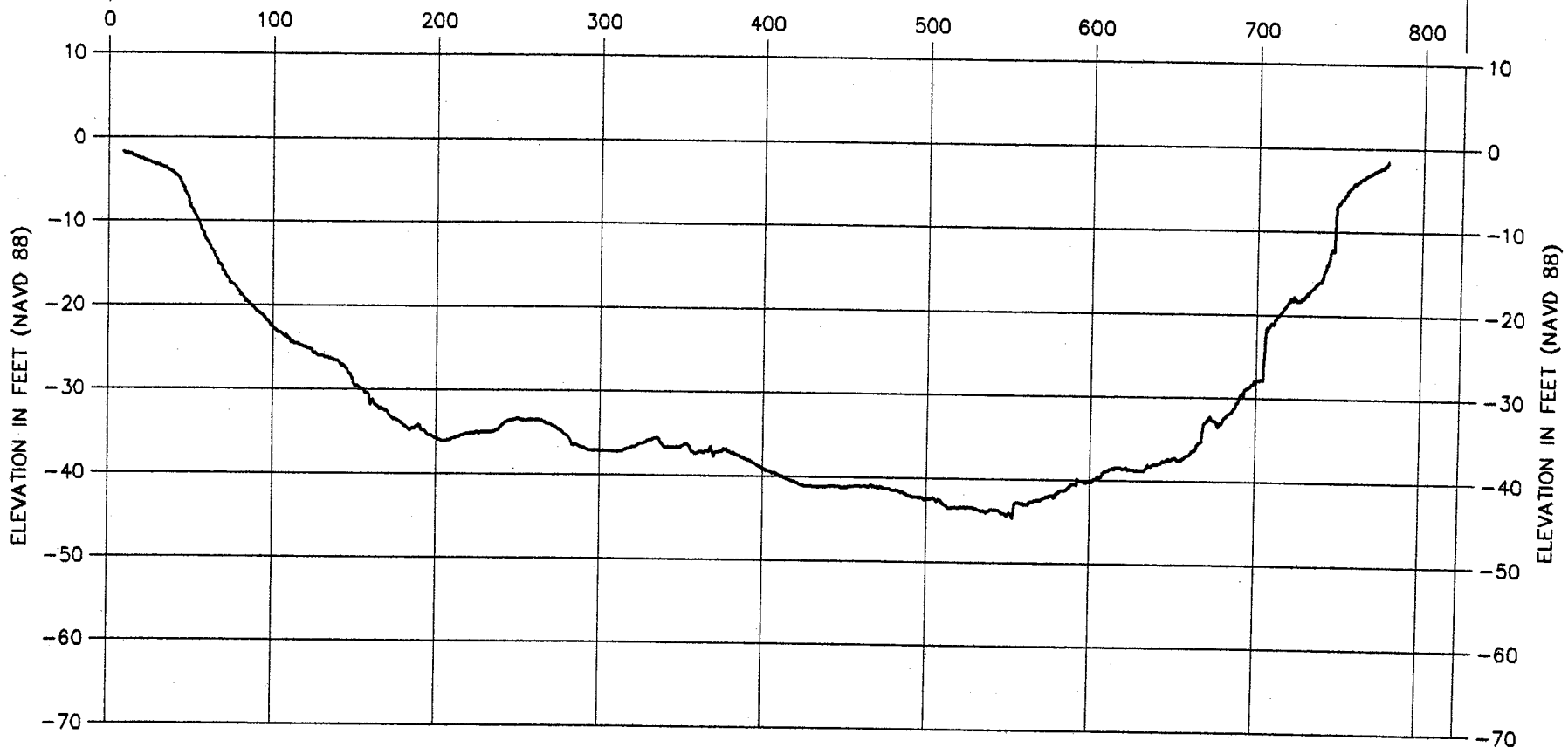
LEGEND:

——— 200 kHz FREQUENCY

PROFILE 130

N 695555.9
E 608162.4

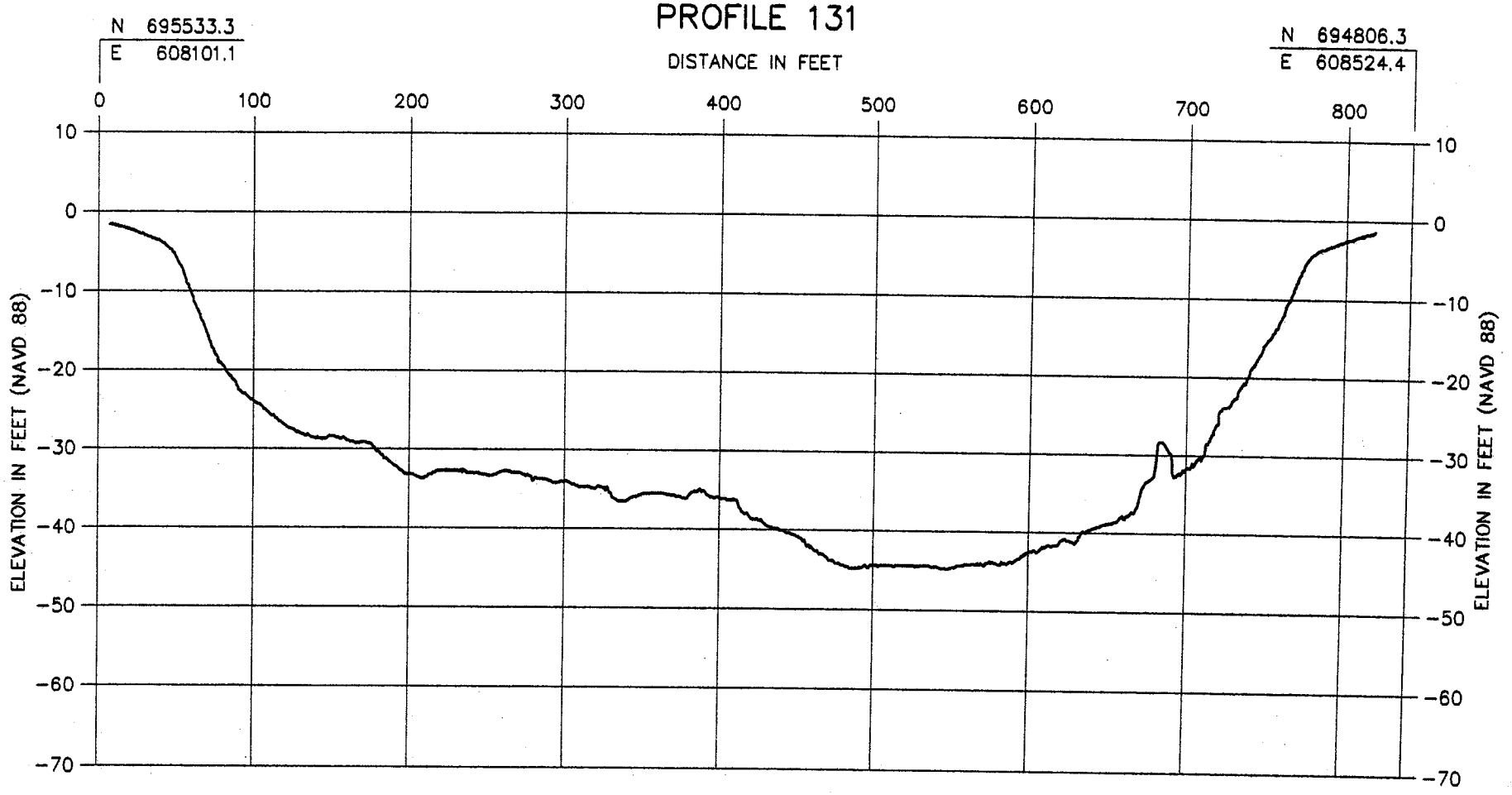
N 694862.9
E 608606.6



LEGEND:

——— 200 kHz FREQUENCY

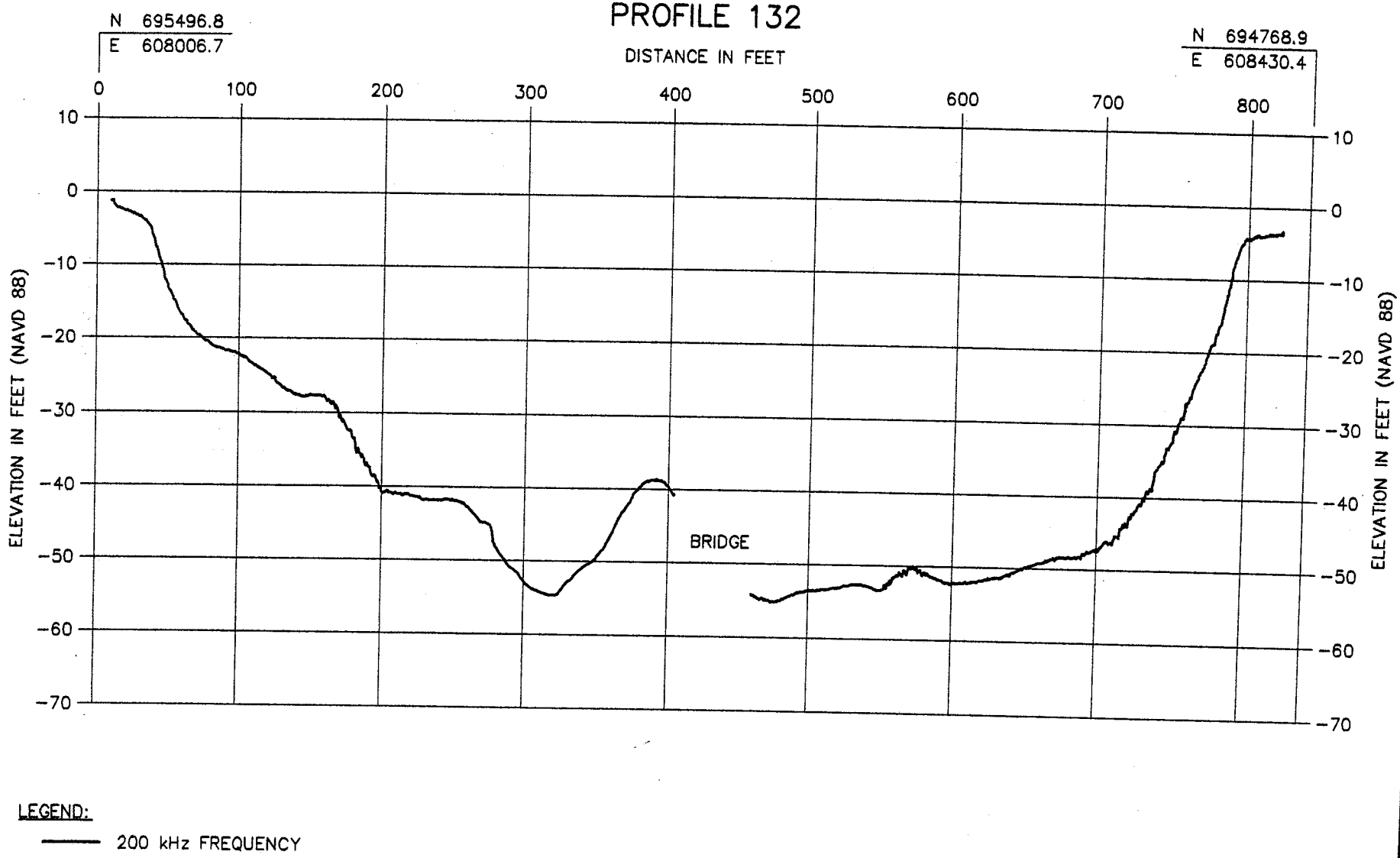
PROFILE 131



LEGEND:

——— 200 kHz FREQUENCY

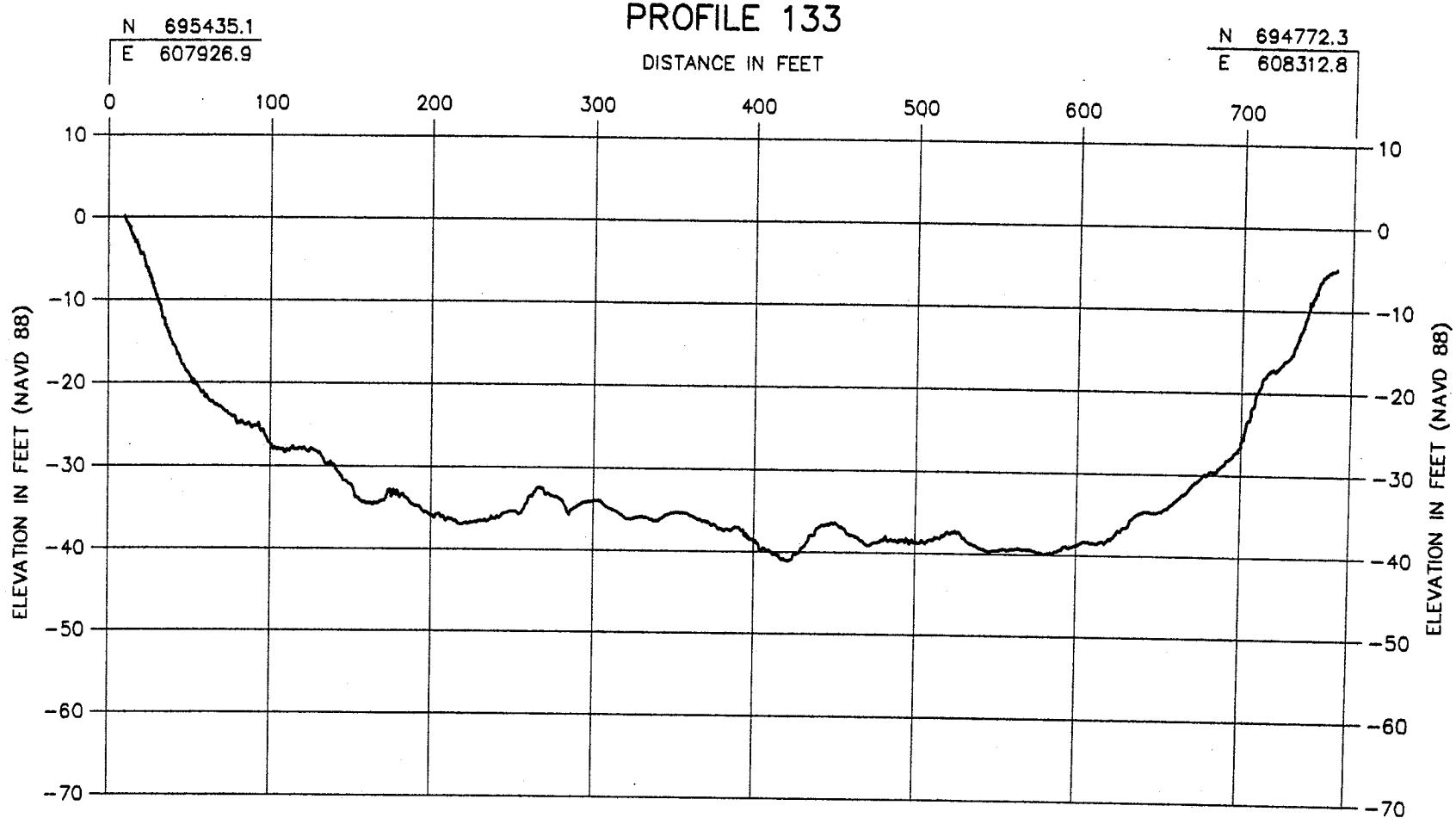
PROFILE 132



LEGEND:

200 kHz FREQUENCY

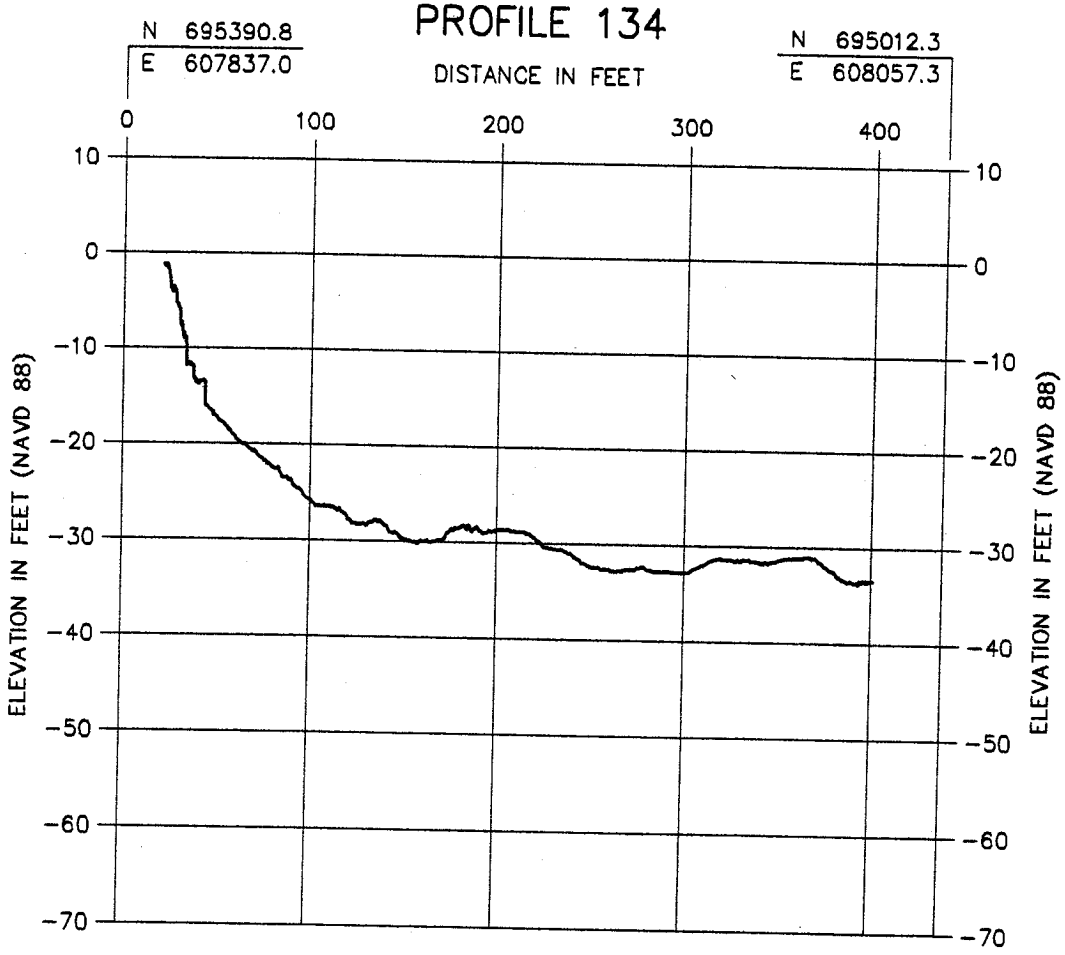
PROFILE 133



LEGEND:

——— 200 kHz FREQUENCY

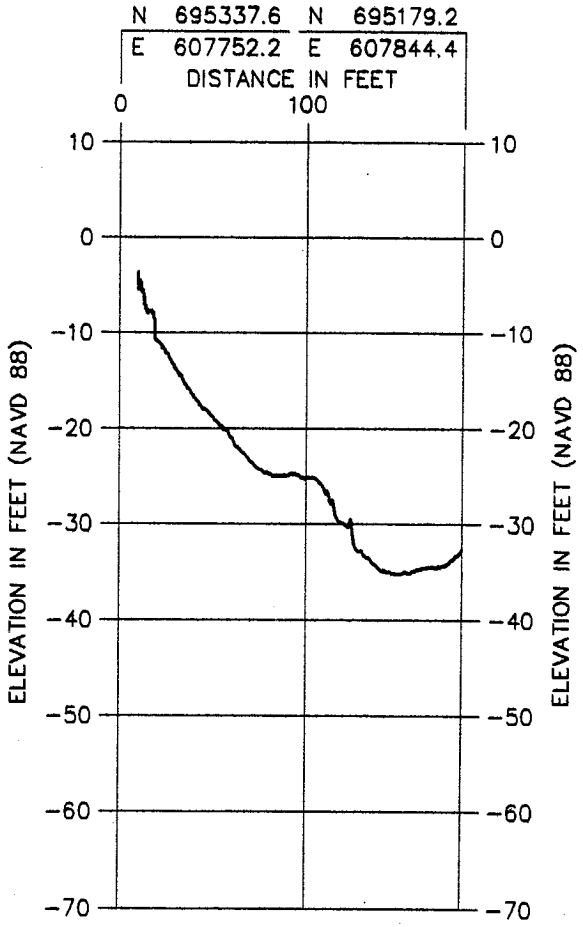
PROFILE 134



LEGEND:

——— 200 kHz FREQUENCY

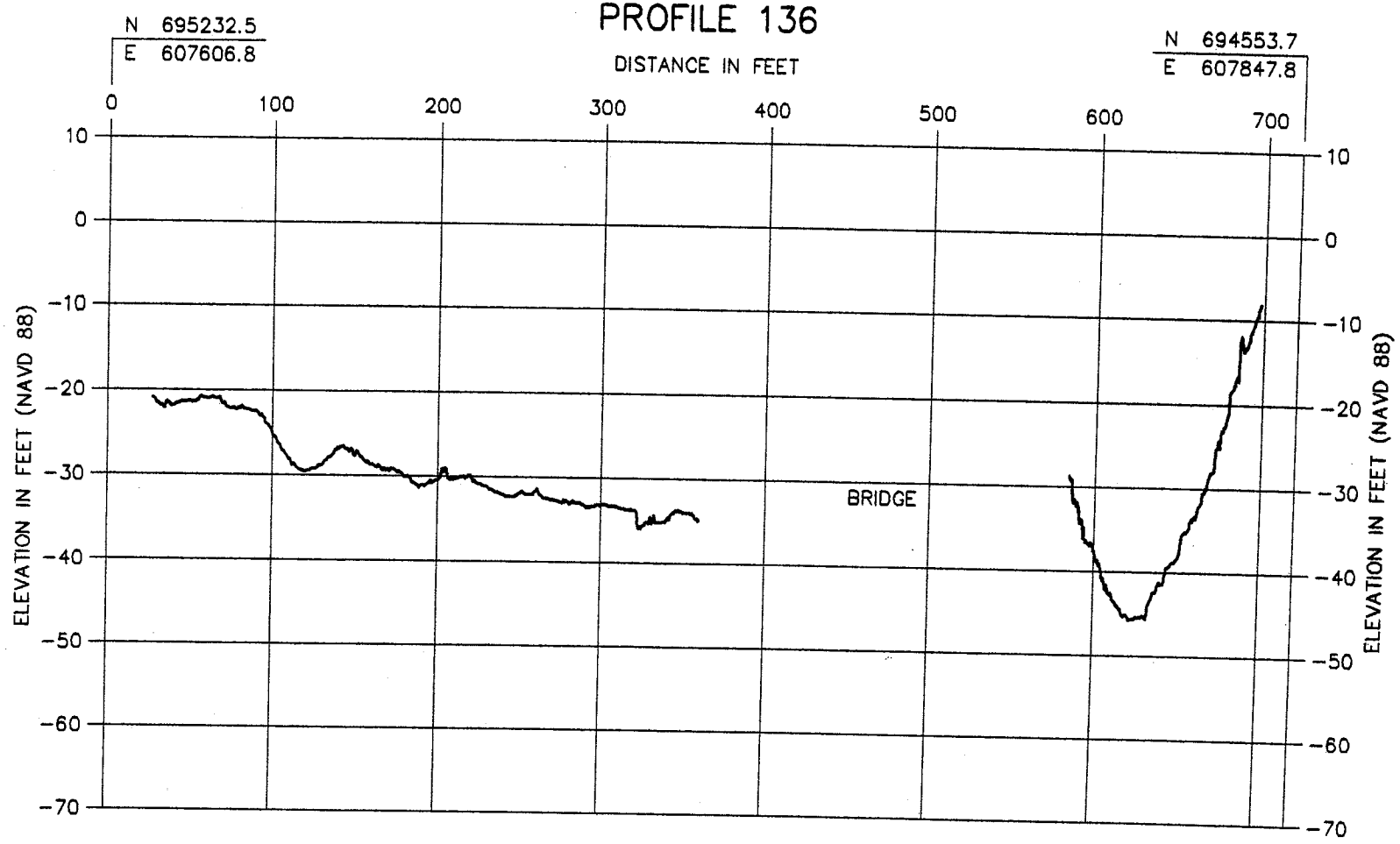
PROFILE 135



LEGEND:

——— 200 kHz FREQUENCY

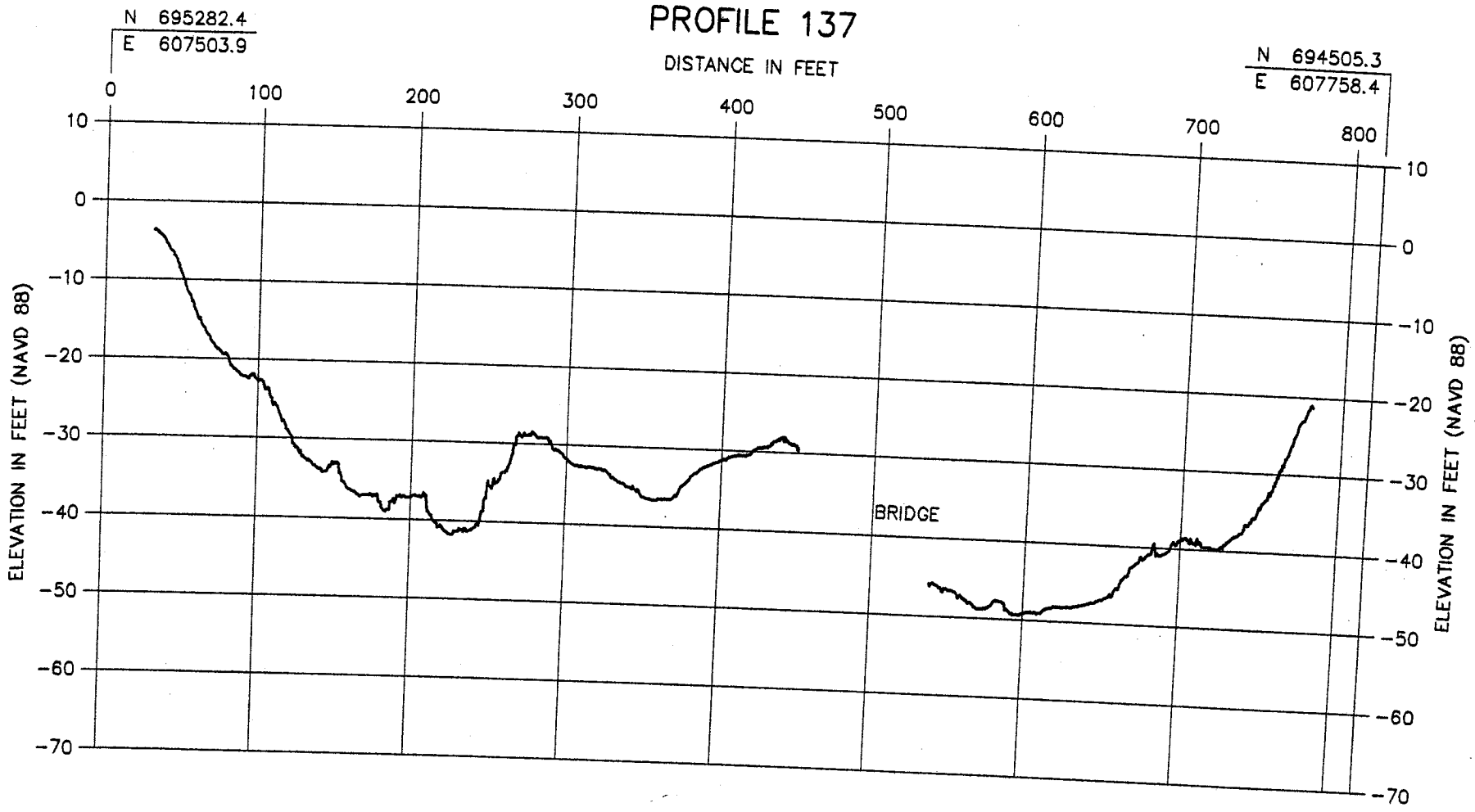
PROFILE 136



LEGEND:

——— 200 kHz FREQUENCY

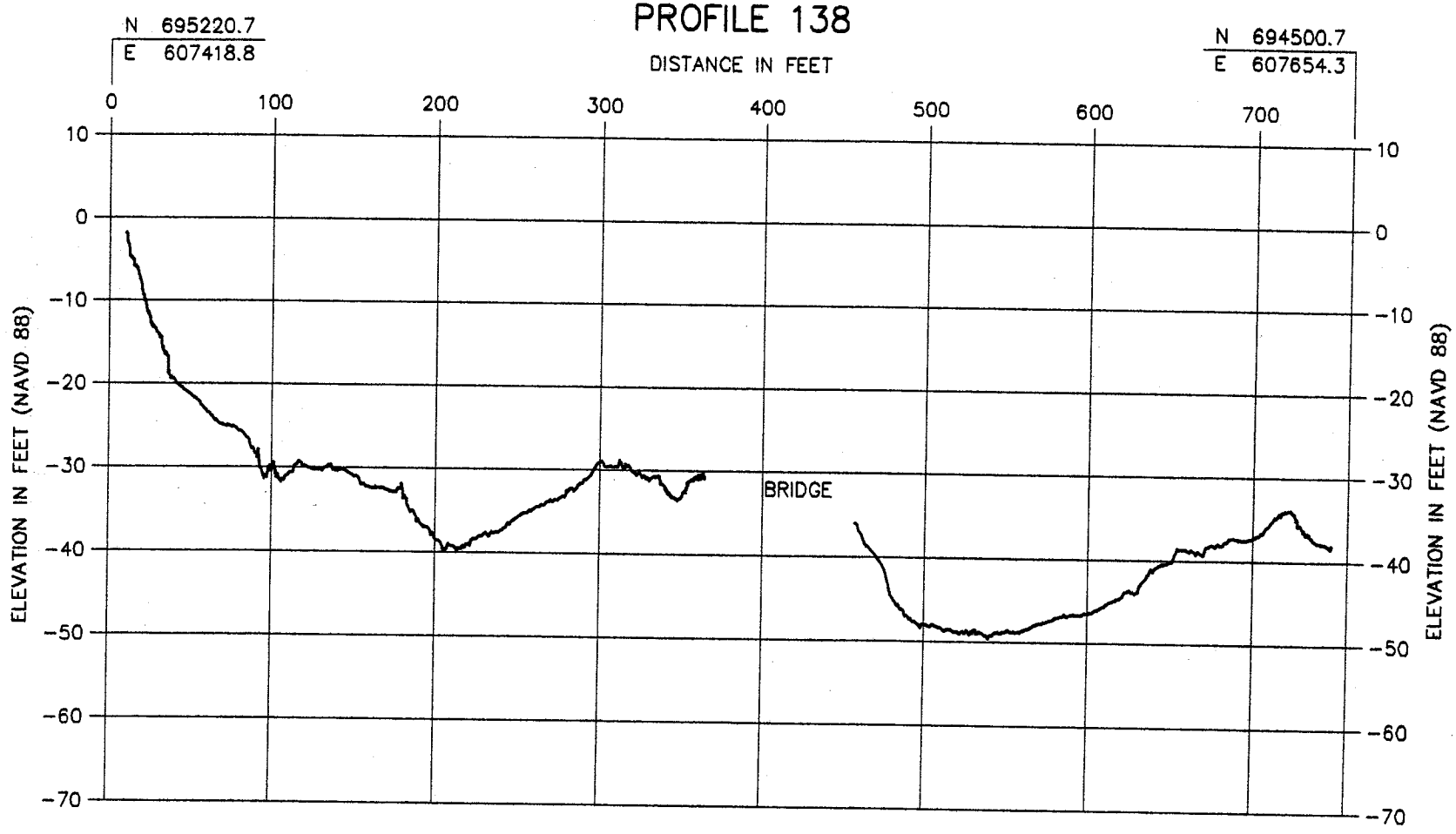
PROFILE 137



LEGEND:

200 kHz FREQUENCY

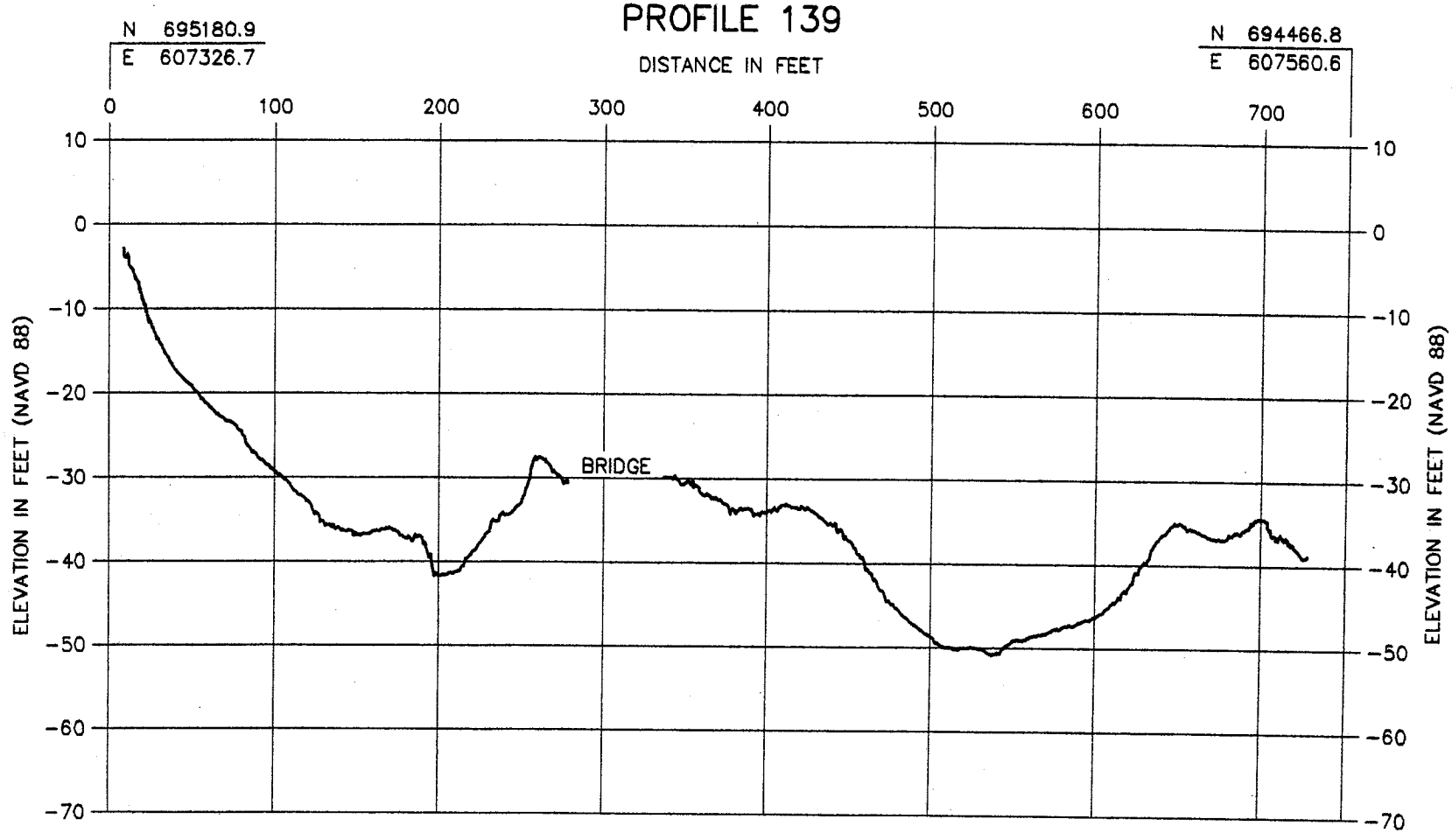
PROFILE 138



LEGEND:

——— 200 kHz FREQUENCY

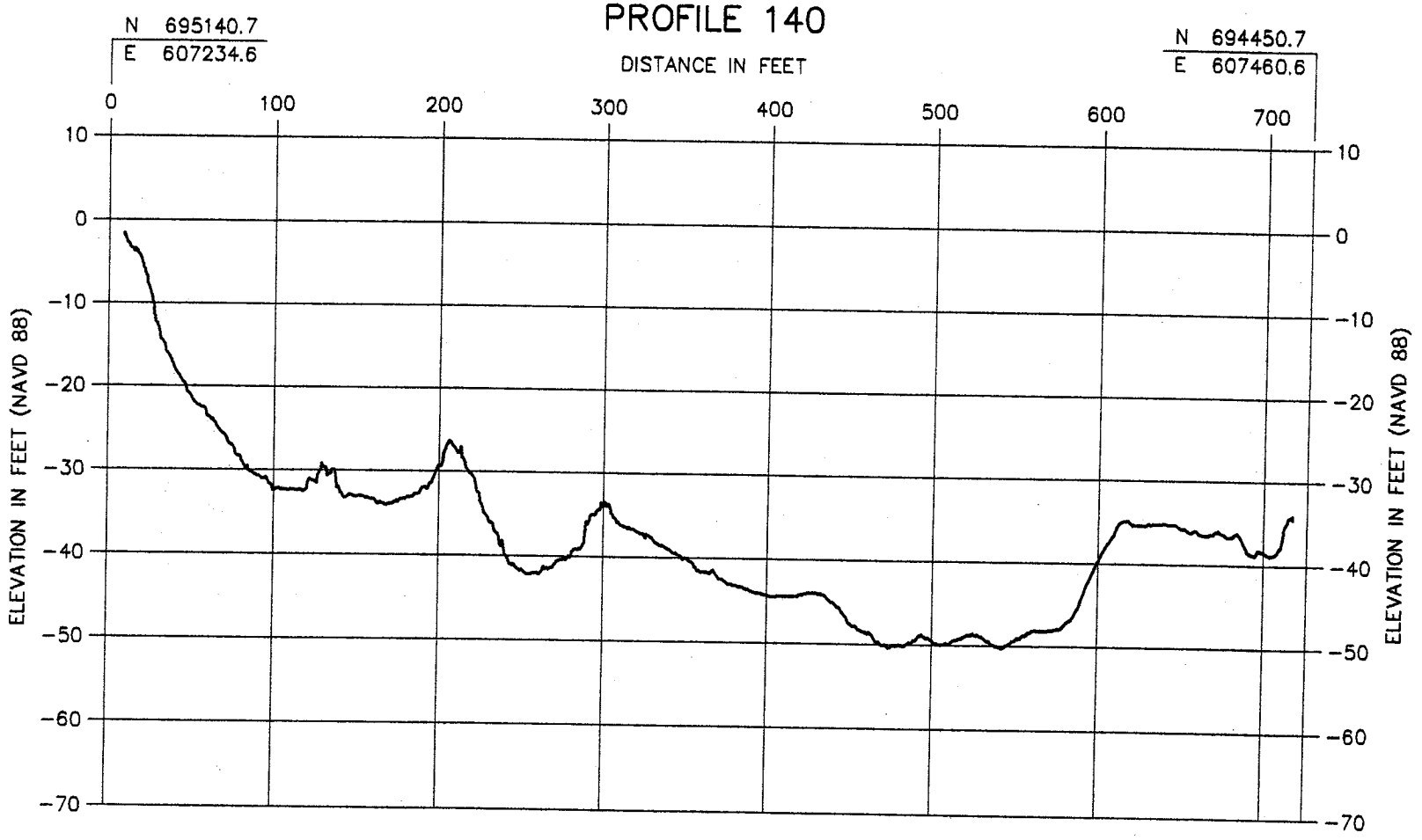
PROFILE 139



LEGEND:

——— 200 kHz FREQUENCY

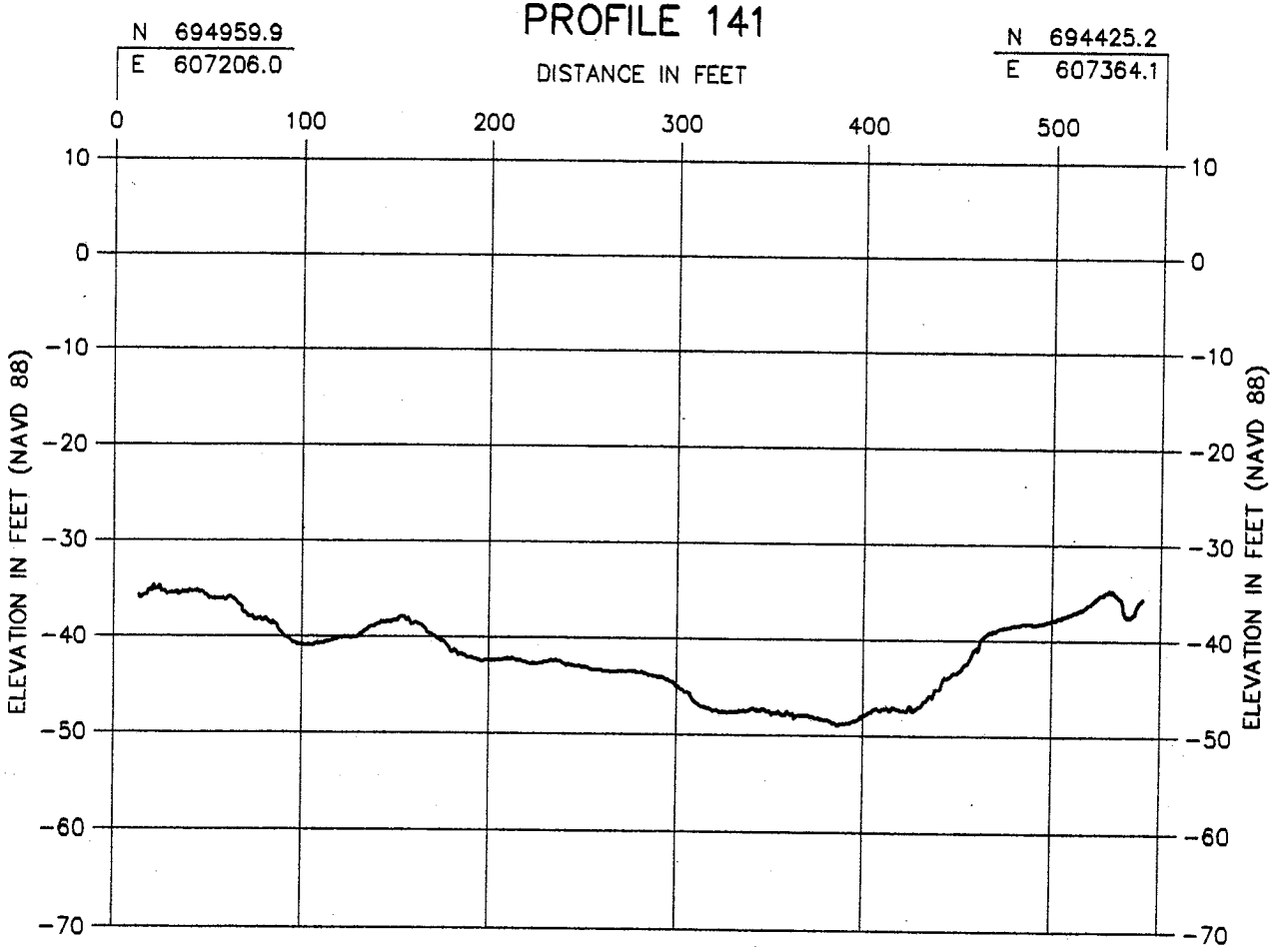
PROFILE 140



LEGEND:

——— 200 kHz FREQUENCY

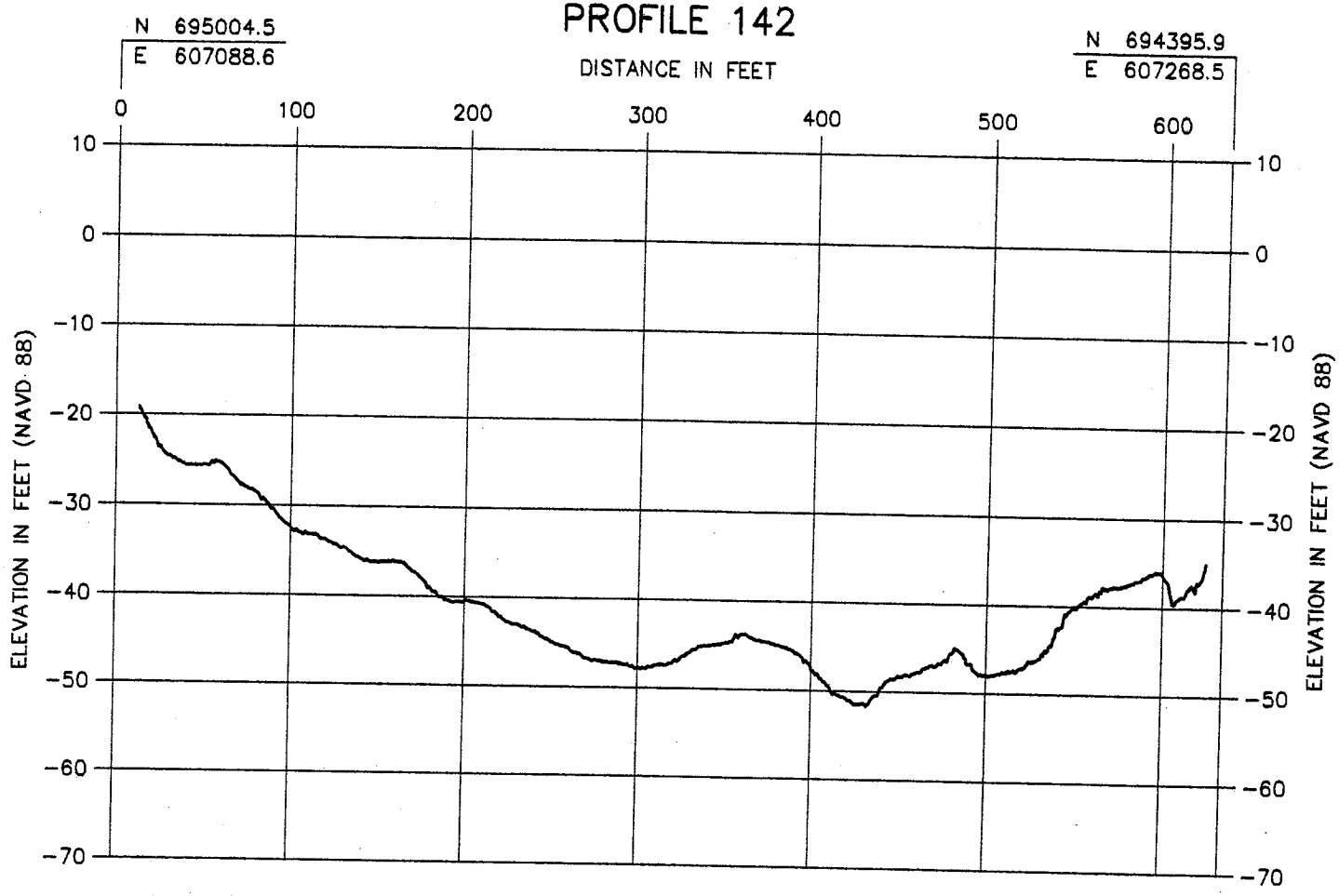
PROFILE 141



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 142



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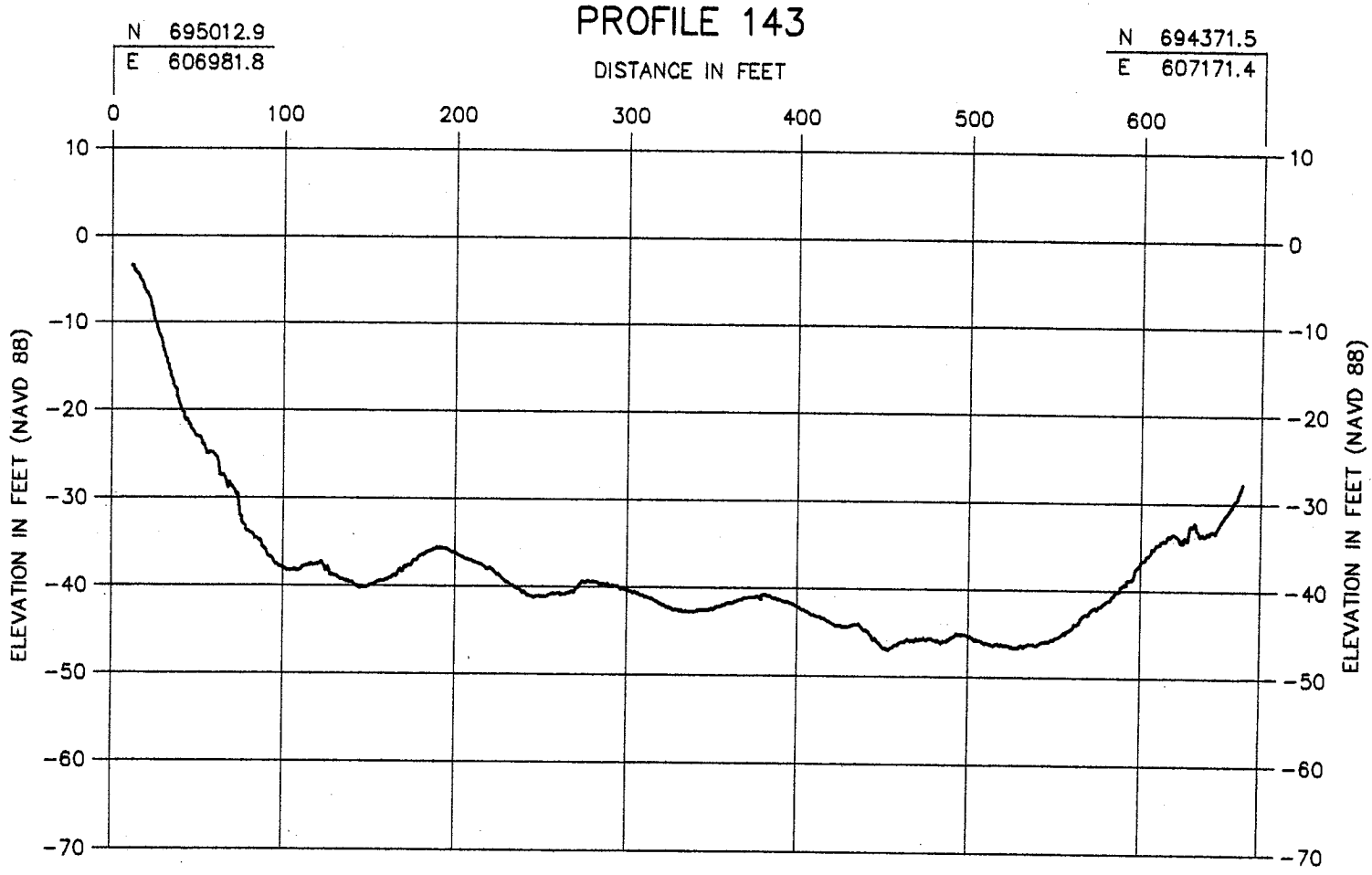
——— 200 kHz FREQUENCY

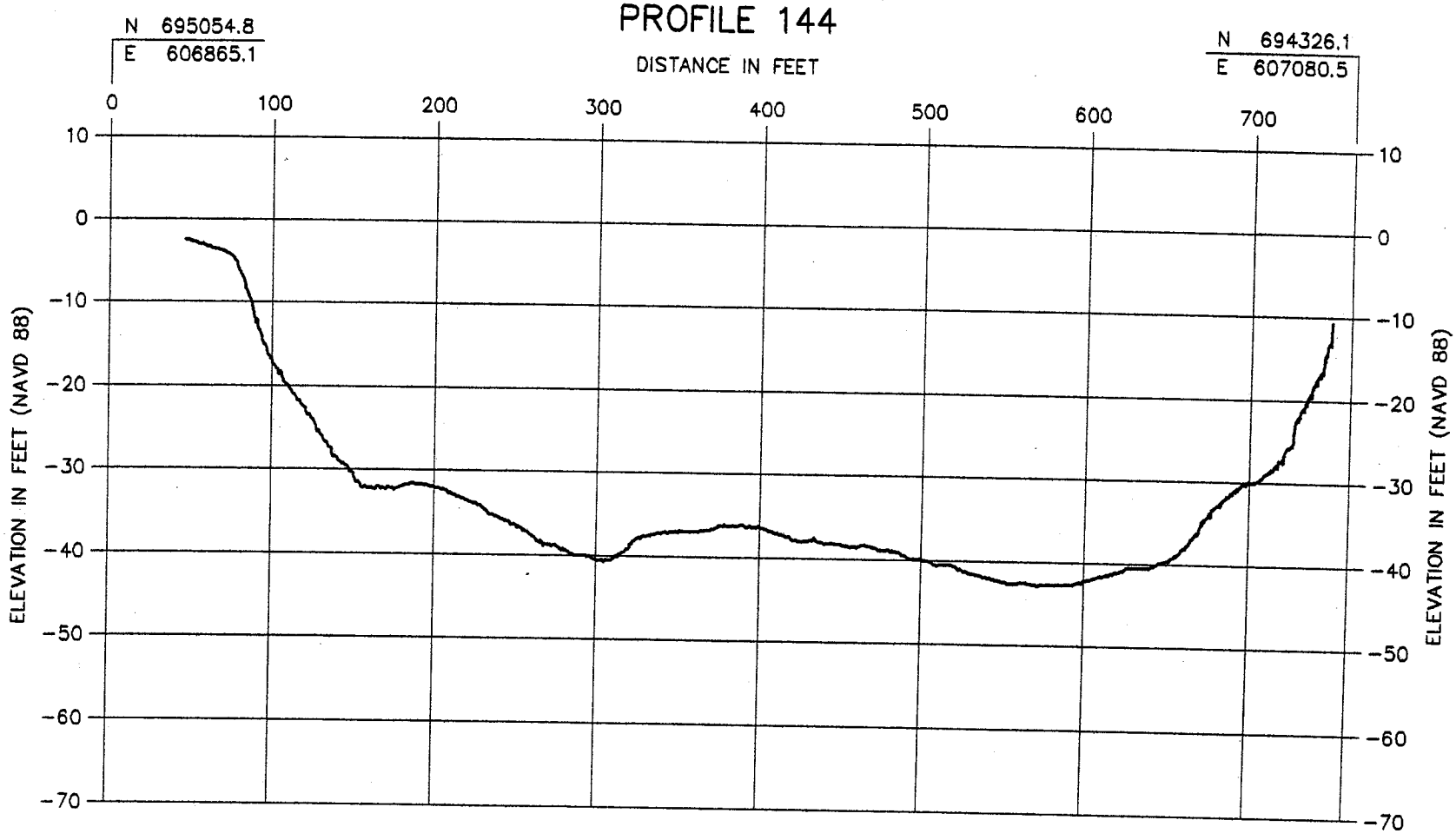
PROFILE 143



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 144



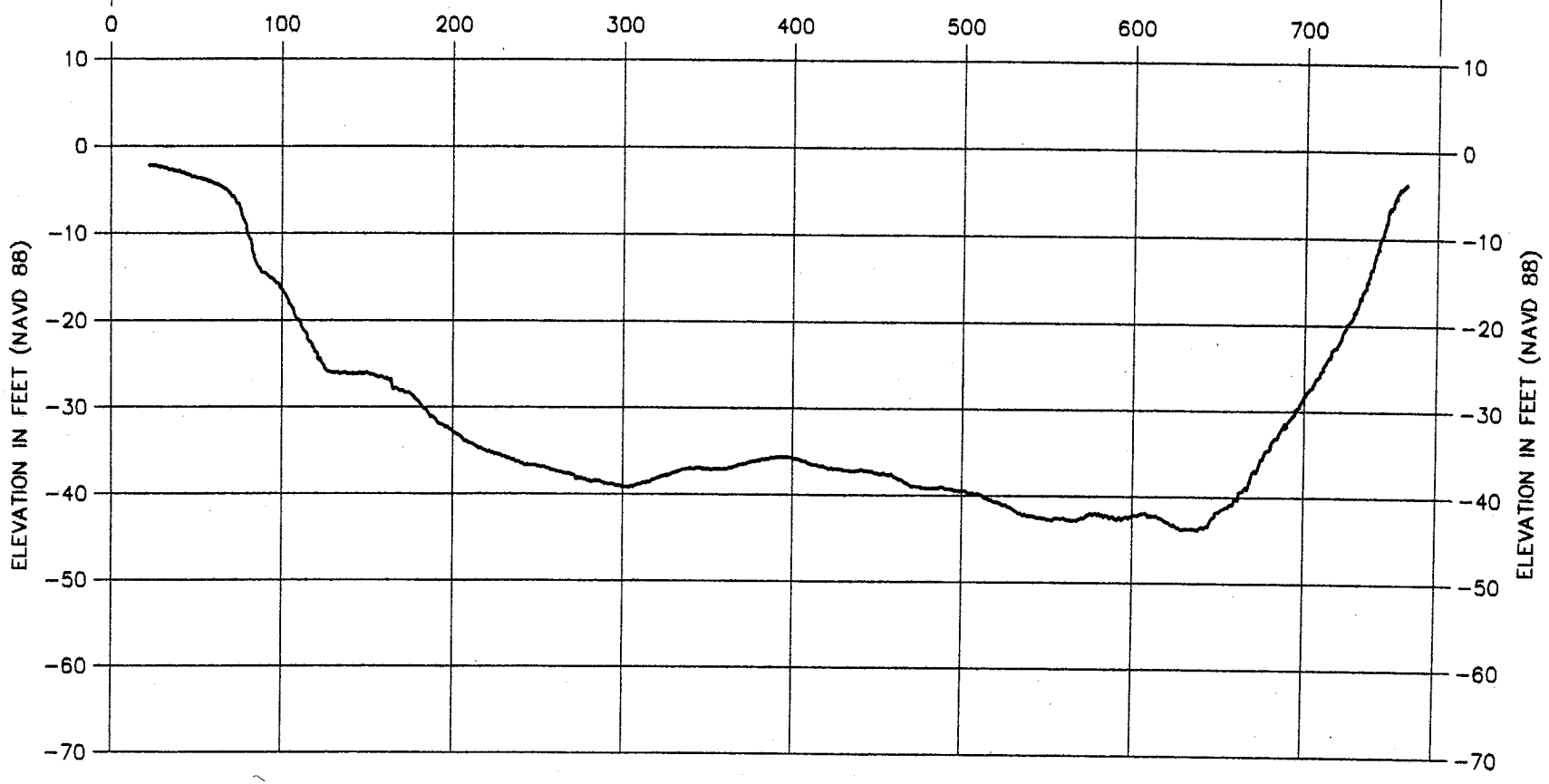
LEGEND:

——— 200 kHz FREQUENCY

PROFILE 145

N 695014.1
E 606772.9

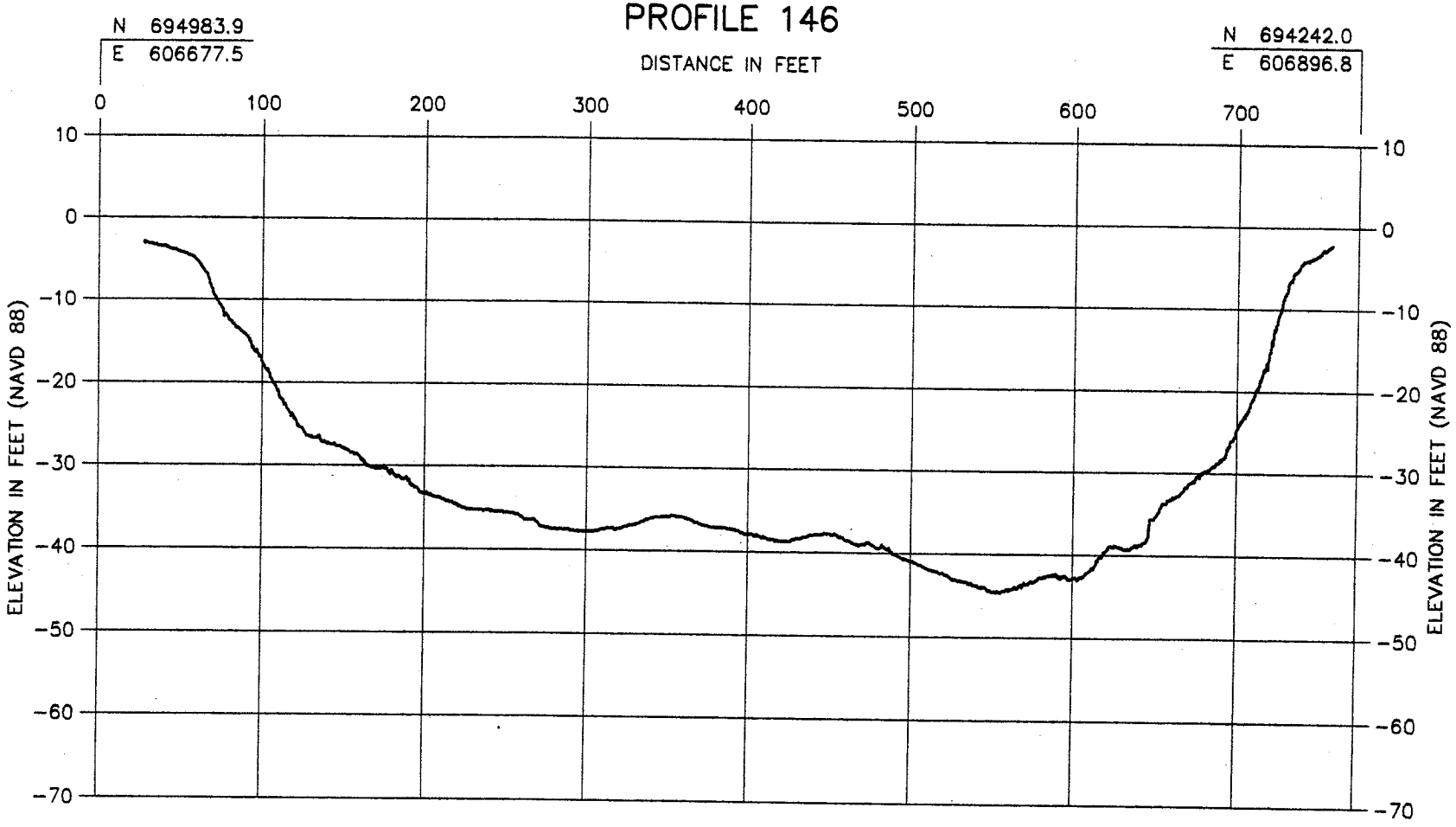
N 694269.4
E 606993.0



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 146



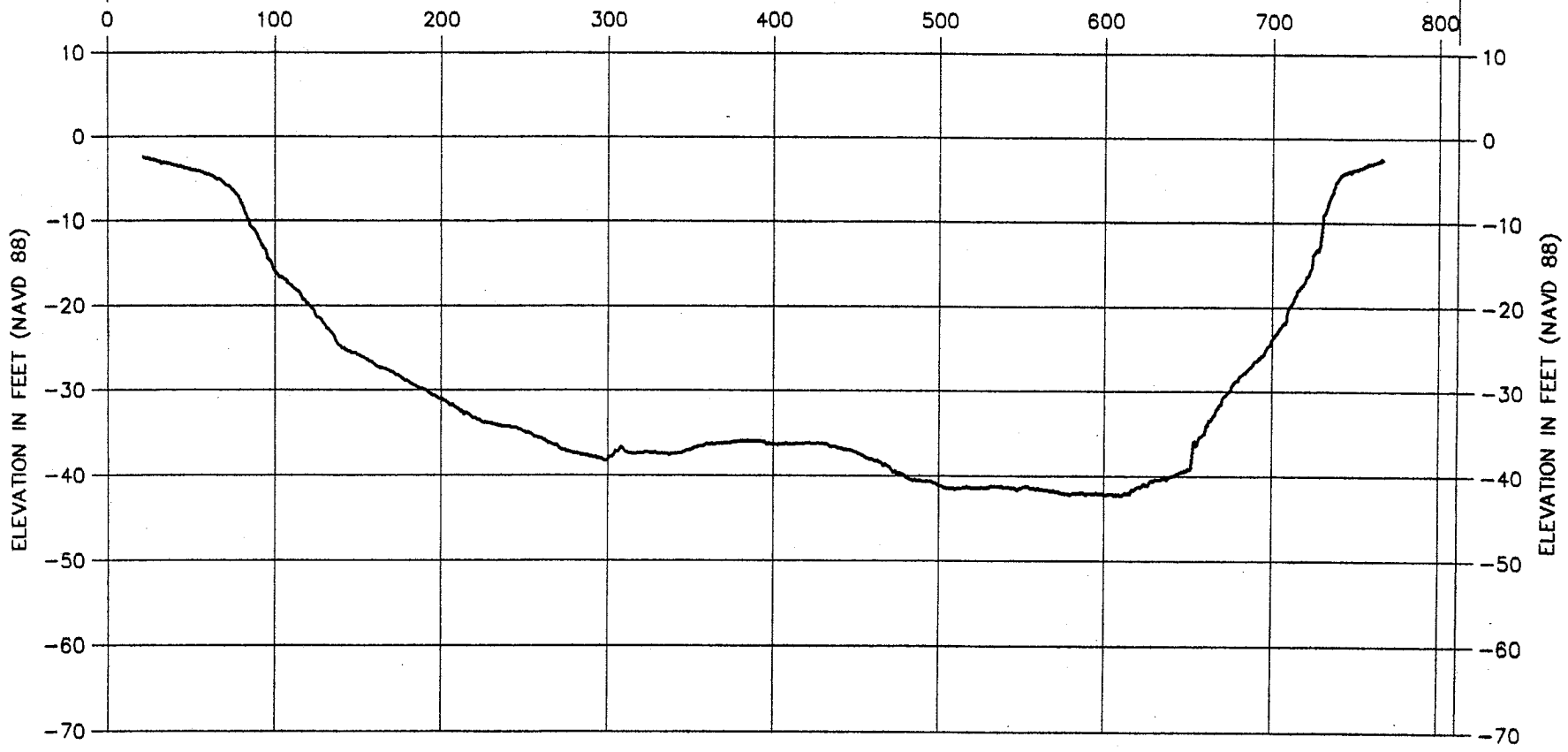
LEGEND:

——— 200 kHz FREQUENCY

PROFILE 147

N 694970.4
E 606577.2

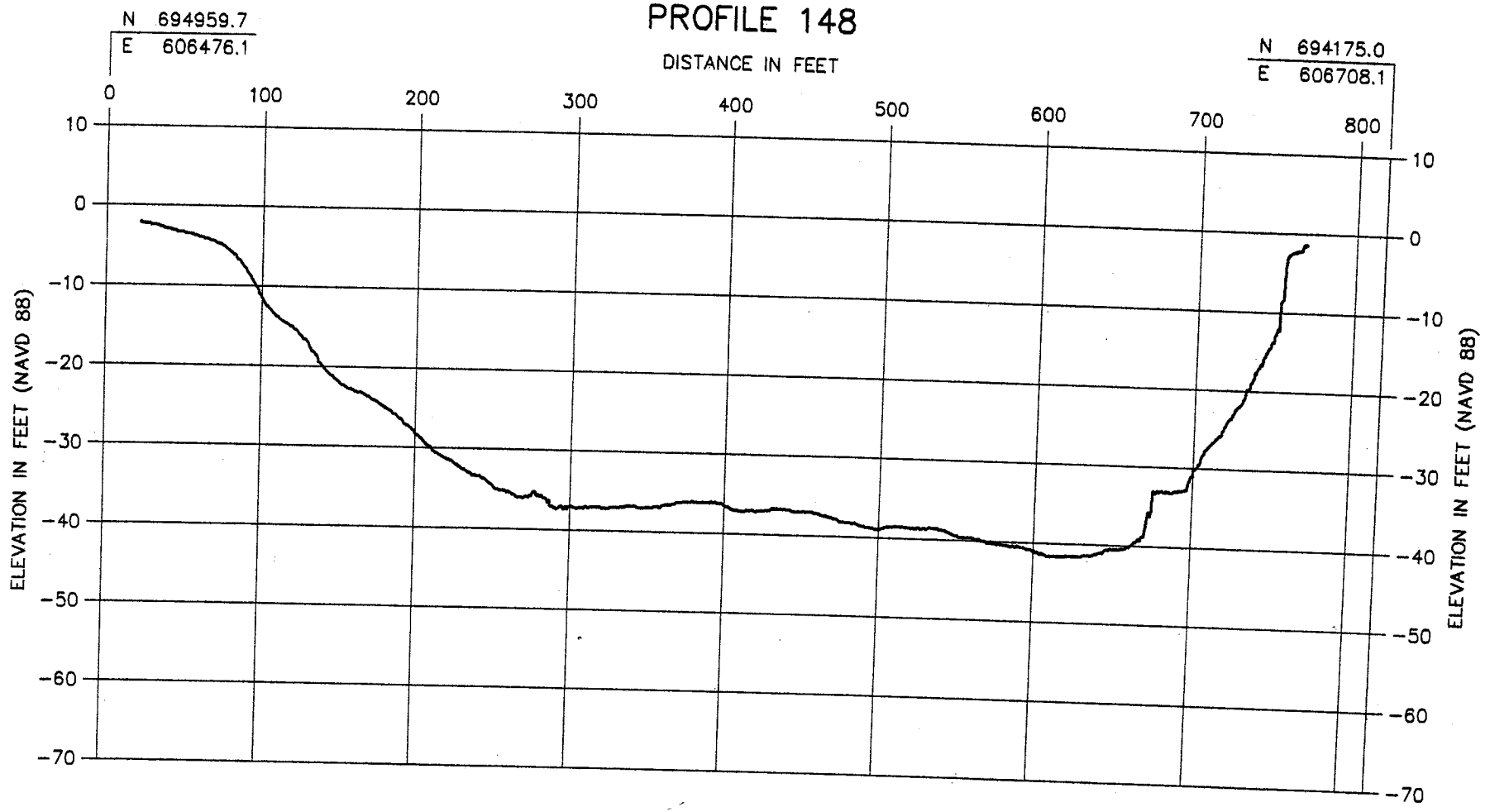
N 694192.3
E 606807.2



LEGEND:

——— 200 kHz FREQUENCY

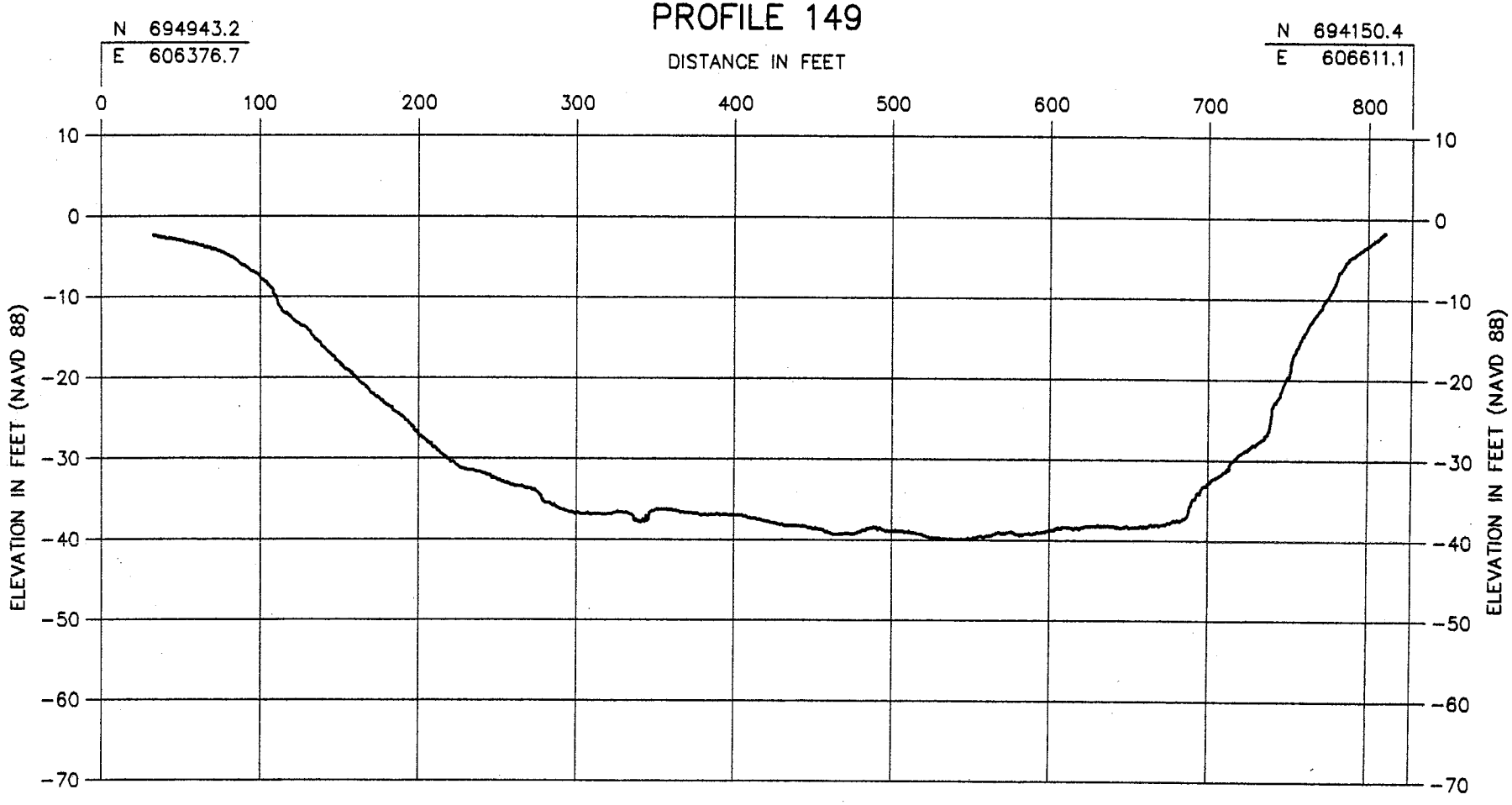
PROFILE 148



LEGEND:

——— 200 kHz FREQUENCY

PROFILE 149



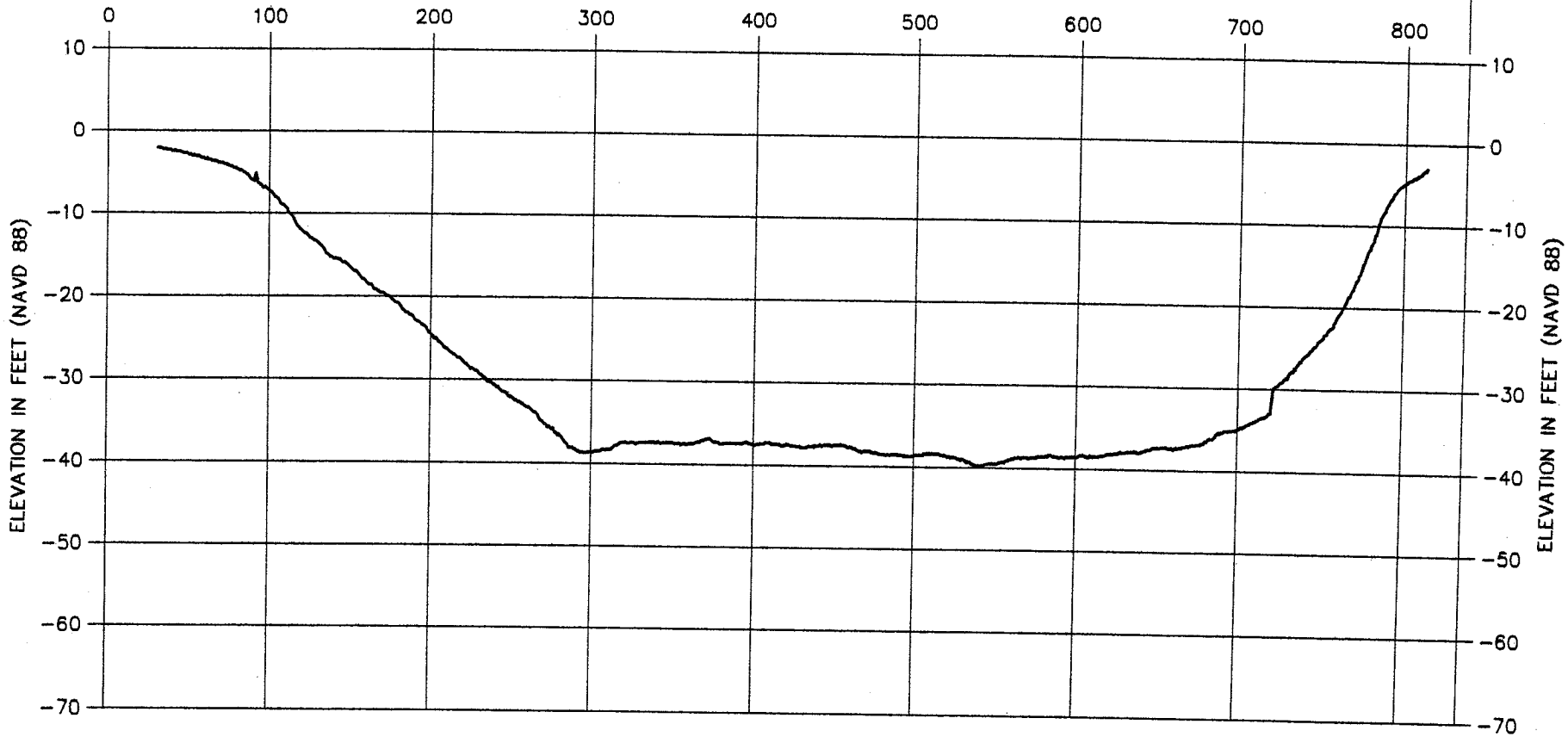
LEGEND:

——— 200 kHz FREQUENCY

PROFILE 150

N 694919.5
E 606279.5

N 694116.6
E 606516.8



LEGEND:

——— 200 kHz FREQUENCY

Appendix C

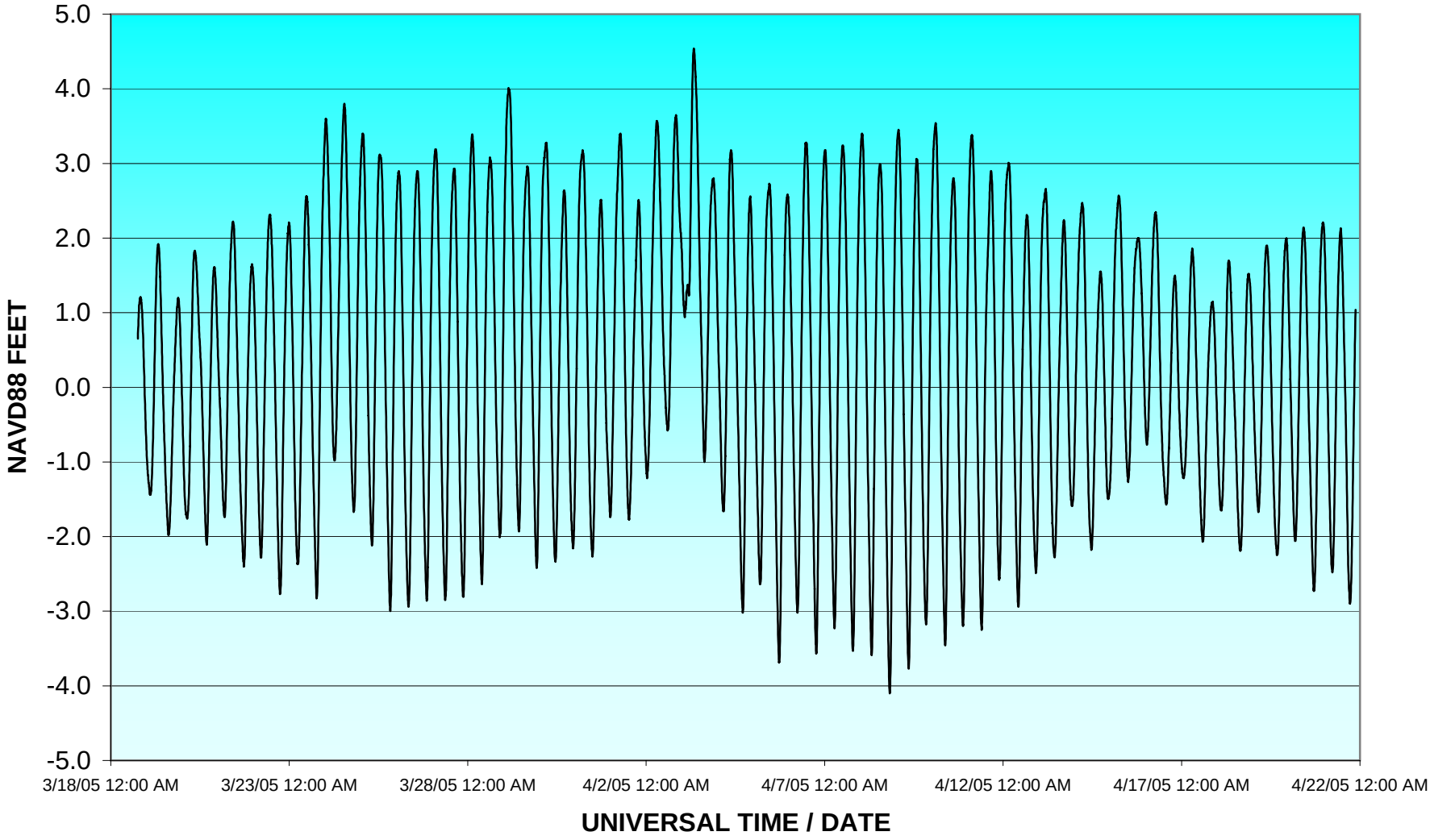
Tide Gage Data
(As Provided by OSI, Inc.)

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA



APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/18/2005 18:12	0.65	3/19/2005 0:00	-0.83	3/19/2005 5:48	0.74
3/18/2005 18:18	0.72	3/19/2005 0:06	-0.86	3/19/2005 5:54	0.83
3/18/2005 18:24	0.79	3/19/2005 0:12	-0.91	3/19/2005 6:00	0.93
3/18/2005 18:30	0.83	3/19/2005 0:18	-0.96	3/19/2005 6:06	1.02
3/18/2005 18:36	0.90	3/19/2005 0:24	-1.00	3/19/2005 6:12	1.11
3/18/2005 18:42	0.95	3/19/2005 0:30	-1.03	3/19/2005 6:18	1.23
3/18/2005 18:48	0.99	3/19/2005 0:36	-1.06	3/19/2005 6:24	1.30
3/18/2005 18:54	1.02	3/19/2005 0:42	-1.10	3/19/2005 6:30	1.39
3/18/2005 19:00	1.09	3/19/2005 0:48	-1.11	3/19/2005 6:36	1.45
3/18/2005 19:06	1.11	3/19/2005 0:54	-1.15	3/19/2005 6:42	1.52
3/18/2005 19:12	1.12	3/19/2005 1:00	-1.18	3/19/2005 6:48	1.59
3/18/2005 19:18	1.14	3/19/2005 1:06	-1.18	3/19/2005 6:54	1.65
3/18/2005 19:24	1.16	3/19/2005 1:12	-1.23	3/19/2005 7:00	1.69
3/18/2005 19:30	1.19	3/19/2005 1:18	-1.26	3/19/2005 7:06	1.75
3/18/2005 19:36	1.18	3/19/2005 1:24	-1.28	3/19/2005 7:12	1.80
3/18/2005 19:42	1.19	3/19/2005 1:30	-1.28	3/19/2005 7:18	1.82
3/18/2005 19:48	1.18	3/19/2005 1:36	-1.31	3/19/2005 7:24	1.87
3/18/2005 19:54	1.21	3/19/2005 1:42	-1.33	3/19/2005 7:30	1.89
3/18/2005 20:00	1.21	3/19/2005 1:48	-1.35	3/19/2005 7:36	1.91
3/18/2005 20:06	1.19	3/19/2005 1:54	-1.36	3/19/2005 7:42	1.91
3/18/2005 20:12	1.18	3/19/2005 2:00	-1.38	3/19/2005 7:48	1.91
3/18/2005 20:18	1.18	3/19/2005 2:06	-1.41	3/19/2005 7:54	1.92
3/18/2005 20:24	1.18	3/19/2005 2:12	-1.43	3/19/2005 8:00	1.92
3/18/2005 20:30	1.13	3/19/2005 2:18	-1.44	3/19/2005 8:06	1.91
3/18/2005 20:36	1.13	3/19/2005 2:24	-1.43	3/19/2005 8:12	1.89
3/18/2005 20:42	1.13	3/19/2005 2:30	-1.43	3/19/2005 8:18	1.88
3/18/2005 20:48	1.08	3/19/2005 2:36	-1.44	3/19/2005 8:24	1.86
3/18/2005 20:54	1.06	3/19/2005 2:42	-1.44	3/19/2005 8:30	1.85
3/18/2005 21:00	1.04	3/19/2005 2:48	-1.44	3/19/2005 8:36	1.80
3/18/2005 21:06	0.99	3/19/2005 2:54	-1.42	3/19/2005 8:42	1.76
3/18/2005 21:12	0.94	3/19/2005 3:00	-1.39	3/19/2005 8:48	1.71
3/18/2005 21:18	0.90	3/19/2005 3:06	-1.38	3/19/2005 8:54	1.64
3/18/2005 21:24	0.87	3/19/2005 3:12	-1.38	3/19/2005 9:00	1.59
3/18/2005 21:30	0.78	3/19/2005 3:18	-1.34	3/19/2005 9:06	1.54
3/18/2005 21:36	0.75	3/19/2005 3:24	-1.31	3/19/2005 9:12	1.48
3/18/2005 21:42	0.71	3/19/2005 3:30	-1.26	3/19/2005 9:18	1.41
3/18/2005 21:48	0.63	3/19/2005 3:36	-1.22	3/19/2005 9:24	1.31
3/18/2005 21:54	0.54	3/19/2005 3:42	-1.15	3/19/2005 9:30	1.24
3/18/2005 22:00	0.47	3/19/2005 3:48	-1.10	3/19/2005 9:36	1.17
3/18/2005 22:06	0.42	3/19/2005 3:54	-1.04	3/19/2005 9:42	1.11
3/18/2005 22:12	0.35	3/19/2005 4:00	-0.97	3/19/2005 9:48	1.01
3/18/2005 22:18	0.28	3/19/2005 4:06	-0.91	3/19/2005 9:54	0.92
3/18/2005 22:24	0.21	3/19/2005 4:12	-0.84	3/19/2005 10:00	0.83
3/18/2005 22:30	0.14	3/19/2005 4:18	-0.75	3/19/2005 10:06	0.73
3/18/2005 22:36	0.02	3/19/2005 4:24	-0.68	3/19/2005 10:12	0.66
3/18/2005 22:42	-0.02	3/19/2005 4:30	-0.59	3/19/2005 10:18	0.57
3/18/2005 22:48	-0.09	3/19/2005 4:36	-0.48	3/19/2005 10:24	0.47
3/18/2005 22:54	-0.16	3/19/2005 4:42	-0.38	3/19/2005 10:30	0.41
3/18/2005 23:00	-0.23	3/19/2005 4:48	-0.30	3/19/2005 10:36	0.31
3/18/2005 23:06	-0.28	3/19/2005 4:54	-0.18	3/19/2005 10:42	0.22
3/18/2005 23:12	-0.37	3/19/2005 5:00	-0.09	3/19/2005 10:48	0.15
3/18/2005 23:18	-0.42	3/19/2005 5:06	0.00	3/19/2005 10:54	0.04
3/18/2005 23:24	-0.47	3/19/2005 5:12	0.11	3/19/2005 11:00	0.00
3/18/2005 23:30	-0.54	3/19/2005 5:18	0.21	3/19/2005 11:06	-0.07
3/18/2005 23:36	-0.62	3/19/2005 5:24	0.30	3/19/2005 11:12	-0.12
3/18/2005 23:42	-0.67	3/19/2005 5:30	0.41	3/19/2005 11:18	-0.21
3/18/2005 23:48	-0.69	3/19/2005 5:36	0.51	3/19/2005 11:24	-0.28
3/18/2005 23:54	-0.78	3/19/2005 5:42	0.63	3/19/2005 11:30	-0.34

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/19/2005 11:36	-0.45	3/19/2005 17:36	-0.51	3/19/2005 23:36	0.08
3/19/2005 11:42	-0.51	3/19/2005 17:42	-0.43	3/19/2005 23:42	-0.01
3/19/2005 11:48	-0.59	3/19/2005 17:48	-0.36	3/19/2005 23:48	-0.08
3/19/2005 11:54	-0.63	3/19/2005 17:54	-0.29	3/19/2005 23:54	-0.14
3/19/2005 12:00	-0.70	3/19/2005 18:00	-0.24	3/20/2005 0:00	-0.22
3/19/2005 12:06	-0.75	3/19/2005 18:06	-0.17	3/20/2005 0:06	-0.28
3/19/2005 12:12	-0.82	3/19/2005 18:12	-0.12	3/20/2005 0:12	-0.38
3/19/2005 12:18	-0.86	3/19/2005 18:18	-0.05	3/20/2005 0:18	-0.47
3/19/2005 12:24	-0.93	3/19/2005 18:24	0.02	3/20/2005 0:24	-0.54
3/19/2005 12:30	-0.99	3/19/2005 18:30	0.07	3/20/2005 0:30	-0.63
3/19/2005 12:36	-1.07	3/19/2005 18:36	0.14	3/20/2005 0:36	-0.70
3/19/2005 12:42	-1.13	3/19/2005 18:42	0.19	3/20/2005 0:42	-0.79
3/19/2005 12:48	-1.20	3/19/2005 18:48	0.23	3/20/2005 0:48	-0.86
3/19/2005 12:54	-1.27	3/19/2005 18:54	0.31	3/20/2005 0:54	-0.95
3/19/2005 13:00	-1.31	3/19/2005 19:00	0.35	3/20/2005 1:00	-1.02
3/19/2005 13:06	-1.33	3/19/2005 19:06	0.38	3/20/2005 1:06	-1.09
3/19/2005 13:12	-1.40	3/19/2005 19:12	0.43	3/20/2005 1:12	-1.16
3/19/2005 13:18	-1.43	3/19/2005 19:18	0.52	3/20/2005 1:18	-1.23
3/19/2005 13:24	-1.50	3/19/2005 19:24	0.56	3/20/2005 1:24	-1.27
3/19/2005 13:30	-1.55	3/19/2005 19:30	0.61	3/20/2005 1:30	-1.36
3/19/2005 13:36	-1.57	3/19/2005 19:36	0.65	3/20/2005 1:36	-1.43
3/19/2005 13:42	-1.62	3/19/2005 19:42	0.70	3/20/2005 1:42	-1.45
3/19/2005 13:48	-1.66	3/19/2005 19:48	0.77	3/20/2005 1:48	-1.50
3/19/2005 13:54	-1.73	3/19/2005 19:54	0.82	3/20/2005 1:54	-1.55
3/19/2005 14:00	-1.75	3/19/2005 20:00	0.84	3/20/2005 2:00	-1.57
3/19/2005 14:06	-1.80	3/19/2005 20:06	0.89	3/20/2005 2:06	-1.59
3/19/2005 14:12	-1.84	3/19/2005 20:12	0.93	3/20/2005 2:12	-1.63
3/19/2005 14:18	-1.87	3/19/2005 20:18	0.99	3/20/2005 2:18	-1.66
3/19/2005 14:24	-1.91	3/19/2005 20:24	1.03	3/20/2005 2:24	-1.66
3/19/2005 14:30	-1.93	3/19/2005 20:30	1.06	3/20/2005 2:30	-1.68
3/19/2005 14:36	-1.96	3/19/2005 20:36	1.08	3/20/2005 2:36	-1.71
3/19/2005 14:42	-1.98	3/19/2005 20:42	1.08	3/20/2005 2:42	-1.70
3/19/2005 14:48	-1.98	3/19/2005 20:48	1.11	3/20/2005 2:48	-1.72
3/19/2005 14:54	-1.97	3/19/2005 20:54	1.15	3/20/2005 2:54	-1.72
3/19/2005 15:00	-1.97	3/19/2005 21:00	1.18	3/20/2005 3:00	-1.74
3/19/2005 15:06	-1.97	3/19/2005 21:06	1.15	3/20/2005 3:06	-1.74
3/19/2005 15:12	-1.95	3/19/2005 21:12	1.18	3/20/2005 3:12	-1.74
3/19/2005 15:18	-1.92	3/19/2005 21:18	1.20	3/20/2005 3:18	-1.76
3/19/2005 15:24	-1.90	3/19/2005 21:24	1.18	3/20/2005 3:24	-1.76
3/19/2005 15:30	-1.86	3/19/2005 21:30	1.18	3/20/2005 3:30	-1.74
3/19/2005 15:36	-1.84	3/19/2005 21:36	1.18	3/20/2005 3:36	-1.74
3/19/2005 15:42	-1.79	3/19/2005 21:42	1.18	3/20/2005 3:42	-1.71
3/19/2005 15:48	-1.74	3/19/2005 21:48	1.15	3/20/2005 3:48	-1.71
3/19/2005 15:54	-1.67	3/19/2005 21:54	1.12	3/20/2005 3:54	-1.67
3/19/2005 16:00	-1.62	3/19/2005 22:00	1.08	3/20/2005 4:00	-1.65
3/19/2005 16:06	-1.58	3/19/2005 22:06	1.05	3/20/2005 4:06	-1.60
3/19/2005 16:12	-1.52	3/19/2005 22:12	1.01	3/20/2005 4:12	-1.56
3/19/2005 16:18	-1.48	3/19/2005 22:18	0.94	3/20/2005 4:18	-1.53
3/19/2005 16:24	-1.41	3/19/2005 22:24	0.90	3/20/2005 4:24	-1.48
3/19/2005 16:30	-1.34	3/19/2005 22:30	0.85	3/20/2005 4:30	-1.41
3/19/2005 16:36	-1.25	3/19/2005 22:36	0.78	3/20/2005 4:36	-1.35
3/19/2005 16:42	-1.18	3/19/2005 22:42	0.71	3/20/2005 4:42	-1.27
3/19/2005 16:48	-1.09	3/19/2005 22:48	0.64	3/20/2005 4:48	-1.18
3/19/2005 16:54	-1.02	3/19/2005 22:54	0.58	3/20/2005 4:54	-1.11
3/19/2005 17:00	-0.95	3/19/2005 23:00	0.51	3/20/2005 5:00	-1.00
3/19/2005 17:06	-0.88	3/19/2005 23:06	0.44	3/20/2005 5:06	-0.89
3/19/2005 17:12	-0.82	3/19/2005 23:12	0.36	3/20/2005 5:12	-0.79
3/19/2005 17:18	-0.74	3/19/2005 23:18	0.29	3/20/2005 5:18	-0.65
3/19/2005 17:24	-0.65	3/19/2005 23:24	0.22	3/20/2005 5:24	-0.54
3/19/2005 17:30	-0.58	3/19/2005 23:30	0.16	3/20/2005 5:30	-0.42

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/20/2005 5:36	-0.31	3/20/2005 11:36	0.67	3/20/2005 17:36	-1.43
3/20/2005 5:42	-0.20	3/20/2005 11:42	0.65	3/20/2005 17:42	-1.33
3/20/2005 5:48	-0.09	3/20/2005 11:48	0.60	3/20/2005 17:48	-1.22
3/20/2005 5:54	0.03	3/20/2005 11:54	0.58	3/20/2005 17:54	-1.13
3/20/2005 6:00	0.15	3/20/2005 12:00	0.53	3/20/2005 18:00	-0.99
3/20/2005 6:06	0.26	3/20/2005 12:06	0.49	3/20/2005 18:06	-0.89
3/20/2005 6:12	0.40	3/20/2005 12:12	0.45	3/20/2005 18:12	-0.78
3/20/2005 6:18	0.49	3/20/2005 12:18	0.40	3/20/2005 18:18	-0.66
3/20/2005 6:24	0.61	3/20/2005 12:24	0.38	3/20/2005 18:24	-0.57
3/20/2005 6:30	0.73	3/20/2005 12:30	0.33	3/20/2005 18:30	-0.45
3/20/2005 6:36	0.82	3/20/2005 12:36	0.31	3/20/2005 18:36	-0.36
3/20/2005 6:42	0.94	3/20/2005 12:42	0.24	3/20/2005 18:42	-0.27
3/20/2005 6:48	1.03	3/20/2005 12:48	0.17	3/20/2005 18:48	-0.15
3/20/2005 6:54	1.12	3/20/2005 12:54	0.13	3/20/2005 18:54	-0.06
3/20/2005 7:00	1.21	3/20/2005 13:00	0.08	3/20/2005 19:00	0.06
3/20/2005 7:06	1.30	3/20/2005 13:06	0.01	3/20/2005 19:06	0.15
3/20/2005 7:12	1.40	3/20/2005 13:12	-0.06	3/20/2005 19:12	0.25
3/20/2005 7:18	1.47	3/20/2005 13:18	-0.12	3/20/2005 19:18	0.34
3/20/2005 7:24	1.54	3/20/2005 13:24	-0.19	3/20/2005 19:24	0.43
3/20/2005 7:30	1.61	3/20/2005 13:30	-0.28	3/20/2005 19:30	0.52
3/20/2005 7:36	1.66	3/20/2005 13:36	-0.37	3/20/2005 19:36	0.63
3/20/2005 7:42	1.71	3/20/2005 13:42	-0.44	3/20/2005 19:42	0.71
3/20/2005 7:48	1.73	3/20/2005 13:48	-0.51	3/20/2005 19:48	0.84
3/20/2005 7:54	1.78	3/20/2005 13:54	-0.60	3/20/2005 19:54	0.89
3/20/2005 8:00	1.81	3/20/2005 14:00	-0.69	3/20/2005 20:00	0.98
3/20/2005 8:06	1.81	3/20/2005 14:06	-0.75	3/20/2005 20:06	1.05
3/20/2005 8:12	1.81	3/20/2005 14:12	-0.82	3/20/2005 20:12	1.15
3/20/2005 8:18	1.81	3/20/2005 14:18	-0.89	3/20/2005 20:18	1.19
3/20/2005 8:24	1.83	3/20/2005 14:24	-0.98	3/20/2005 20:24	1.24
3/20/2005 8:30	1.83	3/20/2005 14:30	-1.05	3/20/2005 20:30	1.33
3/20/2005 8:36	1.83	3/20/2005 14:36	-1.12	3/20/2005 20:36	1.35
3/20/2005 8:42	1.81	3/20/2005 14:42	-1.19	3/20/2005 20:42	1.39
3/20/2005 8:48	1.81	3/20/2005 14:48	-1.28	3/20/2005 20:48	1.47
3/20/2005 8:54	1.79	3/20/2005 14:54	-1.34	3/20/2005 20:54	1.49
3/20/2005 9:00	1.76	3/20/2005 15:00	-1.41	3/20/2005 21:00	1.54
3/20/2005 9:06	1.76	3/20/2005 15:06	-1.48	3/20/2005 21:06	1.56
3/20/2005 9:12	1.74	3/20/2005 15:12	-1.54	3/20/2005 21:12	1.56
3/20/2005 9:18	1.70	3/20/2005 15:18	-1.63	3/20/2005 21:18	1.59
3/20/2005 9:24	1.67	3/20/2005 15:24	-1.68	3/20/2005 21:24	1.61
3/20/2005 9:30	1.65	3/20/2005 15:30	-1.72	3/20/2005 21:30	1.61
3/20/2005 9:36	1.62	3/20/2005 15:36	-1.79	3/20/2005 21:36	1.58
3/20/2005 9:42	1.58	3/20/2005 15:42	-1.85	3/20/2005 21:42	1.61
3/20/2005 9:48	1.56	3/20/2005 15:48	-1.92	3/20/2005 21:48	1.61
3/20/2005 9:54	1.51	3/20/2005 15:54	-1.96	3/20/2005 21:54	1.59
3/20/2005 10:00	1.47	3/20/2005 16:00	-2.00	3/20/2005 22:00	1.56
3/20/2005 10:06	1.42	3/20/2005 16:06	-2.03	3/20/2005 22:06	1.54
3/20/2005 10:12	1.37	3/20/2005 16:12	-2.07	3/20/2005 22:12	1.52
3/20/2005 10:18	1.33	3/20/2005 16:18	-2.07	3/20/2005 22:18	1.48
3/20/2005 10:24	1.28	3/20/2005 16:24	-2.09	3/20/2005 22:24	1.45
3/20/2005 10:30	1.24	3/20/2005 16:30	-2.11	3/20/2005 22:30	1.41
3/20/2005 10:36	1.19	3/20/2005 16:36	-2.09	3/20/2005 22:36	1.36
3/20/2005 10:42	1.12	3/20/2005 16:42	-2.06	3/20/2005 22:42	1.34
3/20/2005 10:48	1.08	3/20/2005 16:48	-2.04	3/20/2005 22:48	1.27
3/20/2005 10:54	1.01	3/20/2005 16:54	-1.99	3/20/2005 22:54	1.20
3/20/2005 11:00	0.97	3/20/2005 17:00	-1.94	3/20/2005 23:00	1.11
3/20/2005 11:06	0.89	3/20/2005 17:06	-1.88	3/20/2005 23:06	1.06
3/20/2005 11:12	0.85	3/20/2005 17:12	-1.80	3/20/2005 23:12	1.00
3/20/2005 11:18	0.81	3/20/2005 17:18	-1.71	3/20/2005 23:18	0.95
3/20/2005 11:24	0.76	3/20/2005 17:24	-1.66	3/20/2005 23:24	0.88
3/20/2005 11:30	0.71	3/20/2005 17:30	-1.55	3/20/2005 23:30	0.79

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/20/2005 23:36	0.74	3/21/2005 5:36	-1.15	3/21/2005 11:36	1.67
3/20/2005 23:42	0.67	3/21/2005 5:42	-1.04	3/21/2005 11:42	1.61
3/20/2005 23:48	0.65	3/21/2005 5:48	-0.95	3/21/2005 11:48	1.52
3/20/2005 23:54	0.56	3/21/2005 5:54	-0.83	3/21/2005 11:54	1.45
3/21/2005 0:00	0.49	3/21/2005 6:00	-0.72	3/21/2005 12:00	1.36
3/21/2005 0:06	0.42	3/21/2005 6:06	-0.58	3/21/2005 12:06	1.26
3/21/2005 0:12	0.37	3/21/2005 6:12	-0.47	3/21/2005 12:12	1.18
3/21/2005 0:18	0.32	3/21/2005 6:18	-0.36	3/21/2005 12:18	1.08
3/21/2005 0:24	0.26	3/21/2005 6:24	-0.24	3/21/2005 12:24	0.99
3/21/2005 0:30	0.19	3/21/2005 6:30	-0.12	3/21/2005 12:30	0.92
3/21/2005 0:36	0.16	3/21/2005 6:36	0.01	3/21/2005 12:36	0.83
3/21/2005 0:42	0.10	3/21/2005 6:42	0.13	3/21/2005 12:42	0.74
3/21/2005 0:48	0.03	3/21/2005 6:48	0.24	3/21/2005 12:48	0.65
3/21/2005 0:54	0.01	3/21/2005 6:54	0.34	3/21/2005 12:54	0.54
3/21/2005 1:00	-0.06	3/21/2005 7:00	0.43	3/21/2005 13:00	0.47
3/21/2005 1:06	-0.11	3/21/2005 7:06	0.54	3/21/2005 13:06	0.40
3/21/2005 1:12	-0.15	3/21/2005 7:12	0.61	3/21/2005 13:12	0.31
3/21/2005 1:18	-0.19	3/21/2005 7:18	0.73	3/21/2005 13:18	0.22
3/21/2005 1:24	-0.26	3/21/2005 7:24	0.85	3/21/2005 13:24	0.13
3/21/2005 1:30	-0.30	3/21/2005 7:30	0.95	3/21/2005 13:30	0.04
3/21/2005 1:36	-0.38	3/21/2005 7:36	1.03	3/21/2005 13:36	-0.06
3/21/2005 1:42	-0.44	3/21/2005 7:42	1.13	3/21/2005 13:42	-0.15
3/21/2005 1:48	-0.48	3/21/2005 7:48	1.22	3/21/2005 13:48	-0.22
3/21/2005 1:54	-0.55	3/21/2005 7:54	1.32	3/21/2005 13:54	-0.31
3/21/2005 2:00	-0.59	3/21/2005 8:00	1.40	3/21/2005 14:00	-0.38
3/21/2005 2:06	-0.69	3/21/2005 8:06	1.45	3/21/2005 14:06	-0.48
3/21/2005 2:12	-0.73	3/21/2005 8:12	1.54	3/21/2005 14:12	-0.57
3/21/2005 2:18	-0.80	3/21/2005 8:18	1.61	3/21/2005 14:18	-0.66
3/21/2005 2:24	-0.86	3/21/2005 8:24	1.68	3/21/2005 14:24	-0.75
3/21/2005 2:30	-0.95	3/21/2005 8:30	1.72	3/21/2005 14:30	-0.84
3/21/2005 2:36	-1.00	3/21/2005 8:36	1.79	3/21/2005 14:36	-0.94
3/21/2005 2:42	-1.07	3/21/2005 8:42	1.84	3/21/2005 14:42	-1.03
3/21/2005 2:48	-1.14	3/21/2005 8:48	1.88	3/21/2005 14:48	-1.10
3/21/2005 2:54	-1.18	3/21/2005 8:54	1.92	3/21/2005 14:54	-1.19
3/21/2005 3:00	-1.23	3/21/2005 9:00	1.93	3/21/2005 15:00	-1.26
3/21/2005 3:06	-1.29	3/21/2005 9:06	1.97	3/21/2005 15:06	-1.31
3/21/2005 3:12	-1.36	3/21/2005 9:12	2.03	3/21/2005 15:12	-1.38
3/21/2005 3:18	-1.40	3/21/2005 9:18	2.05	3/21/2005 15:18	-1.44
3/21/2005 3:24	-1.45	3/21/2005 9:24	2.09	3/21/2005 15:24	-1.51
3/21/2005 3:30	-1.52	3/21/2005 9:30	2.13	3/21/2005 15:30	-1.54
3/21/2005 3:36	-1.54	3/21/2005 9:36	2.14	3/21/2005 15:36	-1.61
3/21/2005 3:42	-1.58	3/21/2005 9:42	2.17	3/21/2005 15:42	-1.68
3/21/2005 3:48	-1.60	3/21/2005 9:48	2.19	3/21/2005 15:48	-1.72
3/21/2005 3:54	-1.65	3/21/2005 9:54	2.20	3/21/2005 15:54	-1.76
3/21/2005 4:00	-1.67	3/21/2005 10:00	2.20	3/21/2005 16:00	-1.81
3/21/2005 4:06	-1.69	3/21/2005 10:06	2.22	3/21/2005 16:06	-1.88
3/21/2005 4:12	-1.72	3/21/2005 10:12	2.22	3/21/2005 16:12	-1.94
3/21/2005 4:18	-1.73	3/21/2005 10:18	2.20	3/21/2005 16:18	-1.99
3/21/2005 4:24	-1.73	3/21/2005 10:24	2.20	3/21/2005 16:24	-2.03
3/21/2005 4:30	-1.74	3/21/2005 10:30	2.20	3/21/2005 16:30	-2.08
3/21/2005 4:36	-1.74	3/21/2005 10:36	2.17	3/21/2005 16:36	-2.13
3/21/2005 4:42	-1.73	3/21/2005 10:42	2.17	3/21/2005 16:42	-2.20
3/21/2005 4:48	-1.66	3/21/2005 10:48	2.14	3/21/2005 16:48	-2.22
3/21/2005 4:54	-1.66	3/21/2005 10:54	2.12	3/21/2005 16:54	-2.29
3/21/2005 5:00	-1.61	3/21/2005 11:00	2.05	3/21/2005 17:00	-2.31
3/21/2005 5:06	-1.56	3/21/2005 11:06	1.98	3/21/2005 17:06	-2.33
3/21/2005 5:12	-1.50	3/21/2005 11:12	1.94	3/21/2005 17:12	-2.33
3/21/2005 5:18	-1.43	3/21/2005 11:18	1.89	3/21/2005 17:18	-2.35
3/21/2005 5:24	-1.34	3/21/2005 11:24	1.82	3/21/2005 17:24	-2.40
3/21/2005 5:30	-1.26	3/21/2005 11:30	1.75	3/21/2005 17:30	-2.39

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/21/2005 17:36	-2.40	3/21/2005 23:36	1.54	3/22/2005 5:36	-2.08
3/21/2005 17:42	-2.34	3/21/2005 23:42	1.52	3/22/2005 5:42	-2.01
3/21/2005 17:48	-2.32	3/21/2005 23:48	1.49	3/22/2005 5:48	-1.92
3/21/2005 17:54	-2.30	3/21/2005 23:54	1.44	3/22/2005 5:54	-1.85
3/21/2005 18:00	-2.25	3/22/2005 0:00	1.42	3/22/2005 6:00	-1.76
3/21/2005 18:06	-2.19	3/22/2005 0:06	1.37	3/22/2005 6:06	-1.67
3/21/2005 18:12	-2.12	3/22/2005 0:12	1.32	3/22/2005 6:12	-1.54
3/21/2005 18:18	-2.03	3/22/2005 0:18	1.27	3/22/2005 6:18	-1.42
3/21/2005 18:24	-1.93	3/22/2005 0:24	1.20	3/22/2005 6:24	-1.34
3/21/2005 18:30	-1.82	3/22/2005 0:30	1.12	3/22/2005 6:30	-1.22
3/21/2005 18:36	-1.71	3/22/2005 0:36	1.05	3/22/2005 6:36	-1.11
3/21/2005 18:42	-1.57	3/22/2005 0:42	1.00	3/22/2005 6:42	-0.97
3/21/2005 18:48	-1.43	3/22/2005 0:48	0.93	3/22/2005 6:48	-0.85
3/21/2005 18:54	-1.27	3/22/2005 0:54	0.86	3/22/2005 6:54	-0.74
3/21/2005 19:00	-1.13	3/22/2005 1:00	0.76	3/22/2005 7:00	-0.62
3/21/2005 19:06	-1.02	3/22/2005 1:06	0.69	3/22/2005 7:06	-0.51
3/21/2005 19:12	-0.89	3/22/2005 1:12	0.60	3/22/2005 7:12	-0.39
3/21/2005 19:18	-0.75	3/22/2005 1:18	0.53	3/22/2005 7:18	-0.26
3/21/2005 19:24	-0.63	3/22/2005 1:24	0.43	3/22/2005 7:24	-0.14
3/21/2005 19:30	-0.52	3/22/2005 1:30	0.32	3/22/2005 7:30	-0.03
3/21/2005 19:36	-0.41	3/22/2005 1:36	0.25	3/22/2005 7:36	0.10
3/21/2005 19:42	-0.30	3/22/2005 1:42	0.16	3/22/2005 7:42	0.20
3/21/2005 19:48	-0.19	3/22/2005 1:48	0.04	3/22/2005 7:48	0.33
3/21/2005 19:54	-0.07	3/22/2005 1:54	-0.05	3/22/2005 7:54	0.42
3/21/2005 20:00	0.02	3/22/2005 2:00	-0.14	3/22/2005 8:00	0.56
3/21/2005 20:06	0.11	3/22/2005 2:06	-0.24	3/22/2005 8:06	0.64
3/21/2005 20:12	0.22	3/22/2005 2:12	-0.35	3/22/2005 8:12	0.77
3/21/2005 20:18	0.29	3/22/2005 2:18	-0.44	3/22/2005 8:18	0.88
3/21/2005 20:24	0.38	3/22/2005 2:24	-0.51	3/22/2005 8:24	0.99
3/21/2005 20:30	0.47	3/22/2005 2:30	-0.63	3/22/2005 8:30	1.08
3/21/2005 20:36	0.58	3/22/2005 2:36	-0.74	3/22/2005 8:36	1.18
3/21/2005 20:42	0.65	3/22/2005 2:42	-0.83	3/22/2005 8:42	1.28
3/21/2005 20:48	0.74	3/22/2005 2:48	-0.91	3/22/2005 8:48	1.37
3/21/2005 20:54	0.81	3/22/2005 2:54	-1.00	3/22/2005 8:54	1.46
3/21/2005 21:00	0.90	3/22/2005 3:00	-1.09	3/22/2005 9:00	1.53
3/21/2005 21:06	0.96	3/22/2005 3:06	-1.21	3/22/2005 9:06	1.60
3/21/2005 21:12	1.03	3/22/2005 3:12	-1.30	3/22/2005 9:12	1.68
3/21/2005 21:18	1.12	3/22/2005 3:18	-1.37	3/22/2005 9:18	1.75
3/21/2005 21:24	1.16	3/22/2005 3:24	-1.44	3/22/2005 9:24	1.81
3/21/2005 21:30	1.23	3/22/2005 3:30	-1.51	3/22/2005 9:30	1.88
3/21/2005 21:36	1.27	3/22/2005 3:36	-1.58	3/22/2005 9:36	1.94
3/21/2005 21:42	1.34	3/22/2005 3:42	-1.67	3/22/2005 9:42	1.97
3/21/2005 21:48	1.38	3/22/2005 3:48	-1.74	3/22/2005 9:48	2.04
3/21/2005 21:54	1.40	3/22/2005 3:54	-1.81	3/22/2005 9:54	2.11
3/21/2005 22:00	1.45	3/22/2005 4:00	-1.88	3/22/2005 10:00	2.13
3/21/2005 22:06	1.48	3/22/2005 4:06	-1.93	3/22/2005 10:06	2.15
3/21/2005 22:12	1.53	3/22/2005 4:12	-1.98	3/22/2005 10:12	2.19
3/21/2005 22:18	1.53	3/22/2005 4:18	-2.07	3/22/2005 10:18	2.21
3/21/2005 22:24	1.57	3/22/2005 4:24	-2.11	3/22/2005 10:24	2.26
3/21/2005 22:30	1.62	3/22/2005 4:30	-2.13	3/22/2005 10:30	2.28
3/21/2005 22:36	1.61	3/22/2005 4:36	-2.21	3/22/2005 10:36	2.29
3/21/2005 22:42	1.61	3/22/2005 4:42	-2.23	3/22/2005 10:42	2.31
3/21/2005 22:48	1.63	3/22/2005 4:48	-2.28	3/22/2005 10:48	2.31
3/21/2005 22:54	1.63	3/22/2005 4:54	-2.27	3/22/2005 10:54	2.31
3/21/2005 23:00	1.65	3/22/2005 5:00	-2.28	3/22/2005 11:00	2.30
3/21/2005 23:06	1.62	3/22/2005 5:06	-2.28	3/22/2005 11:06	2.30
3/21/2005 23:12	1.62	3/22/2005 5:12	-2.26	3/22/2005 11:12	2.31
3/21/2005 23:18	1.60	3/22/2005 5:18	-2.21	3/22/2005 11:18	2.26
3/21/2005 23:24	1.60	3/22/2005 5:24	-2.17	3/22/2005 11:24	2.26
3/21/2005 23:30	1.57	3/22/2005 5:30	-2.14	3/22/2005 11:30	2.23

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/22/2005 11:36	2.20	3/22/2005 17:36	-2.73	3/22/2005 23:36	2.17
3/22/2005 11:42	2.16	3/22/2005 17:42	-2.77	3/22/2005 23:42	2.17
3/22/2005 11:48	2.13	3/22/2005 17:48	-2.77	3/22/2005 23:48	2.21
3/22/2005 11:54	2.11	3/22/2005 17:54	-2.77	3/22/2005 23:54	2.20
3/22/2005 12:00	2.04	3/22/2005 18:00	-2.74	3/23/2005 0:00	2.17
3/22/2005 12:06	1.99	3/22/2005 18:06	-2.73	3/23/2005 0:06	2.18
3/22/2005 12:12	1.92	3/22/2005 18:12	-2.68	3/23/2005 0:12	2.16
3/22/2005 12:18	1.91	3/22/2005 18:18	-2.65	3/23/2005 0:18	2.13
3/22/2005 12:24	1.84	3/22/2005 18:24	-2.59	3/23/2005 0:24	2.09
3/22/2005 12:30	1.77	3/22/2005 18:30	-2.52	3/23/2005 0:30	2.05
3/22/2005 12:36	1.70	3/22/2005 18:36	-2.44	3/23/2005 0:36	2.00
3/22/2005 12:42	1.63	3/22/2005 18:42	-2.35	3/23/2005 0:42	1.96
3/22/2005 12:48	1.56	3/22/2005 18:48	-2.26	3/23/2005 0:48	1.91
3/22/2005 12:54	1.49	3/22/2005 18:54	-2.12	3/23/2005 0:54	1.82
3/22/2005 13:00	1.40	3/22/2005 19:00	-1.98	3/23/2005 1:00	1.76
3/22/2005 13:06	1.31	3/22/2005 19:06	-1.84	3/23/2005 1:06	1.68
3/22/2005 13:12	1.21	3/22/2005 19:12	-1.73	3/23/2005 1:12	1.60
3/22/2005 13:18	1.14	3/22/2005 19:18	-1.57	3/23/2005 1:18	1.51
3/22/2005 13:24	1.05	3/22/2005 19:24	-1.40	3/23/2005 1:24	1.40
3/22/2005 13:30	0.94	3/22/2005 19:30	-1.26	3/23/2005 1:30	1.31
3/22/2005 13:36	0.84	3/22/2005 19:36	-1.13	3/23/2005 1:36	1.21
3/22/2005 13:42	0.75	3/22/2005 19:42	-0.98	3/23/2005 1:42	1.12
3/22/2005 13:48	0.68	3/22/2005 19:48	-0.84	3/23/2005 1:48	1.03
3/22/2005 13:54	0.58	3/22/2005 19:54	-0.70	3/23/2005 1:54	0.94
3/22/2005 14:00	0.49	3/22/2005 20:00	-0.56	3/23/2005 2:00	0.85
3/22/2005 14:06	0.38	3/22/2005 20:06	-0.44	3/23/2005 2:06	0.75
3/22/2005 14:12	0.29	3/22/2005 20:12	-0.32	3/23/2005 2:12	0.63
3/22/2005 14:18	0.17	3/22/2005 20:18	-0.20	3/23/2005 2:18	0.54
3/22/2005 14:24	0.08	3/22/2005 20:24	-0.07	3/23/2005 2:24	0.43
3/22/2005 14:30	-0.03	3/22/2005 20:30	0.03	3/23/2005 2:30	0.32
3/22/2005 14:36	-0.15	3/22/2005 20:36	0.16	3/23/2005 2:36	0.19
3/22/2005 14:42	-0.24	3/22/2005 20:42	0.28	3/23/2005 2:42	0.07
3/22/2005 14:48	-0.35	3/22/2005 20:48	0.37	3/23/2005 2:48	-0.04
3/22/2005 14:54	-0.46	3/22/2005 20:54	0.49	3/23/2005 2:54	-0.15
3/22/2005 15:00	-0.56	3/22/2005 21:00	0.60	3/23/2005 3:00	-0.29
3/22/2005 15:06	-0.67	3/22/2005 21:06	0.72	3/23/2005 3:06	-0.40
3/22/2005 15:12	-0.76	3/22/2005 21:12	0.81	3/23/2005 3:12	-0.54
3/22/2005 15:18	-0.87	3/22/2005 21:18	0.90	3/23/2005 3:18	-0.67
3/22/2005 15:24	-0.98	3/22/2005 21:24	0.99	3/23/2005 3:24	-0.78
3/22/2005 15:30	-1.07	3/22/2005 21:30	1.08	3/23/2005 3:30	-0.89
3/22/2005 15:36	-1.17	3/22/2005 21:36	1.17	3/23/2005 3:36	-1.03
3/22/2005 15:42	-1.27	3/22/2005 21:42	1.27	3/23/2005 3:42	-1.15
3/22/2005 15:48	-1.36	3/22/2005 21:48	1.36	3/23/2005 3:48	-1.27
3/22/2005 15:54	-1.48	3/22/2005 21:54	1.43	3/23/2005 3:54	-1.41
3/22/2005 16:00	-1.57	3/22/2005 22:00	1.53	3/23/2005 4:00	-1.50
3/22/2005 16:06	-1.64	3/22/2005 22:06	1.59	3/23/2005 4:06	-1.56
3/22/2005 16:12	-1.73	3/22/2005 22:12	1.67	3/23/2005 4:12	-1.68
3/22/2005 16:18	-1.85	3/22/2005 22:18	1.72	3/23/2005 4:18	-1.74
3/22/2005 16:24	-1.94	3/22/2005 22:24	1.78	3/23/2005 4:24	-1.83
3/22/2005 16:30	-2.02	3/22/2005 22:30	1.85	3/23/2005 4:30	-1.89
3/22/2005 16:36	-2.09	3/22/2005 22:36	1.89	3/23/2005 4:36	-1.98
3/22/2005 16:42	-2.20	3/22/2005 22:42	1.93	3/23/2005 4:42	-2.02
3/22/2005 16:48	-2.29	3/22/2005 22:48	1.99	3/23/2005 4:48	-2.11
3/22/2005 16:54	-2.36	3/22/2005 22:54	2.01	3/23/2005 4:54	-2.15
3/22/2005 17:00	-2.42	3/22/2005 23:00	2.07	3/23/2005 5:00	-2.20
3/22/2005 17:06	-2.49	3/22/2005 23:06	2.06	3/23/2005 5:06	-2.24
3/22/2005 17:12	-2.56	3/22/2005 23:12	2.08	3/23/2005 5:12	-2.26
3/22/2005 17:18	-2.60	3/22/2005 23:18	2.15	3/23/2005 5:18	-2.30
3/22/2005 17:24	-2.66	3/22/2005 23:24	2.15	3/23/2005 5:24	-2.32
3/22/2005 17:30	-2.70	3/22/2005 23:30	2.15	3/23/2005 5:30	-2.37

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/23/2005 5:36	-2.35	3/23/2005 11:36	2.55	3/23/2005 17:36	-2.35
3/23/2005 5:42	-2.37	3/23/2005 11:42	2.55	3/23/2005 17:42	-2.43
3/23/2005 5:48	-2.37	3/23/2005 11:48	2.56	3/23/2005 17:48	-2.50
3/23/2005 5:54	-2.36	3/23/2005 11:54	2.55	3/23/2005 17:54	-2.59
3/23/2005 6:00	-2.36	3/23/2005 12:00	2.52	3/23/2005 18:00	-2.65
3/23/2005 6:06	-2.34	3/23/2005 12:06	2.48	3/23/2005 18:06	-2.72
3/23/2005 6:12	-2.29	3/23/2005 12:12	2.49	3/23/2005 18:12	-2.76
3/23/2005 6:18	-2.26	3/23/2005 12:18	2.46	3/23/2005 18:18	-2.82
3/23/2005 6:24	-2.19	3/23/2005 12:24	2.39	3/23/2005 18:24	-2.83
3/23/2005 6:30	-2.16	3/23/2005 12:30	2.32	3/23/2005 18:30	-2.82
3/23/2005 6:36	-2.09	3/23/2005 12:36	2.32	3/23/2005 18:36	-2.79
3/23/2005 6:42	-1.99	3/23/2005 12:42	2.26	3/23/2005 18:42	-2.79
3/23/2005 6:48	-1.93	3/23/2005 12:48	2.18	3/23/2005 18:48	-2.73
3/23/2005 6:54	-1.83	3/23/2005 12:54	2.14	3/23/2005 18:54	-2.70
3/23/2005 7:00	-1.72	3/23/2005 13:00	2.06	3/23/2005 19:00	-2.63
3/23/2005 7:06	-1.65	3/23/2005 13:06	1.98	3/23/2005 19:06	-2.54
3/23/2005 7:12	-1.51	3/23/2005 13:12	1.91	3/23/2005 19:12	-2.42
3/23/2005 7:18	-1.37	3/23/2005 13:18	1.84	3/23/2005 19:18	-2.31
3/23/2005 7:24	-1.25	3/23/2005 13:24	1.75	3/23/2005 19:24	-2.18
3/23/2005 7:30	-1.11	3/23/2005 13:30	1.67	3/23/2005 19:30	-2.02
3/23/2005 7:36	-1.00	3/23/2005 13:36	1.57	3/23/2005 19:36	-1.86
3/23/2005 7:42	-0.85	3/23/2005 13:42	1.48	3/23/2005 19:42	-1.71
3/23/2005 7:48	-0.71	3/23/2005 13:48	1.37	3/23/2005 19:48	-1.55
3/23/2005 7:54	-0.57	3/23/2005 13:54	1.26	3/23/2005 19:54	-1.38
3/23/2005 8:00	-0.46	3/23/2005 14:00	1.16	3/23/2005 20:00	-1.22
3/23/2005 8:06	-0.35	3/23/2005 14:06	1.04	3/23/2005 20:06	-1.01
3/23/2005 8:12	-0.19	3/23/2005 14:12	0.93	3/23/2005 20:12	-0.84
3/23/2005 8:18	-0.08	3/23/2005 14:18	0.82	3/23/2005 20:18	-0.60
3/23/2005 8:24	0.05	3/23/2005 14:24	0.71	3/23/2005 20:24	-0.43
3/23/2005 8:30	0.16	3/23/2005 14:30	0.62	3/23/2005 20:30	-0.26
3/23/2005 8:36	0.24	3/23/2005 14:36	0.52	3/23/2005 20:36	-0.10
3/23/2005 8:42	0.33	3/23/2005 14:42	0.39	3/23/2005 20:42	0.05
3/23/2005 8:48	0.45	3/23/2005 14:48	0.30	3/23/2005 20:48	0.21
3/23/2005 8:54	0.59	3/23/2005 14:54	0.19	3/23/2005 20:54	0.35
3/23/2005 9:00	0.70	3/23/2005 15:00	0.08	3/23/2005 21:00	0.52
3/23/2005 9:06	0.81	3/23/2005 15:06	-0.02	3/23/2005 21:06	0.70
3/23/2005 9:12	0.93	3/23/2005 15:12	-0.13	3/23/2005 21:12	0.84
3/23/2005 9:18	1.04	3/23/2005 15:18	-0.24	3/23/2005 21:18	1.01
3/23/2005 9:24	1.16	3/23/2005 15:24	-0.38	3/23/2005 21:24	1.17
3/23/2005 9:30	1.28	3/23/2005 15:30	-0.48	3/23/2005 21:30	1.31
3/23/2005 9:36	1.37	3/23/2005 15:36	-0.57	3/23/2005 21:36	1.45
3/23/2005 9:42	1.46	3/23/2005 15:42	-0.68	3/23/2005 21:42	1.57
3/23/2005 9:48	1.61	3/23/2005 15:48	-0.79	3/23/2005 21:48	1.70
3/23/2005 9:54	1.68	3/23/2005 15:54	-0.89	3/23/2005 21:54	1.82
3/23/2005 10:00	1.76	3/23/2005 16:00	-0.98	3/23/2005 22:00	1.94
3/23/2005 10:06	1.87	3/23/2005 16:06	-1.09	3/23/2005 22:06	2.06
3/23/2005 10:12	1.98	3/23/2005 16:12	-1.18	3/23/2005 22:12	2.15
3/23/2005 10:18	2.05	3/23/2005 16:18	-1.27	3/23/2005 22:18	2.26
3/23/2005 10:24	2.12	3/23/2005 16:24	-1.36	3/23/2005 22:24	2.34
3/23/2005 10:30	2.21	3/23/2005 16:30	-1.43	3/23/2005 22:30	2.42
3/23/2005 10:36	2.28	3/23/2005 16:36	-1.52	3/23/2005 22:36	2.51
3/23/2005 10:42	2.35	3/23/2005 16:42	-1.61	3/23/2005 22:42	2.61
3/23/2005 10:48	2.39	3/23/2005 16:48	-1.70	3/23/2005 22:48	2.68
3/23/2005 10:54	2.41	3/23/2005 16:54	-1.79	3/23/2005 22:54	2.77
3/23/2005 11:00	2.48	3/23/2005 17:00	-1.85	3/23/2005 23:00	2.82
3/23/2005 11:06	2.50	3/23/2005 17:06	-1.95	3/23/2005 23:06	2.85
3/23/2005 11:12	2.52	3/23/2005 17:12	-2.07	3/23/2005 23:12	2.92
3/23/2005 11:18	2.55	3/23/2005 17:18	-2.13	3/23/2005 23:18	3.01
3/23/2005 11:24	2.56	3/23/2005 17:24	-2.22	3/23/2005 23:24	3.09
3/23/2005 11:30	2.55	3/23/2005 17:30	-2.28	3/23/2005 23:30	3.14

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/23/2005 23:36	3.20	3/24/2005 5:36	-0.79	3/24/2005 11:36	3.18
3/23/2005 23:42	3.25	3/24/2005 5:42	-0.81	3/24/2005 11:42	3.24
3/23/2005 23:48	3.32	3/24/2005 5:48	-0.87	3/24/2005 11:48	3.31
3/23/2005 23:54	3.35	3/24/2005 5:54	-0.91	3/24/2005 11:54	3.37
3/24/2005 0:00	3.41	3/24/2005 6:00	-0.93	3/24/2005 12:00	3.44
3/24/2005 0:06	3.46	3/24/2005 6:06	-0.95	3/24/2005 12:06	3.48
3/24/2005 0:12	3.49	3/24/2005 6:12	-0.95	3/24/2005 12:12	3.55
3/24/2005 0:18	3.54	3/24/2005 6:18	-0.98	3/24/2005 12:18	3.62
3/24/2005 0:24	3.55	3/24/2005 6:24	-0.98	3/24/2005 12:24	3.64
3/24/2005 0:30	3.60	3/24/2005 6:30	-0.98	3/24/2005 12:30	3.68
3/24/2005 0:36	3.59	3/24/2005 6:36	-0.98	3/24/2005 12:36	3.72
3/24/2005 0:42	3.59	3/24/2005 6:42	-0.98	3/24/2005 12:42	3.74
3/24/2005 0:48	3.59	3/24/2005 6:48	-0.95	3/24/2005 12:48	3.76
3/24/2005 0:54	3.59	3/24/2005 6:54	-0.90	3/24/2005 12:54	3.78
3/24/2005 1:00	3.54	3/24/2005 7:00	-0.88	3/24/2005 13:00	3.80
3/24/2005 1:06	3.52	3/24/2005 7:06	-0.86	3/24/2005 13:06	3.80
3/24/2005 1:12	3.47	3/24/2005 7:12	-0.82	3/24/2005 13:12	3.77
3/24/2005 1:18	3.43	3/24/2005 7:18	-0.74	3/24/2005 13:18	3.74
3/24/2005 1:24	3.38	3/24/2005 7:24	-0.67	3/24/2005 13:24	3.74
3/24/2005 1:30	3.34	3/24/2005 7:30	-0.60	3/24/2005 13:30	3.72
3/24/2005 1:36	3.29	3/24/2005 7:36	-0.56	3/24/2005 13:36	3.64
3/24/2005 1:42	3.22	3/24/2005 7:42	-0.46	3/24/2005 13:42	3.64
3/24/2005 1:48	3.15	3/24/2005 7:48	-0.40	3/24/2005 13:48	3.57
3/24/2005 1:54	3.09	3/24/2005 7:54	-0.30	3/24/2005 13:54	3.50
3/24/2005 2:00	3.02	3/24/2005 8:00	-0.22	3/24/2005 14:00	3.43
3/24/2005 2:06	2.95	3/24/2005 8:06	-0.11	3/24/2005 14:06	3.35
3/24/2005 2:12	2.87	3/24/2005 8:12	0.01	3/24/2005 14:12	3.28
3/24/2005 2:18	2.81	3/24/2005 8:18	0.10	3/24/2005 14:18	3.18
3/24/2005 2:24	2.71	3/24/2005 8:24	0.18	3/24/2005 14:24	3.12
3/24/2005 2:30	2.65	3/24/2005 8:30	0.32	3/24/2005 14:30	3.02
3/24/2005 2:36	2.56	3/24/2005 8:36	0.41	3/24/2005 14:36	2.93
3/24/2005 2:42	2.48	3/24/2005 8:42	0.52	3/24/2005 14:42	2.82
3/24/2005 2:48	2.39	3/24/2005 8:48	0.62	3/24/2005 14:48	2.73
3/24/2005 2:54	2.28	3/24/2005 8:54	0.71	3/24/2005 14:54	2.64
3/24/2005 3:00	2.17	3/24/2005 9:00	0.82	3/24/2005 15:00	2.54
3/24/2005 3:06	2.08	3/24/2005 9:06	0.93	3/24/2005 15:06	2.43
3/24/2005 3:12	1.96	3/24/2005 9:12	0.99	3/24/2005 15:12	2.31
3/24/2005 3:18	1.87	3/24/2005 9:18	1.11	3/24/2005 15:18	2.22
3/24/2005 3:24	1.75	3/24/2005 9:24	1.22	3/24/2005 15:24	2.13
3/24/2005 3:30	1.64	3/24/2005 9:30	1.31	3/24/2005 15:30	2.02
3/24/2005 3:36	1.50	3/24/2005 9:36	1.41	3/24/2005 15:36	1.90
3/24/2005 3:42	1.36	3/24/2005 9:42	1.53	3/24/2005 15:42	1.74
3/24/2005 3:48	1.23	3/24/2005 9:48	1.59	3/24/2005 15:48	1.63
3/24/2005 3:54	1.07	3/24/2005 9:54	1.70	3/24/2005 15:54	1.52
3/24/2005 4:00	0.93	3/24/2005 10:00	1.81	3/24/2005 16:00	1.37
3/24/2005 4:06	0.77	3/24/2005 10:06	1.90	3/24/2005 16:06	1.22
3/24/2005 4:12	0.63	3/24/2005 10:12	2.03	3/24/2005 16:12	1.07
3/24/2005 4:18	0.49	3/24/2005 10:18	2.12	3/24/2005 16:18	0.92
3/24/2005 4:24	0.35	3/24/2005 10:24	2.23	3/24/2005 16:24	0.78
3/24/2005 4:30	0.23	3/24/2005 10:30	2.32	3/24/2005 16:30	0.63
3/24/2005 4:36	0.11	3/24/2005 10:36	2.41	3/24/2005 16:36	0.49
3/24/2005 4:42	-0.02	3/24/2005 10:42	2.50	3/24/2005 16:42	0.36
3/24/2005 4:48	-0.11	3/24/2005 10:48	2.59	3/24/2005 16:48	0.22
3/24/2005 4:54	-0.22	3/24/2005 10:54	2.65	3/24/2005 16:54	0.08
3/24/2005 5:00	-0.34	3/24/2005 11:00	2.74	3/24/2005 17:00	-0.06
3/24/2005 5:06	-0.46	3/24/2005 11:06	2.83	3/24/2005 17:06	-0.18
3/24/2005 5:12	-0.53	3/24/2005 11:12	2.89	3/24/2005 17:12	-0.29
3/24/2005 5:18	-0.59	3/24/2005 11:18	2.98	3/24/2005 17:18	-0.41
3/24/2005 5:24	-0.66	3/24/2005 11:24	3.05	3/24/2005 17:24	-0.52
3/24/2005 5:30	-0.72	3/24/2005 11:30	3.12	3/24/2005 17:30	-0.61

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/24/2005 17:36	-0.70	3/24/2005 23:36	2.71	3/25/2005 5:36	-0.84
3/24/2005 17:42	-0.79	3/24/2005 23:42	2.80	3/25/2005 5:42	-0.93
3/24/2005 17:48	-0.88	3/24/2005 23:48	2.85	3/25/2005 5:48	-1.02
3/24/2005 17:54	-0.97	3/24/2005 23:54	2.90	3/25/2005 5:54	-1.11
3/24/2005 18:00	-1.07	3/25/2005 0:00	2.95	3/25/2005 6:00	-1.20
3/24/2005 18:06	-1.14	3/25/2005 0:06	3.04	3/25/2005 6:06	-1.29
3/24/2005 18:12	-1.20	3/25/2005 0:12	3.06	3/25/2005 6:12	-1.36
3/24/2005 18:18	-1.27	3/25/2005 0:18	3.10	3/25/2005 6:18	-1.45
3/24/2005 18:24	-1.31	3/25/2005 0:24	3.14	3/25/2005 6:24	-1.51
3/24/2005 18:30	-1.36	3/25/2005 0:30	3.19	3/25/2005 6:30	-1.58
3/24/2005 18:36	-1.43	3/25/2005 0:36	3.23	3/25/2005 6:36	-1.66
3/24/2005 18:42	-1.46	3/25/2005 0:42	3.23	3/25/2005 6:42	-1.75
3/24/2005 18:48	-1.51	3/25/2005 0:48	3.30	3/25/2005 6:48	-1.82
3/24/2005 18:54	-1.55	3/25/2005 0:54	3.32	3/25/2005 6:54	-1.86
3/24/2005 19:00	-1.57	3/25/2005 1:00	3.34	3/25/2005 7:00	-1.92
3/24/2005 19:06	-1.62	3/25/2005 1:06	3.35	3/25/2005 7:06	-1.97
3/24/2005 19:12	-1.65	3/25/2005 1:12	3.38	3/25/2005 7:12	-2.01
3/24/2005 19:18	-1.67	3/25/2005 1:18	3.40	3/25/2005 7:18	-2.04
3/24/2005 19:24	-1.67	3/25/2005 1:24	3.40	3/25/2005 7:24	-2.08
3/24/2005 19:30	-1.65	3/25/2005 1:30	3.40	3/25/2005 7:30	-2.10
3/24/2005 19:36	-1.65	3/25/2005 1:36	3.39	3/25/2005 7:36	-2.12
3/24/2005 19:42	-1.63	3/25/2005 1:42	3.39	3/25/2005 7:42	-2.10
3/24/2005 19:48	-1.58	3/25/2005 1:48	3.37	3/25/2005 7:48	-2.09
3/24/2005 19:54	-1.56	3/25/2005 1:54	3.37	3/25/2005 7:54	-2.07
3/24/2005 20:00	-1.52	3/25/2005 2:00	3.31	3/25/2005 8:00	-2.03
3/24/2005 20:06	-1.45	3/25/2005 2:06	3.24	3/25/2005 8:06	-1.95
3/24/2005 20:12	-1.36	3/25/2005 2:12	3.21	3/25/2005 8:12	-1.86
3/24/2005 20:18	-1.27	3/25/2005 2:18	3.14	3/25/2005 8:18	-1.79
3/24/2005 20:24	-1.16	3/25/2005 2:24	3.08	3/25/2005 8:24	-1.68
3/24/2005 20:30	-1.02	3/25/2005 2:30	3.01	3/25/2005 8:30	-1.58
3/24/2005 20:36	-0.91	3/25/2005 2:36	2.91	3/25/2005 8:36	-1.50
3/24/2005 20:42	-0.77	3/25/2005 2:42	2.82	3/25/2005 8:42	-1.35
3/24/2005 20:48	-0.65	3/25/2005 2:48	2.70	3/25/2005 8:48	-1.22
3/24/2005 20:54	-0.52	3/25/2005 2:54	2.61	3/25/2005 8:54	-1.05
3/24/2005 21:00	-0.38	3/25/2005 3:00	2.47	3/25/2005 9:00	-0.92
3/24/2005 21:06	-0.23	3/25/2005 3:06	2.36	3/25/2005 9:06	-0.76
3/24/2005 21:12	-0.09	3/25/2005 3:12	2.27	3/25/2005 9:12	-0.60
3/24/2005 21:18	0.09	3/25/2005 3:18	2.15	3/25/2005 9:18	-0.44
3/24/2005 21:24	0.24	3/25/2005 3:24	2.02	3/25/2005 9:24	-0.29
3/24/2005 21:30	0.41	3/25/2005 3:30	1.88	3/25/2005 9:30	-0.15
3/24/2005 21:36	0.54	3/25/2005 3:36	1.78	3/25/2005 9:36	0.01
3/24/2005 21:42	0.69	3/25/2005 3:42	1.65	3/25/2005 9:42	0.17
3/24/2005 21:48	0.85	3/25/2005 3:48	1.54	3/25/2005 9:48	0.33
3/24/2005 21:54	1.01	3/25/2005 3:54	1.40	3/25/2005 9:54	0.47
3/24/2005 22:00	1.12	3/25/2005 4:00	1.29	3/25/2005 10:00	0.63
3/24/2005 22:06	1.26	3/25/2005 4:06	1.15	3/25/2005 10:06	0.77
3/24/2005 22:12	1.39	3/25/2005 4:12	1.02	3/25/2005 10:12	0.92
3/24/2005 22:18	1.52	3/25/2005 4:18	0.86	3/25/2005 10:18	1.08
3/24/2005 22:24	1.66	3/25/2005 4:24	0.73	3/25/2005 10:24	1.22
3/24/2005 22:30	1.77	3/25/2005 4:30	0.58	3/25/2005 10:30	1.33
3/24/2005 22:36	1.90	3/25/2005 4:36	0.43	3/25/2005 10:36	1.49
3/24/2005 22:42	2.02	3/25/2005 4:42	0.30	3/25/2005 10:42	1.63
3/24/2005 22:48	2.13	3/25/2005 4:48	0.15	3/25/2005 10:48	1.75
3/24/2005 22:54	2.22	3/25/2005 4:54	0.01	3/25/2005 10:54	1.91
3/24/2005 23:00	2.34	3/25/2005 5:00	-0.13	3/25/2005 11:00	2.05
3/24/2005 23:06	2.40	3/25/2005 5:06	-0.24	3/25/2005 11:06	2.16
3/24/2005 23:12	2.47	3/25/2005 5:12	-0.38	3/25/2005 11:12	2.27
3/24/2005 23:18	2.53	3/25/2005 5:18	-0.49	3/25/2005 11:18	2.38
3/24/2005 23:24	2.62	3/25/2005 5:24	-0.61	3/25/2005 11:24	2.47
3/24/2005 23:30	2.67	3/25/2005 5:30	-0.73	3/25/2005 11:30	2.57

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/25/2005 11:36	2.63	3/25/2005 17:36	-1.03	3/25/2005 23:36	2.02
3/25/2005 11:42	2.72	3/25/2005 17:42	-1.13	3/25/2005 23:42	2.11
3/25/2005 11:48	2.79	3/25/2005 17:48	-1.24	3/25/2005 23:48	2.18
3/25/2005 11:54	2.86	3/25/2005 17:54	-1.32	3/25/2005 23:54	2.27
3/25/2005 12:00	2.90	3/25/2005 18:00	-1.44	3/26/2005 0:00	2.33
3/25/2005 12:06	2.94	3/25/2005 18:06	-1.55	3/26/2005 0:06	2.39
3/25/2005 12:12	3.01	3/25/2005 18:12	-1.64	3/26/2005 0:12	2.46
3/25/2005 12:18	3.04	3/25/2005 18:18	-1.75	3/26/2005 0:18	2.50
3/25/2005 12:24	3.08	3/25/2005 18:24	-1.84	3/26/2005 0:24	2.55
3/25/2005 12:30	3.10	3/25/2005 18:30	-1.95	3/26/2005 0:30	2.61
3/25/2005 12:36	3.09	3/25/2005 18:36	-2.06	3/26/2005 0:36	2.65
3/25/2005 12:42	3.10	3/25/2005 18:42	-2.16	3/26/2005 0:42	2.70
3/25/2005 12:48	3.12	3/25/2005 18:48	-2.24	3/26/2005 0:48	2.73
3/25/2005 12:54	3.11	3/25/2005 18:54	-2.36	3/26/2005 0:54	2.77
3/25/2005 13:00	3.09	3/25/2005 19:00	-2.45	3/26/2005 1:00	2.79
3/25/2005 13:06	3.11	3/25/2005 19:06	-2.56	3/26/2005 1:06	2.83
3/25/2005 13:12	3.11	3/25/2005 19:12	-2.63	3/26/2005 1:12	2.83
3/25/2005 13:18	3.10	3/25/2005 19:18	-2.72	3/26/2005 1:18	2.83
3/25/2005 13:24	3.10	3/25/2005 19:24	-2.78	3/26/2005 1:24	2.88
3/25/2005 13:30	3.08	3/25/2005 19:30	-2.87	3/26/2005 1:30	2.85
3/25/2005 13:36	3.07	3/25/2005 19:36	-2.92	3/26/2005 1:36	2.85
3/25/2005 13:42	3.07	3/25/2005 19:42	-2.94	3/26/2005 1:42	2.90
3/25/2005 13:48	3.05	3/25/2005 19:48	-2.95	3/26/2005 1:48	2.88
3/25/2005 13:54	3.02	3/25/2005 19:54	-3.00	3/26/2005 1:54	2.85
3/25/2005 14:00	3.00	3/25/2005 20:00	-2.98	3/26/2005 2:00	2.85
3/25/2005 14:06	2.95	3/25/2005 20:06	-2.94	3/26/2005 2:06	2.83
3/25/2005 14:12	2.90	3/25/2005 20:12	-2.89	3/26/2005 2:12	2.83
3/25/2005 14:18	2.88	3/25/2005 20:18	-2.82	3/26/2005 2:18	2.80
3/25/2005 14:24	2.82	3/25/2005 20:24	-2.78	3/26/2005 2:24	2.76
3/25/2005 14:30	2.75	3/25/2005 20:30	-2.66	3/26/2005 2:30	2.71
3/25/2005 14:36	2.68	3/25/2005 20:36	-2.57	3/26/2005 2:36	2.66
3/25/2005 14:42	2.61	3/25/2005 20:42	-2.46	3/26/2005 2:42	2.61
3/25/2005 14:48	2.52	3/25/2005 20:48	-2.31	3/26/2005 2:48	2.54
3/25/2005 14:54	2.43	3/25/2005 20:54	-2.18	3/26/2005 2:54	2.45
3/25/2005 15:00	2.32	3/25/2005 21:00	-2.00	3/26/2005 3:00	2.36
3/25/2005 15:06	2.22	3/25/2005 21:06	-1.81	3/26/2005 3:06	2.29
3/25/2005 15:12	2.11	3/25/2005 21:12	-1.66	3/26/2005 3:12	2.15
3/25/2005 15:18	1.99	3/25/2005 21:18	-1.45	3/26/2005 3:18	2.05
3/25/2005 15:24	1.86	3/25/2005 21:24	-1.28	3/26/2005 3:24	1.92
3/25/2005 15:30	1.75	3/25/2005 21:30	-1.07	3/26/2005 3:30	1.83
3/25/2005 15:36	1.61	3/25/2005 21:36	-0.89	3/26/2005 3:36	1.69
3/25/2005 15:42	1.48	3/25/2005 21:42	-0.73	3/26/2005 3:42	1.55
3/25/2005 15:48	1.34	3/25/2005 21:48	-0.55	3/26/2005 3:48	1.42
3/25/2005 15:54	1.23	3/25/2005 21:54	-0.39	3/26/2005 3:54	1.30
3/25/2005 16:00	1.10	3/25/2005 22:00	-0.21	3/26/2005 4:00	1.17
3/25/2005 16:06	0.96	3/25/2005 22:06	-0.05	3/26/2005 4:06	1.05
3/25/2005 16:12	0.82	3/25/2005 22:12	0.11	3/26/2005 4:12	0.91
3/25/2005 16:18	0.66	3/25/2005 22:18	0.27	3/26/2005 4:18	0.78
3/25/2005 16:24	0.52	3/25/2005 22:24	0.43	3/26/2005 4:24	0.64
3/25/2005 16:30	0.38	3/25/2005 22:30	0.60	3/26/2005 4:30	0.50
3/25/2005 16:36	0.24	3/25/2005 22:36	0.75	3/26/2005 4:36	0.34
3/25/2005 16:42	0.11	3/25/2005 22:42	0.90	3/26/2005 4:42	0.21
3/25/2005 16:48	-0.03	3/25/2005 22:48	1.04	3/26/2005 4:48	0.07
3/25/2005 16:54	-0.16	3/25/2005 22:54	1.19	3/26/2005 4:54	-0.07
3/25/2005 17:00	-0.29	3/25/2005 23:00	1.33	3/26/2005 5:00	-0.21
3/25/2005 17:06	-0.40	3/25/2005 23:06	1.44	3/26/2005 5:06	-0.37
3/25/2005 17:12	-0.53	3/25/2005 23:12	1.58	3/26/2005 5:12	-0.50
3/25/2005 17:18	-0.67	3/25/2005 23:18	1.68	3/26/2005 5:18	-0.64
3/25/2005 17:24	-0.80	3/25/2005 23:24	1.80	3/26/2005 5:24	-0.76
3/25/2005 17:30	-0.89	3/25/2005 23:30	1.91	3/26/2005 5:30	-0.89

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/26/2005 5:36	-1.01	3/26/2005 11:36	1.56	3/26/2005 17:36	-0.37
3/26/2005 5:42	-1.12	3/26/2005 11:42	1.67	3/26/2005 17:42	-0.50
3/26/2005 5:48	-1.23	3/26/2005 11:48	1.78	3/26/2005 17:48	-0.64
3/26/2005 5:54	-1.35	3/26/2005 11:54	1.90	3/26/2005 17:54	-0.77
3/26/2005 6:00	-1.45	3/26/2005 12:00	2.01	3/26/2005 18:00	-0.89
3/26/2005 6:06	-1.53	3/26/2005 12:06	2.10	3/26/2005 18:06	-1.02
3/26/2005 6:12	-1.65	3/26/2005 12:12	2.16	3/26/2005 18:12	-1.14
3/26/2005 6:18	-1.72	3/26/2005 12:18	2.23	3/26/2005 18:18	-1.27
3/26/2005 6:24	-1.83	3/26/2005 12:24	2.32	3/26/2005 18:24	-1.39
3/26/2005 6:30	-1.90	3/26/2005 12:30	2.39	3/26/2005 18:30	-1.50
3/26/2005 6:36	-2.00	3/26/2005 12:36	2.43	3/26/2005 18:36	-1.61
3/26/2005 6:42	-2.09	3/26/2005 12:42	2.50	3/26/2005 18:42	-1.68
3/26/2005 6:48	-2.18	3/26/2005 12:48	2.54	3/26/2005 18:48	-1.79
3/26/2005 6:54	-2.27	3/26/2005 12:54	2.61	3/26/2005 18:54	-1.86
3/26/2005 7:00	-2.34	3/26/2005 13:00	2.63	3/26/2005 19:00	-1.95
3/26/2005 7:06	-2.41	3/26/2005 13:06	2.68	3/26/2005 19:06	-2.04
3/26/2005 7:12	-2.48	3/26/2005 13:12	2.72	3/26/2005 19:12	-2.13
3/26/2005 7:18	-2.57	3/26/2005 13:18	2.74	3/26/2005 19:18	-2.22
3/26/2005 7:24	-2.64	3/26/2005 13:24	2.76	3/26/2005 19:24	-2.29
3/26/2005 7:30	-2.71	3/26/2005 13:30	2.81	3/26/2005 19:30	-2.36
3/26/2005 7:36	-2.76	3/26/2005 13:36	2.83	3/26/2005 19:36	-2.42
3/26/2005 7:42	-2.81	3/26/2005 13:42	2.85	3/26/2005 19:42	-2.51
3/26/2005 7:48	-2.85	3/26/2005 13:48	2.87	3/26/2005 19:48	-2.58
3/26/2005 7:54	-2.87	3/26/2005 13:54	2.87	3/26/2005 19:54	-2.63
3/26/2005 8:00	-2.90	3/26/2005 14:00	2.90	3/26/2005 20:00	-2.69
3/26/2005 8:06	-2.94	3/26/2005 14:06	2.89	3/26/2005 20:06	-2.76
3/26/2005 8:12	-2.94	3/26/2005 14:12	2.89	3/26/2005 20:12	-2.81
3/26/2005 8:18	-2.92	3/26/2005 14:18	2.89	3/26/2005 20:18	-2.83
3/26/2005 8:24	-2.90	3/26/2005 14:24	2.89	3/26/2005 20:24	-2.83
3/26/2005 8:30	-2.88	3/26/2005 14:30	2.89	3/26/2005 20:30	-2.86
3/26/2005 8:36	-2.84	3/26/2005 14:36	2.88	3/26/2005 20:36	-2.83
3/26/2005 8:42	-2.79	3/26/2005 14:42	2.81	3/26/2005 20:42	-2.79
3/26/2005 8:48	-2.72	3/26/2005 14:48	2.79	3/26/2005 20:48	-2.74
3/26/2005 8:54	-2.63	3/26/2005 14:54	2.76	3/26/2005 20:54	-2.68
3/26/2005 9:00	-2.55	3/26/2005 15:00	2.72	3/26/2005 21:00	-2.61
3/26/2005 9:06	-2.43	3/26/2005 15:06	2.65	3/26/2005 21:06	-2.54
3/26/2005 9:12	-2.32	3/26/2005 15:12	2.58	3/26/2005 21:12	-2.41
3/26/2005 9:18	-2.21	3/26/2005 15:18	2.53	3/26/2005 21:18	-2.27
3/26/2005 9:24	-2.07	3/26/2005 15:24	2.44	3/26/2005 21:24	-2.13
3/26/2005 9:30	-1.91	3/26/2005 15:30	2.35	3/26/2005 21:30	-1.98
3/26/2005 9:36	-1.73	3/26/2005 15:36	2.24	3/26/2005 21:36	-1.82
3/26/2005 9:42	-1.57	3/26/2005 15:42	2.12	3/26/2005 21:42	-1.63
3/26/2005 9:48	-1.39	3/26/2005 15:48	2.03	3/26/2005 21:48	-1.45
3/26/2005 9:54	-1.21	3/26/2005 15:54	1.89	3/26/2005 21:54	-1.27
3/26/2005 10:00	-1.03	3/26/2005 16:00	1.80	3/26/2005 22:00	-1.09
3/26/2005 10:06	-0.87	3/26/2005 16:06	1.67	3/26/2005 22:06	-0.89
3/26/2005 10:12	-0.69	3/26/2005 16:12	1.57	3/26/2005 22:12	-0.73
3/26/2005 10:18	-0.49	3/26/2005 16:18	1.44	3/26/2005 22:18	-0.54
3/26/2005 10:24	-0.34	3/26/2005 16:24	1.30	3/26/2005 22:24	-0.36
3/26/2005 10:30	-0.16	3/26/2005 16:30	1.18	3/26/2005 22:30	-0.20
3/26/2005 10:36	0.02	3/26/2005 16:36	1.07	3/26/2005 22:36	-0.04
3/26/2005 10:42	0.18	3/26/2005 16:42	0.93	3/26/2005 22:42	0.14
3/26/2005 10:48	0.36	3/26/2005 16:48	0.79	3/26/2005 22:48	0.30
3/26/2005 10:54	0.54	3/26/2005 16:54	0.66	3/26/2005 22:54	0.46
3/26/2005 11:00	0.69	3/26/2005 17:00	0.52	3/26/2005 23:00	0.64
3/26/2005 11:06	0.85	3/26/2005 17:06	0.38	3/26/2005 23:06	0.80
3/26/2005 11:12	1.01	3/26/2005 17:12	0.22	3/26/2005 23:12	0.98
3/26/2005 11:18	1.14	3/26/2005 17:18	0.09	3/26/2005 23:18	1.14
3/26/2005 11:24	1.30	3/26/2005 17:24	-0.07	3/26/2005 23:24	1.28
3/26/2005 11:30	1.43	3/26/2005 17:30	-0.23	3/26/2005 23:30	1.44

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/26/2005 23:36	1.56	3/27/2005 5:36	0.24	3/27/2005 11:36	0.68
3/26/2005 23:42	1.69	3/27/2005 5:42	0.10	3/27/2005 11:42	0.86
3/26/2005 23:48	1.83	3/27/2005 5:48	-0.06	3/27/2005 11:48	1.02
3/26/2005 23:54	1.92	3/27/2005 5:54	-0.22	3/27/2005 11:54	1.16
3/27/2005 0:00	2.06	3/27/2005 6:00	-0.35	3/27/2005 12:00	1.27
3/27/2005 0:06	2.13	3/27/2005 6:06	-0.49	3/27/2005 12:06	1.41
3/27/2005 0:12	2.24	3/27/2005 6:12	-0.60	3/27/2005 12:12	1.52
3/27/2005 0:18	2.33	3/27/2005 6:18	-0.73	3/27/2005 12:18	1.63
3/27/2005 0:24	2.40	3/27/2005 6:24	-0.87	3/27/2005 12:24	1.73
3/27/2005 0:30	2.46	3/27/2005 6:30	-1.02	3/27/2005 12:30	1.84
3/27/2005 0:36	2.55	3/27/2005 6:36	-1.13	3/27/2005 12:36	1.95
3/27/2005 0:42	2.62	3/27/2005 6:42	-1.25	3/27/2005 12:42	2.04
3/27/2005 0:48	2.69	3/27/2005 6:48	-1.36	3/27/2005 12:48	2.14
3/27/2005 0:54	2.73	3/27/2005 6:54	-1.47	3/27/2005 12:54	2.23
3/27/2005 1:00	2.80	3/27/2005 7:00	-1.56	3/27/2005 13:00	2.30
3/27/2005 1:06	2.84	3/27/2005 7:06	-1.65	3/27/2005 13:06	2.37
3/27/2005 1:12	2.89	3/27/2005 7:12	-1.74	3/27/2005 13:12	2.44
3/27/2005 1:18	2.93	3/27/2005 7:18	-1.84	3/27/2005 13:18	2.48
3/27/2005 1:24	2.98	3/27/2005 7:24	-1.95	3/27/2005 13:24	2.53
3/27/2005 1:30	3.00	3/27/2005 7:30	-2.02	3/27/2005 13:30	2.58
3/27/2005 1:36	3.05	3/27/2005 7:36	-2.12	3/27/2005 13:36	2.63
3/27/2005 1:42	3.09	3/27/2005 7:42	-2.21	3/27/2005 13:42	2.65
3/27/2005 1:48	3.12	3/27/2005 7:48	-2.28	3/27/2005 13:48	2.72
3/27/2005 1:54	3.14	3/27/2005 7:54	-2.35	3/27/2005 13:54	2.74
3/27/2005 2:00	3.16	3/27/2005 8:00	-2.40	3/27/2005 14:00	2.76
3/27/2005 2:06	3.16	3/27/2005 8:06	-2.47	3/27/2005 14:06	2.78
3/27/2005 2:12	3.19	3/27/2005 8:12	-2.54	3/27/2005 14:12	2.82
3/27/2005 2:18	3.19	3/27/2005 8:18	-2.61	3/27/2005 14:18	2.87
3/27/2005 2:24	3.19	3/27/2005 8:24	-2.68	3/27/2005 14:24	2.87
3/27/2005 2:30	3.19	3/27/2005 8:30	-2.75	3/27/2005 14:30	2.87
3/27/2005 2:36	3.19	3/27/2005 8:36	-2.78	3/27/2005 14:36	2.91
3/27/2005 2:42	3.16	3/27/2005 8:42	-2.83	3/27/2005 14:42	2.93
3/27/2005 2:48	3.16	3/27/2005 8:48	-2.85	3/27/2005 14:48	2.93
3/27/2005 2:54	3.16	3/27/2005 8:54	-2.85	3/27/2005 14:54	2.93
3/27/2005 3:00	3.12	3/27/2005 9:00	-2.83	3/27/2005 15:00	2.93
3/27/2005 3:06	3.09	3/27/2005 9:06	-2.81	3/27/2005 15:06	2.93
3/27/2005 3:12	3.05	3/27/2005 9:12	-2.79	3/27/2005 15:12	2.93
3/27/2005 3:18	3.00	3/27/2005 9:18	-2.74	3/27/2005 15:18	2.91
3/27/2005 3:24	2.93	3/27/2005 9:24	-2.72	3/27/2005 15:24	2.85
3/27/2005 3:30	2.87	3/27/2005 9:30	-2.65	3/27/2005 15:30	2.83
3/27/2005 3:36	2.82	3/27/2005 9:36	-2.55	3/27/2005 15:36	2.76
3/27/2005 3:42	2.71	3/27/2005 9:42	-2.46	3/27/2005 15:42	2.69
3/27/2005 3:48	2.62	3/27/2005 9:48	-2.32	3/27/2005 15:48	2.62
3/27/2005 3:54	2.50	3/27/2005 9:54	-2.19	3/27/2005 15:54	2.55
3/27/2005 4:00	2.41	3/27/2005 10:00	-2.03	3/27/2005 16:00	2.43
3/27/2005 4:06	2.27	3/27/2005 10:06	-1.87	3/27/2005 16:06	2.31
3/27/2005 4:12	2.14	3/27/2005 10:12	-1.71	3/27/2005 16:12	2.22
3/27/2005 4:18	2.02	3/27/2005 10:18	-1.52	3/27/2005 16:18	2.09
3/27/2005 4:24	1.89	3/27/2005 10:24	-1.34	3/27/2005 16:24	1.97
3/27/2005 4:30	1.78	3/27/2005 10:30	-1.20	3/27/2005 16:30	1.84
3/27/2005 4:36	1.66	3/27/2005 10:36	-1.02	3/27/2005 16:36	1.71
3/27/2005 4:42	1.53	3/27/2005 10:42	-0.82	3/27/2005 16:42	1.58
3/27/2005 4:48	1.37	3/27/2005 10:48	-0.63	3/27/2005 16:48	1.42
3/27/2005 4:54	1.28	3/27/2005 10:54	-0.45	3/27/2005 16:54	1.29
3/27/2005 5:00	1.12	3/27/2005 11:00	-0.27	3/27/2005 17:00	1.16
3/27/2005 5:06	0.98	3/27/2005 11:06	-0.09	3/27/2005 17:06	1.02
3/27/2005 5:12	0.85	3/27/2005 11:12	0.07	3/27/2005 17:12	0.88
3/27/2005 5:18	0.69	3/27/2005 11:18	0.23	3/27/2005 17:18	0.74
3/27/2005 5:24	0.53	3/27/2005 11:24	0.36	3/27/2005 17:24	0.61
3/27/2005 5:30	0.39	3/27/2005 11:30	0.52	3/27/2005 17:30	0.45

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/27/2005 17:36	0.29	3/27/2005 23:36	0.59	3/28/2005 5:36	1.40
3/27/2005 17:42	0.15	3/27/2005 23:42	0.77	3/28/2005 5:42	1.26
3/27/2005 17:48	-0.01	3/27/2005 23:48	0.94	3/28/2005 5:48	1.13
3/27/2005 17:54	-0.14	3/27/2005 23:54	1.08	3/28/2005 5:54	0.97
3/27/2005 18:00	-0.30	3/28/2005 0:00	1.21	3/28/2005 6:00	0.81
3/27/2005 18:06	-0.43	3/28/2005 0:06	1.36	3/28/2005 6:06	0.68
3/27/2005 18:12	-0.57	3/28/2005 0:12	1.50	3/28/2005 6:12	0.52
3/27/2005 18:18	-0.68	3/28/2005 0:18	1.62	3/28/2005 6:18	0.36
3/27/2005 18:24	-0.83	3/28/2005 0:24	1.75	3/28/2005 6:24	0.21
3/27/2005 18:30	-0.96	3/28/2005 0:30	1.89	3/28/2005 6:30	0.08
3/27/2005 18:36	-1.10	3/28/2005 0:36	2.00	3/28/2005 6:36	-0.08
3/27/2005 18:42	-1.24	3/28/2005 0:42	2.10	3/28/2005 6:42	-0.19
3/27/2005 18:48	-1.35	3/28/2005 0:48	2.20	3/28/2005 6:48	-0.32
3/27/2005 18:54	-1.48	3/28/2005 0:54	2.28	3/28/2005 6:54	-0.44
3/27/2005 19:00	-1.58	3/28/2005 1:00	2.38	3/28/2005 7:00	-0.58
3/27/2005 19:06	-1.69	3/28/2005 1:06	2.46	3/28/2005 7:06	-0.72
3/27/2005 19:12	-1.78	3/28/2005 1:12	2.56	3/28/2005 7:12	-0.85
3/27/2005 19:18	-1.85	3/28/2005 1:18	2.63	3/28/2005 7:18	-0.95
3/27/2005 19:24	-1.94	3/28/2005 1:24	2.68	3/28/2005 7:24	-1.06
3/27/2005 19:30	-2.01	3/28/2005 1:30	2.77	3/28/2005 7:30	-1.17
3/27/2005 19:36	-2.10	3/28/2005 1:36	2.84	3/28/2005 7:36	-1.26
3/27/2005 19:42	-2.19	3/28/2005 1:42	2.91	3/28/2005 7:42	-1.37
3/27/2005 19:48	-2.23	3/28/2005 1:48	2.96	3/28/2005 7:48	-1.45
3/27/2005 19:54	-2.30	3/28/2005 1:54	3.01	3/28/2005 7:54	-1.53
3/27/2005 20:00	-2.39	3/28/2005 2:00	3.07	3/28/2005 8:00	-1.61
3/27/2005 20:06	-2.48	3/28/2005 2:06	3.12	3/28/2005 8:06	-1.73
3/27/2005 20:12	-2.53	3/28/2005 2:12	3.17	3/28/2005 8:12	-1.80
3/27/2005 20:18	-2.55	3/28/2005 2:18	3.21	3/28/2005 8:18	-1.90
3/27/2005 20:24	-2.62	3/28/2005 2:24	3.23	3/28/2005 8:24	-1.99
3/27/2005 20:30	-2.68	3/28/2005 2:30	3.28	3/28/2005 8:30	-2.08
3/27/2005 20:36	-2.72	3/28/2005 2:36	3.30	3/28/2005 8:36	-2.17
3/27/2005 20:42	-2.76	3/28/2005 2:42	3.33	3/28/2005 8:42	-2.23
3/27/2005 20:48	-2.80	3/28/2005 2:48	3.36	3/28/2005 8:48	-2.29
3/27/2005 20:54	-2.80	3/28/2005 2:54	3.39	3/28/2005 8:54	-2.36
3/27/2005 21:00	-2.81	3/28/2005 3:00	3.39	3/28/2005 9:00	-2.42
3/27/2005 21:06	-2.79	3/28/2005 3:06	3.39	3/28/2005 9:06	-2.48
3/27/2005 21:12	-2.80	3/28/2005 3:12	3.38	3/28/2005 9:12	-2.53
3/27/2005 21:18	-2.75	3/28/2005 3:18	3.37	3/28/2005 9:18	-2.57
3/27/2005 21:24	-2.70	3/28/2005 3:24	3.33	3/28/2005 9:24	-2.59
3/27/2005 21:30	-2.65	3/28/2005 3:30	3.31	3/28/2005 9:30	-2.64
3/27/2005 21:36	-2.56	3/28/2005 3:36	3.28	3/28/2005 9:36	-2.61
3/27/2005 21:42	-2.47	3/28/2005 3:42	3.24	3/28/2005 9:42	-2.58
3/27/2005 21:48	-2.36	3/28/2005 3:48	3.20	3/28/2005 9:48	-2.56
3/27/2005 21:54	-2.24	3/28/2005 3:54	3.15	3/28/2005 9:54	-2.49
3/27/2005 22:00	-2.13	3/28/2005 4:00	3.07	3/28/2005 10:00	-2.42
3/27/2005 22:06	-1.97	3/28/2005 4:06	3.00	3/28/2005 10:06	-2.30
3/27/2005 22:12	-1.77	3/28/2005 4:12	2.94	3/28/2005 10:12	-2.18
3/27/2005 22:18	-1.58	3/28/2005 4:18	2.84	3/28/2005 10:18	-2.06
3/27/2005 22:24	-1.42	3/28/2005 4:24	2.76	3/28/2005 10:24	-1.91
3/27/2005 22:30	-1.22	3/28/2005 4:30	2.65	3/28/2005 10:30	-1.75
3/27/2005 22:36	-1.06	3/28/2005 4:36	2.56	3/28/2005 10:36	-1.58
3/27/2005 22:42	-0.87	3/28/2005 4:42	2.42	3/28/2005 10:42	-1.40
3/27/2005 22:48	-0.68	3/28/2005 4:48	2.33	3/28/2005 10:48	-1.20
3/27/2005 22:54	-0.52	3/28/2005 4:54	2.23	3/28/2005 10:54	-1.02
3/27/2005 23:00	-0.36	3/28/2005 5:00	2.12	3/28/2005 11:00	-0.82
3/27/2005 23:06	-0.18	3/28/2005 5:06	2.00	3/28/2005 11:06	-0.62
3/27/2005 23:12	-0.02	3/28/2005 5:12	1.89	3/28/2005 11:12	-0.43
3/27/2005 23:18	0.14	3/28/2005 5:18	1.77	3/28/2005 11:18	-0.27
3/27/2005 23:24	0.30	3/28/2005 5:24	1.67	3/28/2005 11:24	-0.11
3/27/2005 23:30	0.46	3/28/2005 5:30	1.56	3/28/2005 11:30	0.10

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/28/2005 11:36	0.26	3/28/2005 17:36	1.50	3/28/2005 23:36	0.22
3/28/2005 11:42	0.42	3/28/2005 17:42	1.39	3/28/2005 23:42	0.42
3/28/2005 11:48	0.56	3/28/2005 17:48	1.28	3/28/2005 23:48	0.61
3/28/2005 11:54	0.75	3/28/2005 17:54	1.16	3/28/2005 23:54	0.80
3/28/2005 12:00	0.91	3/28/2005 18:00	1.04	3/29/2005 0:00	0.98
3/28/2005 12:06	1.07	3/28/2005 18:06	0.88	3/29/2005 0:06	1.14
3/28/2005 12:12	1.24	3/28/2005 18:12	0.78	3/29/2005 0:12	1.29
3/28/2005 12:18	1.35	3/28/2005 18:18	0.64	3/29/2005 0:18	1.45
3/28/2005 12:24	1.49	3/28/2005 18:24	0.51	3/29/2005 0:24	1.65
3/28/2005 12:30	1.63	3/28/2005 18:30	0.38	3/29/2005 0:30	1.82
3/28/2005 12:36	1.75	3/28/2005 18:36	0.24	3/29/2005 0:36	1.99
3/28/2005 12:42	1.87	3/28/2005 18:42	0.14	3/29/2005 0:42	2.14
3/28/2005 12:48	2.02	3/28/2005 18:48	0.02	3/29/2005 0:48	2.28
3/28/2005 12:54	2.11	3/28/2005 18:54	-0.10	3/29/2005 0:54	2.43
3/28/2005 13:00	2.20	3/28/2005 19:00	-0.20	3/29/2005 1:00	2.54
3/28/2005 13:06	2.27	3/28/2005 19:06	-0.34	3/29/2005 1:06	2.64
3/28/2005 13:12	2.35	3/28/2005 19:12	-0.45	3/29/2005 1:12	2.78
3/28/2005 13:18	2.44	3/28/2005 19:18	-0.53	3/29/2005 1:18	2.85
3/28/2005 13:24	2.52	3/28/2005 19:24	-0.61	3/29/2005 1:24	2.93
3/28/2005 13:30	2.59	3/28/2005 19:30	-0.69	3/29/2005 1:30	3.04
3/28/2005 13:36	2.64	3/28/2005 19:36	-0.78	3/29/2005 1:36	3.09
3/28/2005 13:42	2.66	3/28/2005 19:42	-0.86	3/29/2005 1:42	3.15
3/28/2005 13:48	2.73	3/28/2005 19:48	-0.95	3/29/2005 1:48	3.27
3/28/2005 13:54	2.78	3/28/2005 19:54	-1.03	3/29/2005 1:54	3.48
3/28/2005 14:00	2.83	3/28/2005 20:00	-1.10	3/29/2005 2:00	3.54
3/28/2005 14:06	2.83	3/28/2005 20:06	-1.20	3/29/2005 2:06	3.59
3/28/2005 14:12	2.92	3/28/2005 20:12	-1.26	3/29/2005 2:12	3.62
3/28/2005 14:18	2.95	3/28/2005 20:18	-1.36	3/29/2005 2:18	3.64
3/28/2005 14:24	2.95	3/28/2005 20:24	-1.42	3/29/2005 2:24	3.73
3/28/2005 14:30	2.97	3/28/2005 20:30	-1.48	3/29/2005 2:30	3.77
3/28/2005 14:36	2.97	3/28/2005 20:36	-1.56	3/29/2005 2:36	3.81
3/28/2005 14:42	3.02	3/28/2005 20:42	-1.64	3/29/2005 2:42	3.84
3/28/2005 14:48	3.04	3/28/2005 20:48	-1.70	3/29/2005 2:48	3.87
3/28/2005 14:54	3.05	3/28/2005 20:54	-1.74	3/29/2005 2:54	3.92
3/28/2005 15:00	3.08	3/28/2005 21:00	-1.81	3/29/2005 3:00	3.92
3/28/2005 15:06	3.06	3/28/2005 21:06	-1.84	3/29/2005 3:06	3.93
3/28/2005 15:12	3.06	3/28/2005 21:12	-1.91	3/29/2005 3:12	3.95
3/28/2005 15:18	3.05	3/28/2005 21:18	-1.92	3/29/2005 3:18	3.98
3/28/2005 15:24	3.02	3/28/2005 21:24	-1.95	3/29/2005 3:24	4.01
3/28/2005 15:30	3.03	3/28/2005 21:30	-1.96	3/29/2005 3:30	3.98
3/28/2005 15:36	3.03	3/28/2005 21:36	-2.01	3/29/2005 3:36	3.95
3/28/2005 15:42	3.00	3/28/2005 21:42	-1.98	3/29/2005 3:42	3.93
3/28/2005 15:48	2.98	3/28/2005 21:48	-1.97	3/29/2005 3:48	3.97
3/28/2005 15:54	2.94	3/28/2005 21:54	-1.96	3/29/2005 3:54	3.96
3/28/2005 16:00	2.92	3/28/2005 22:00	-1.93	3/29/2005 4:00	3.99
3/28/2005 16:06	2.85	3/28/2005 22:06	-1.95	3/29/2005 4:06	3.98
3/28/2005 16:12	2.81	3/28/2005 22:12	-1.90	3/29/2005 4:12	3.96
3/28/2005 16:18	2.77	3/28/2005 22:18	-1.81	3/29/2005 4:18	3.95
3/28/2005 16:24	2.69	3/28/2005 22:24	-1.70	3/29/2005 4:24	3.94
3/28/2005 16:30	2.60	3/28/2005 22:30	-1.59	3/29/2005 4:30	3.89
3/28/2005 16:36	2.54	3/28/2005 22:36	-1.47	3/29/2005 4:36	3.85
3/28/2005 16:42	2.45	3/28/2005 22:42	-1.33	3/29/2005 4:42	3.83
3/28/2005 16:48	2.33	3/28/2005 22:48	-1.20	3/29/2005 4:48	3.75
3/28/2005 16:54	2.23	3/28/2005 22:54	-1.05	3/29/2005 4:54	3.68
3/28/2005 17:00	2.14	3/28/2005 23:00	-0.89	3/29/2005 5:00	3.62
3/28/2005 17:06	2.05	3/28/2005 23:06	-0.70	3/29/2005 5:06	3.53
3/28/2005 17:12	1.94	3/28/2005 23:12	-0.56	3/29/2005 5:12	3.46
3/28/2005 17:18	1.83	3/28/2005 23:18	-0.38	3/29/2005 5:18	3.34
3/28/2005 17:24	1.72	3/28/2005 23:24	-0.17	3/29/2005 5:24	3.25
3/28/2005 17:30	1.61	3/28/2005 23:30	0.02	3/29/2005 5:30	3.16

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/29/2005 5:36	3.06	3/29/2005 11:36	-0.94	3/29/2005 17:36	2.24
3/29/2005 5:42	2.95	3/29/2005 11:42	-0.76	3/29/2005 17:42	2.13
3/29/2005 5:48	2.85	3/29/2005 11:48	-0.58	3/29/2005 17:48	2.04
3/29/2005 5:54	2.74	3/29/2005 11:54	-0.42	3/29/2005 17:54	1.92
3/29/2005 6:00	2.63	3/29/2005 12:00	-0.24	3/29/2005 18:00	1.81
3/29/2005 6:06	2.52	3/29/2005 12:06	-0.09	3/29/2005 18:06	1.64
3/29/2005 6:12	2.41	3/29/2005 12:12	0.03	3/29/2005 18:12	1.55
3/29/2005 6:18	2.25	3/29/2005 12:18	0.21	3/29/2005 18:18	1.41
3/29/2005 6:24	2.13	3/29/2005 12:24	0.35	3/29/2005 18:24	1.30
3/29/2005 6:30	2.01	3/29/2005 12:30	0.53	3/29/2005 18:30	1.18
3/29/2005 6:36	1.87	3/29/2005 12:36	0.68	3/29/2005 18:36	1.07
3/29/2005 6:42	1.74	3/29/2005 12:42	0.84	3/29/2005 18:42	0.95
3/29/2005 6:48	1.61	3/29/2005 12:48	0.98	3/29/2005 18:48	0.86
3/29/2005 6:54	1.47	3/29/2005 12:54	1.11	3/29/2005 18:54	0.75
3/29/2005 7:00	1.31	3/29/2005 13:00	1.24	3/29/2005 19:00	0.61
3/29/2005 7:06	1.13	3/29/2005 13:06	1.37	3/29/2005 19:06	0.51
3/29/2005 7:12	1.00	3/29/2005 13:12	1.50	3/29/2005 19:12	0.37
3/29/2005 7:18	0.84	3/29/2005 13:18	1.63	3/29/2005 19:18	0.28
3/29/2005 7:24	0.68	3/29/2005 13:24	1.75	3/29/2005 19:24	0.14
3/29/2005 7:30	0.54	3/29/2005 13:30	1.86	3/29/2005 19:30	0.05
3/29/2005 7:36	0.38	3/29/2005 13:36	1.97	3/29/2005 19:36	-0.07
3/29/2005 7:42	0.27	3/29/2005 13:42	2.06	3/29/2005 19:42	-0.18
3/29/2005 7:48	0.13	3/29/2005 13:48	2.15	3/29/2005 19:48	-0.30
3/29/2005 7:54	-0.01	3/29/2005 13:54	2.24	3/29/2005 19:54	-0.42
3/29/2005 8:00	-0.15	3/29/2005 14:00	2.30	3/29/2005 20:00	-0.51
3/29/2005 8:06	-0.24	3/29/2005 14:06	2.34	3/29/2005 20:06	-0.61
3/29/2005 8:12	-0.38	3/29/2005 14:12	2.40	3/29/2005 20:12	-0.72
3/29/2005 8:18	-0.50	3/29/2005 14:18	2.45	3/29/2005 20:18	-0.81
3/29/2005 8:24	-0.61	3/29/2005 14:24	2.49	3/29/2005 20:24	-0.93
3/29/2005 8:30	-0.70	3/29/2005 14:30	2.52	3/29/2005 20:30	-1.02
3/29/2005 8:36	-0.79	3/29/2005 14:36	2.56	3/29/2005 20:36	-1.12
3/29/2005 8:42	-0.89	3/29/2005 14:42	2.63	3/29/2005 20:42	-1.23
3/29/2005 8:48	-0.98	3/29/2005 14:48	2.65	3/29/2005 20:48	-1.33
3/29/2005 8:54	-1.07	3/29/2005 14:54	2.69	3/29/2005 20:54	-1.42
3/29/2005 9:00	-1.14	3/29/2005 15:00	2.74	3/29/2005 21:00	-1.54
3/29/2005 9:06	-1.21	3/29/2005 15:06	2.76	3/29/2005 21:06	-1.66
3/29/2005 9:12	-1.31	3/29/2005 15:12	2.78	3/29/2005 21:12	-1.73
3/29/2005 9:18	-1.38	3/29/2005 15:18	2.82	3/29/2005 21:18	-1.82
3/29/2005 9:24	-1.43	3/29/2005 15:24	2.83	3/29/2005 21:24	-1.94
3/29/2005 9:30	-1.50	3/29/2005 15:30	2.83	3/29/2005 21:30	-2.01
3/29/2005 9:36	-1.58	3/29/2005 15:36	2.85	3/29/2005 21:36	-2.06
3/29/2005 9:42	-1.65	3/29/2005 15:42	2.90	3/29/2005 21:42	-2.13
3/29/2005 9:48	-1.70	3/29/2005 15:48	2.89	3/29/2005 21:48	-2.21
3/29/2005 9:54	-1.75	3/29/2005 15:54	2.92	3/29/2005 21:54	-2.26
3/29/2005 10:00	-1.80	3/29/2005 16:00	2.96	3/29/2005 22:00	-2.28
3/29/2005 10:06	-1.85	3/29/2005 16:06	2.96	3/29/2005 22:06	-2.33
3/29/2005 10:12	-1.87	3/29/2005 16:12	2.95	3/29/2005 22:12	-2.39
3/29/2005 10:18	-1.90	3/29/2005 16:18	2.95	3/29/2005 22:18	-2.41
3/29/2005 10:24	-1.93	3/29/2005 16:24	2.95	3/29/2005 22:24	-2.42
3/29/2005 10:30	-1.93	3/29/2005 16:30	2.95	3/29/2005 22:30	-2.40
3/29/2005 10:36	-1.91	3/29/2005 16:36	2.92	3/29/2005 22:36	-2.38
3/29/2005 10:42	-1.89	3/29/2005 16:42	2.90	3/29/2005 22:42	-2.34
3/29/2005 10:48	-1.83	3/29/2005 16:48	2.87	3/29/2005 22:48	-2.28
3/29/2005 10:54	-1.76	3/29/2005 16:54	2.79	3/29/2005 22:54	-2.19
3/29/2005 11:00	-1.67	3/29/2005 17:00	2.77	3/29/2005 23:00	-2.05
3/29/2005 11:06	-1.59	3/29/2005 17:06	2.70	3/29/2005 23:06	-1.97
3/29/2005 11:12	-1.50	3/29/2005 17:12	2.61	3/29/2005 23:12	-1.82
3/29/2005 11:18	-1.39	3/29/2005 17:18	2.54	3/29/2005 23:18	-1.68
3/29/2005 11:24	-1.25	3/29/2005 17:24	2.46	3/29/2005 23:24	-1.52
3/29/2005 11:30	-1.10	3/29/2005 17:30	2.36	3/29/2005 23:30	-1.39

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/29/2005 23:36	-1.25	3/30/2005 5:36	3.02	3/30/2005 11:36	-2.11
3/29/2005 23:42	-1.11	3/30/2005 5:42	2.98	3/30/2005 11:42	-1.99
3/29/2005 23:48	-0.95	3/30/2005 5:48	2.91	3/30/2005 11:48	-1.93
3/29/2005 23:54	-0.78	3/30/2005 5:54	2.82	3/30/2005 11:54	-1.84
3/30/2005 0:00	-0.60	3/30/2005 6:00	2.73	3/30/2005 12:00	-1.71
3/30/2005 0:06	-0.42	3/30/2005 6:06	2.61	3/30/2005 12:06	-1.60
3/30/2005 0:12	-0.27	3/30/2005 6:12	2.52	3/30/2005 12:12	-1.46
3/30/2005 0:18	-0.08	3/30/2005 6:18	2.38	3/30/2005 12:18	-1.37
3/30/2005 0:24	0.09	3/30/2005 6:24	2.25	3/30/2005 12:24	-1.25
3/30/2005 0:30	0.25	3/30/2005 6:30	2.14	3/30/2005 12:30	-1.09
3/30/2005 0:36	0.40	3/30/2005 6:36	2.02	3/30/2005 12:36	-0.98
3/30/2005 0:42	0.59	3/30/2005 6:42	1.92	3/30/2005 12:42	-0.84
3/30/2005 0:48	0.74	3/30/2005 6:48	1.78	3/30/2005 12:48	-0.71
3/30/2005 0:54	0.89	3/30/2005 6:54	1.64	3/30/2005 12:54	-0.58
3/30/2005 1:00	1.05	3/30/2005 7:00	1.52	3/30/2005 13:00	-0.44
3/30/2005 1:06	1.18	3/30/2005 7:06	1.40	3/30/2005 13:06	-0.30
3/30/2005 1:12	1.34	3/30/2005 7:12	1.26	3/30/2005 13:12	-0.14
3/30/2005 1:18	1.49	3/30/2005 7:18	1.14	3/30/2005 13:18	-0.03
3/30/2005 1:24	1.63	3/30/2005 7:24	1.01	3/30/2005 13:24	0.11
3/30/2005 1:30	1.79	3/30/2005 7:30	0.87	3/30/2005 13:30	0.24
3/30/2005 1:36	1.92	3/30/2005 7:36	0.74	3/30/2005 13:36	0.33
3/30/2005 1:42	2.03	3/30/2005 7:42	0.60	3/30/2005 13:42	0.46
3/30/2005 1:48	2.15	3/30/2005 7:48	0.46	3/30/2005 13:48	0.59
3/30/2005 1:54	2.23	3/30/2005 7:54	0.33	3/30/2005 13:54	0.71
3/30/2005 2:00	2.34	3/30/2005 8:00	0.16	3/30/2005 14:00	0.84
3/30/2005 2:06	2.45	3/30/2005 8:06	0.02	3/30/2005 14:06	0.96
3/30/2005 2:12	2.51	3/30/2005 8:12	-0.13	3/30/2005 14:12	1.07
3/30/2005 2:18	2.58	3/30/2005 8:18	-0.27	3/30/2005 14:18	1.16
3/30/2005 2:24	2.67	3/30/2005 8:24	-0.39	3/30/2005 14:24	1.27
3/30/2005 2:30	2.74	3/30/2005 8:30	-0.51	3/30/2005 14:30	1.36
3/30/2005 2:36	2.76	3/30/2005 8:36	-0.63	3/30/2005 14:36	1.42
3/30/2005 2:42	2.83	3/30/2005 8:42	-0.75	3/30/2005 14:42	1.52
3/30/2005 2:48	2.87	3/30/2005 8:48	-0.86	3/30/2005 14:48	1.59
3/30/2005 2:54	2.89	3/30/2005 8:54	-0.98	3/30/2005 14:54	1.66
3/30/2005 3:00	2.96	3/30/2005 9:00	-1.08	3/30/2005 15:00	1.75
3/30/2005 3:06	2.96	3/30/2005 9:06	-1.20	3/30/2005 15:06	1.82
3/30/2005 3:12	2.98	3/30/2005 9:12	-1.29	3/30/2005 15:12	1.89
3/30/2005 3:18	3.02	3/30/2005 9:18	-1.40	3/30/2005 15:18	1.98
3/30/2005 3:24	3.06	3/30/2005 9:24	-1.52	3/30/2005 15:24	2.05
3/30/2005 3:30	3.08	3/30/2005 9:30	-1.59	3/30/2005 15:30	2.10
3/30/2005 3:36	3.07	3/30/2005 9:36	-1.69	3/30/2005 15:36	2.15
3/30/2005 3:42	3.10	3/30/2005 9:42	-1.76	3/30/2005 15:42	2.21
3/30/2005 3:48	3.14	3/30/2005 9:48	-1.83	3/30/2005 15:48	2.26
3/30/2005 3:54	3.16	3/30/2005 9:54	-1.90	3/30/2005 15:54	2.30
3/30/2005 4:00	3.16	3/30/2005 10:00	-1.97	3/30/2005 16:00	2.35
3/30/2005 4:06	3.18	3/30/2005 10:06	-2.04	3/30/2005 16:06	2.44
3/30/2005 4:12	3.20	3/30/2005 10:12	-2.10	3/30/2005 16:12	2.49
3/30/2005 4:18	3.22	3/30/2005 10:18	-2.17	3/30/2005 16:18	2.52
3/30/2005 4:24	3.24	3/30/2005 10:24	-2.22	3/30/2005 16:24	2.56
3/30/2005 4:30	3.27	3/30/2005 10:30	-2.27	3/30/2005 16:30	2.61
3/30/2005 4:36	3.27	3/30/2005 10:36	-2.30	3/30/2005 16:36	2.63
3/30/2005 4:42	3.27	3/30/2005 10:42	-2.30	3/30/2005 16:42	2.59
3/30/2005 4:48	3.26	3/30/2005 10:48	-2.33	3/30/2005 16:48	2.64
3/30/2005 4:54	3.28	3/30/2005 10:54	-2.33	3/30/2005 16:54	2.64
3/30/2005 5:00	3.26	3/30/2005 11:00	-2.34	3/30/2005 17:00	2.64
3/30/2005 5:06	3.24	3/30/2005 11:06	-2.32	3/30/2005 17:06	2.62
3/30/2005 5:12	3.21	3/30/2005 11:12	-2.30	3/30/2005 17:12	2.60
3/30/2005 5:18	3.19	3/30/2005 11:18	-2.27	3/30/2005 17:18	2.58
3/30/2005 5:24	3.14	3/30/2005 11:24	-2.23	3/30/2005 17:24	2.56
3/30/2005 5:30	3.09	3/30/2005 11:30	-2.17	3/30/2005 17:30	2.54

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/30/2005 17:36	2.47	3/30/2005 23:36	-1.81	3/31/2005 5:36	3.13
3/30/2005 17:42	2.43	3/30/2005 23:42	-1.70	3/31/2005 5:42	3.13
3/30/2005 17:48	2.35	3/30/2005 23:48	-1.63	3/31/2005 5:48	3.12
3/30/2005 17:54	2.28	3/30/2005 23:54	-1.52	3/31/2005 5:54	3.10
3/30/2005 18:00	2.21	3/31/2005 0:00	-1.41	3/31/2005 6:00	3.06
3/30/2005 18:06	2.10	3/31/2005 0:06	-1.30	3/31/2005 6:06	3.01
3/30/2005 18:12	2.01	3/31/2005 0:12	-1.19	3/31/2005 6:12	2.99
3/30/2005 18:18	1.92	3/31/2005 0:18	-1.05	3/31/2005 6:18	2.92
3/30/2005 18:24	1.81	3/31/2005 0:24	-0.92	3/31/2005 6:24	2.87
3/30/2005 18:30	1.70	3/31/2005 0:30	-0.78	3/31/2005 6:30	2.83
3/30/2005 18:36	1.58	3/31/2005 0:36	-0.65	3/31/2005 6:36	2.76
3/30/2005 18:42	1.49	3/31/2005 0:42	-0.49	3/31/2005 6:42	2.66
3/30/2005 18:48	1.37	3/31/2005 0:48	-0.31	3/31/2005 6:48	2.55
3/30/2005 18:54	1.26	3/31/2005 0:54	-0.16	3/31/2005 6:54	2.50
3/30/2005 19:00	1.17	3/31/2005 1:00	-0.01	3/31/2005 7:00	2.38
3/30/2005 19:06	1.03	3/31/2005 1:06	0.12	3/31/2005 7:06	2.29
3/30/2005 19:12	0.91	3/31/2005 1:12	0.25	3/31/2005 7:12	2.17
3/30/2005 19:18	0.80	3/31/2005 1:18	0.41	3/31/2005 7:18	2.05
3/30/2005 19:24	0.68	3/31/2005 1:24	0.54	3/31/2005 7:24	1.92
3/30/2005 19:30	0.55	3/31/2005 1:30	0.65	3/31/2005 7:30	1.85
3/30/2005 19:36	0.40	3/31/2005 1:36	0.80	3/31/2005 7:36	1.69
3/30/2005 19:42	0.27	3/31/2005 1:42	0.93	3/31/2005 7:42	1.60
3/30/2005 19:48	0.16	3/31/2005 1:48	1.07	3/31/2005 7:48	1.48
3/30/2005 19:54	0.02	3/31/2005 1:54	1.24	3/31/2005 7:54	1.37
3/30/2005 20:00	-0.12	3/31/2005 2:00	1.35	3/31/2005 8:00	1.25
3/30/2005 20:06	-0.23	3/31/2005 2:06	1.51	3/31/2005 8:06	1.14
3/30/2005 20:12	-0.36	3/31/2005 2:12	1.62	3/31/2005 8:12	1.01
3/30/2005 20:18	-0.48	3/31/2005 2:18	1.75	3/31/2005 8:18	0.87
3/30/2005 20:24	-0.62	3/31/2005 2:24	1.89	3/31/2005 8:24	0.73
3/30/2005 20:30	-0.73	3/31/2005 2:30	1.99	3/31/2005 8:30	0.60
3/30/2005 20:36	-0.87	3/31/2005 2:36	2.12	3/31/2005 8:36	0.48
3/30/2005 20:42	-0.98	3/31/2005 2:42	2.22	3/31/2005 8:42	0.33
3/30/2005 20:48	-1.09	3/31/2005 2:48	2.32	3/31/2005 8:48	0.19
3/30/2005 20:54	-1.16	3/31/2005 2:54	2.43	3/31/2005 8:54	0.03
3/30/2005 21:00	-1.27	3/31/2005 3:00	2.50	3/31/2005 9:00	-0.10
3/30/2005 21:06	-1.36	3/31/2005 3:06	2.56	3/31/2005 9:06	-0.23
3/30/2005 21:12	-1.46	3/31/2005 3:12	2.65	3/31/2005 9:12	-0.36
3/30/2005 21:18	-1.52	3/31/2005 3:18	2.72	3/31/2005 9:18	-0.49
3/30/2005 21:24	-1.57	3/31/2005 3:24	2.76	3/31/2005 9:24	-0.61
3/30/2005 21:30	-1.64	3/31/2005 3:30	2.82	3/31/2005 9:30	-0.73
3/30/2005 21:36	-1.69	3/31/2005 3:36	2.86	3/31/2005 9:36	-0.86
3/30/2005 21:42	-1.78	3/31/2005 3:42	2.91	3/31/2005 9:42	-0.97
3/30/2005 21:48	-1.80	3/31/2005 3:48	2.94	3/31/2005 9:48	-1.06
3/30/2005 21:54	-1.85	3/31/2005 3:54	2.96	3/31/2005 9:54	-1.16
3/30/2005 22:00	-1.92	3/31/2005 4:00	2.98	3/31/2005 10:00	-1.25
3/30/2005 22:06	-1.92	3/31/2005 4:06	3.01	3/31/2005 10:06	-1.34
3/30/2005 22:12	-1.96	3/31/2005 4:12	3.03	3/31/2005 10:12	-1.43
3/30/2005 22:18	-2.01	3/31/2005 4:18	3.03	3/31/2005 10:18	-1.53
3/30/2005 22:24	-2.05	3/31/2005 4:24	3.05	3/31/2005 10:24	-1.60
3/30/2005 22:30	-2.08	3/31/2005 4:30	3.08	3/31/2005 10:30	-1.68
3/30/2005 22:36	-2.10	3/31/2005 4:36	3.09	3/31/2005 10:36	-1.76
3/30/2005 22:42	-2.15	3/31/2005 4:42	3.12	3/31/2005 10:42	-1.83
3/30/2005 22:48	-2.15	3/31/2005 4:48	3.12	3/31/2005 10:48	-1.90
3/30/2005 22:54	-2.16	3/31/2005 4:54	3.12	3/31/2005 10:54	-1.95
3/30/2005 23:00	-2.13	3/31/2005 5:00	3.13	3/31/2005 11:00	-2.02
3/30/2005 23:06	-2.09	3/31/2005 5:06	3.15	3/31/2005 11:06	-2.06
3/30/2005 23:12	-2.07	3/31/2005 5:12	3.16	3/31/2005 11:12	-2.08
3/30/2005 23:18	-2.02	3/31/2005 5:18	3.18	3/31/2005 11:18	-2.13
3/30/2005 23:24	-1.95	3/31/2005 5:24	3.15	3/31/2005 11:24	-2.17
3/30/2005 23:30	-1.90	3/31/2005 5:30	3.16	3/31/2005 11:30	-2.18

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
3/31/2005 11:36	-2.21	3/31/2005 17:36	2.50	3/31/2005 23:36	-1.68
3/31/2005 11:42	-2.25	3/31/2005 17:42	2.51	3/31/2005 23:42	-1.73
3/31/2005 11:48	-2.27	3/31/2005 17:48	2.49	3/31/2005 23:48	-1.72
3/31/2005 11:54	-2.27	3/31/2005 17:54	2.46	3/31/2005 23:54	-1.74
3/31/2005 12:00	-2.24	3/31/2005 18:00	2.45	4/1/2005 0:00	-1.73
3/31/2005 12:06	-2.24	3/31/2005 18:06	2.38	4/1/2005 0:06	-1.71
3/31/2005 12:12	-2.20	3/31/2005 18:12	2.33	4/1/2005 0:12	-1.69
3/31/2005 12:18	-2.16	3/31/2005 18:18	2.29	4/1/2005 0:18	-1.64
3/31/2005 12:24	-2.10	3/31/2005 18:24	2.22	4/1/2005 0:24	-1.58
3/31/2005 12:30	-2.03	3/31/2005 18:30	2.16	4/1/2005 0:30	-1.54
3/31/2005 12:36	-1.97	3/31/2005 18:36	2.10	4/1/2005 0:36	-1.49
3/31/2005 12:42	-1.88	3/31/2005 18:42	2.01	4/1/2005 0:42	-1.42
3/31/2005 12:48	-1.81	3/31/2005 18:48	1.92	4/1/2005 0:48	-1.32
3/31/2005 12:54	-1.71	3/31/2005 18:54	1.84	4/1/2005 0:54	-1.23
3/31/2005 13:00	-1.62	3/31/2005 19:00	1.75	4/1/2005 1:00	-1.11
3/31/2005 13:06	-1.48	3/31/2005 19:06	1.64	4/1/2005 1:06	-1.03
3/31/2005 13:12	-1.33	3/31/2005 19:12	1.55	4/1/2005 1:12	-0.94
3/31/2005 13:18	-1.28	3/31/2005 19:18	1.44	4/1/2005 1:18	-0.80
3/31/2005 13:24	-1.13	3/31/2005 19:24	1.32	4/1/2005 1:24	-0.70
3/31/2005 13:30	-1.08	3/31/2005 19:30	1.23	4/1/2005 1:30	-0.58
3/31/2005 13:36	-0.93	3/31/2005 19:36	1.12	4/1/2005 1:36	-0.50
3/31/2005 13:42	-0.78	3/31/2005 19:42	1.03	4/1/2005 1:42	-0.36
3/31/2005 13:48	-0.63	3/31/2005 19:48	0.91	4/1/2005 1:48	-0.26
3/31/2005 13:54	-0.49	3/31/2005 19:54	0.81	4/1/2005 1:54	-0.12
3/31/2005 14:00	-0.38	3/31/2005 20:00	0.70	4/1/2005 2:00	0.02
3/31/2005 14:06	-0.24	3/31/2005 20:06	0.58	4/1/2005 2:06	0.15
3/31/2005 14:12	-0.10	3/31/2005 20:12	0.47	4/1/2005 2:12	0.26
3/31/2005 14:18	0.04	3/31/2005 20:18	0.36	4/1/2005 2:18	0.38
3/31/2005 14:24	0.13	3/31/2005 20:24	0.26	4/1/2005 2:24	0.50
3/31/2005 14:30	0.27	3/31/2005 20:30	0.15	4/1/2005 2:30	0.64
3/31/2005 14:36	0.36	3/31/2005 20:36	0.05	4/1/2005 2:36	0.73
3/31/2005 14:42	0.47	3/31/2005 20:42	-0.05	4/1/2005 2:42	0.87
3/31/2005 14:48	0.59	3/31/2005 20:48	-0.11	4/1/2005 2:48	1.02
3/31/2005 14:54	0.74	3/31/2005 20:54	-0.23	4/1/2005 2:54	1.15
3/31/2005 15:00	0.83	3/31/2005 21:00	-0.32	4/1/2005 3:00	1.28
3/31/2005 15:06	0.95	3/31/2005 21:06	-0.39	4/1/2005 3:06	1.40
3/31/2005 15:12	1.04	3/31/2005 21:12	-0.48	4/1/2005 3:12	1.55
3/31/2005 15:18	1.19	3/31/2005 21:18	-0.57	4/1/2005 3:18	1.64
3/31/2005 15:24	1.27	3/31/2005 21:24	-0.61	4/1/2005 3:24	1.78
3/31/2005 15:30	1.38	3/31/2005 21:30	-0.68	4/1/2005 3:30	1.89
3/31/2005 15:36	1.48	3/31/2005 21:36	-0.73	4/1/2005 3:36	2.00
3/31/2005 15:42	1.57	3/31/2005 21:42	-0.77	4/1/2005 3:42	2.08
3/31/2005 15:48	1.64	3/31/2005 21:48	-0.82	4/1/2005 3:48	2.19
3/31/2005 15:54	1.74	3/31/2005 21:54	-0.88	4/1/2005 3:54	2.26
3/31/2005 16:00	1.83	3/31/2005 22:00	-0.89	4/1/2005 4:00	2.33
3/31/2005 16:06	1.88	3/31/2005 22:06	-0.96	4/1/2005 4:06	2.40
3/31/2005 16:12	1.98	3/31/2005 22:12	-1.01	4/1/2005 4:12	2.44
3/31/2005 16:18	2.04	3/31/2005 22:18	-1.02	4/1/2005 4:18	2.52
3/31/2005 16:24	2.12	3/31/2005 22:24	-1.09	4/1/2005 4:24	2.59
3/31/2005 16:30	2.16	3/31/2005 22:30	-1.13	4/1/2005 4:30	2.62
3/31/2005 16:36	2.25	3/31/2005 22:36	-1.18	4/1/2005 4:36	2.65
3/31/2005 16:42	2.31	3/31/2005 22:42	-1.25	4/1/2005 4:42	2.71
3/31/2005 16:48	2.35	3/31/2005 22:48	-1.30	4/1/2005 4:48	2.77
3/31/2005 16:54	2.40	3/31/2005 22:54	-1.35	4/1/2005 4:54	2.80
3/31/2005 17:00	2.43	3/31/2005 23:00	-1.42	4/1/2005 5:00	2.85
3/31/2005 17:06	2.45	3/31/2005 23:06	-1.47	4/1/2005 5:06	2.91
3/31/2005 17:12	2.46	3/31/2005 23:12	-1.50	4/1/2005 5:12	2.96
3/31/2005 17:18	2.49	3/31/2005 23:18	-1.55	4/1/2005 5:18	3.01
3/31/2005 17:24	2.51	3/31/2005 23:24	-1.59	4/1/2005 5:24	3.03
3/31/2005 17:30	2.51	3/31/2005 23:30	-1.66	4/1/2005 5:30	3.08

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/1/2005 5:36	3.16	4/1/2005 11:36	-1.49	4/1/2005 17:36	1.95
4/1/2005 5:42	3.18	4/1/2005 11:42	-1.55	4/1/2005 17:42	2.00
4/1/2005 5:48	3.23	4/1/2005 11:48	-1.62	4/1/2005 17:48	2.07
4/1/2005 5:54	3.26	4/1/2005 11:54	-1.62	4/1/2005 17:54	2.14
4/1/2005 6:00	3.32	4/1/2005 12:00	-1.69	4/1/2005 18:00	2.18
4/1/2005 6:06	3.35	4/1/2005 12:06	-1.71	4/1/2005 18:06	2.23
4/1/2005 6:12	3.35	4/1/2005 12:12	-1.76	4/1/2005 18:12	2.30
4/1/2005 6:18	3.38	4/1/2005 12:18	-1.77	4/1/2005 18:18	2.33
4/1/2005 6:24	3.39	4/1/2005 12:24	-1.76	4/1/2005 18:24	2.38
4/1/2005 6:30	3.38	4/1/2005 12:30	-1.76	4/1/2005 18:30	2.43
4/1/2005 6:36	3.40	4/1/2005 12:36	-1.77	4/1/2005 18:36	2.45
4/1/2005 6:42	3.40	4/1/2005 12:42	-1.72	4/1/2005 18:42	2.48
4/1/2005 6:48	3.38	4/1/2005 12:48	-1.70	4/1/2005 18:48	2.48
4/1/2005 6:54	3.38	4/1/2005 12:54	-1.68	4/1/2005 18:54	2.51
4/1/2005 7:00	3.35	4/1/2005 13:00	-1.63	4/1/2005 19:00	2.51
4/1/2005 7:06	3.31	4/1/2005 13:06	-1.59	4/1/2005 19:06	2.48
4/1/2005 7:12	3.28	4/1/2005 13:12	-1.55	4/1/2005 19:12	2.48
4/1/2005 7:18	3.23	4/1/2005 13:18	-1.48	4/1/2005 19:18	2.46
4/1/2005 7:24	3.15	4/1/2005 13:24	-1.42	4/1/2005 19:24	2.42
4/1/2005 7:30	3.09	4/1/2005 13:30	-1.37	4/1/2005 19:30	2.38
4/1/2005 7:36	3.02	4/1/2005 13:36	-1.31	4/1/2005 19:36	2.33
4/1/2005 7:42	2.96	4/1/2005 13:42	-1.24	4/1/2005 19:42	2.26
4/1/2005 7:48	2.84	4/1/2005 13:48	-1.15	4/1/2005 19:48	2.19
4/1/2005 7:54	2.75	4/1/2005 13:54	-1.06	4/1/2005 19:54	2.13
4/1/2005 8:00	2.64	4/1/2005 14:00	-0.97	4/1/2005 20:00	2.04
4/1/2005 8:06	2.50	4/1/2005 14:06	-0.90	4/1/2005 20:06	1.97
4/1/2005 8:12	2.39	4/1/2005 14:12	-0.81	4/1/2005 20:12	1.87
4/1/2005 8:18	2.25	4/1/2005 14:18	-0.74	4/1/2005 20:18	1.79
4/1/2005 8:24	2.11	4/1/2005 14:24	-0.64	4/1/2005 20:24	1.70
4/1/2005 8:30	1.99	4/1/2005 14:30	-0.53	4/1/2005 20:30	1.59
4/1/2005 8:36	1.87	4/1/2005 14:36	-0.44	4/1/2005 20:36	1.52
4/1/2005 8:42	1.74	4/1/2005 14:42	-0.37	4/1/2005 20:42	1.43
4/1/2005 8:48	1.60	4/1/2005 14:48	-0.26	4/1/2005 20:48	1.33
4/1/2005 8:54	1.48	4/1/2005 14:54	-0.14	4/1/2005 20:54	1.24
4/1/2005 9:00	1.34	4/1/2005 15:00	-0.05	4/1/2005 21:00	1.15
4/1/2005 9:06	1.21	4/1/2005 15:06	0.04	4/1/2005 21:06	1.06
4/1/2005 9:12	1.09	4/1/2005 15:12	0.16	4/1/2005 21:12	0.99
4/1/2005 9:18	0.95	4/1/2005 15:18	0.25	4/1/2005 21:18	0.88
4/1/2005 9:24	0.82	4/1/2005 15:24	0.33	4/1/2005 21:24	0.77
4/1/2005 9:30	0.68	4/1/2005 15:30	0.42	4/1/2005 21:30	0.68
4/1/2005 9:36	0.54	4/1/2005 15:36	0.53	4/1/2005 21:36	0.59
4/1/2005 9:42	0.41	4/1/2005 15:42	0.61	4/1/2005 21:42	0.51
4/1/2005 9:48	0.25	4/1/2005 15:48	0.70	4/1/2005 21:48	0.39
4/1/2005 9:54	0.12	4/1/2005 15:54	0.80	4/1/2005 21:54	0.33
4/1/2005 10:00	-0.02	4/1/2005 16:00	0.86	4/1/2005 22:00	0.22
4/1/2005 10:06	-0.16	4/1/2005 16:06	0.95	4/1/2005 22:06	0.10
4/1/2005 10:12	-0.27	4/1/2005 16:12	1.02	4/1/2005 22:12	0.03
4/1/2005 10:18	-0.38	4/1/2005 16:18	1.09	4/1/2005 22:18	-0.06
4/1/2005 10:24	-0.49	4/1/2005 16:24	1.17	4/1/2005 22:24	-0.15
4/1/2005 10:30	-0.61	4/1/2005 16:30	1.24	4/1/2005 22:30	-0.24
4/1/2005 10:36	-0.70	4/1/2005 16:36	1.31	4/1/2005 22:36	-0.31
4/1/2005 10:42	-0.82	4/1/2005 16:42	1.38	4/1/2005 22:42	-0.40
4/1/2005 10:48	-0.92	4/1/2005 16:48	1.45	4/1/2005 22:48	-0.49
4/1/2005 10:54	-0.99	4/1/2005 16:54	1.52	4/1/2005 22:54	-0.56
4/1/2005 11:00	-1.08	4/1/2005 17:00	1.56	4/1/2005 23:00	-0.60
4/1/2005 11:06	-1.15	4/1/2005 17:06	1.61	4/1/2005 23:06	-0.67
4/1/2005 11:12	-1.25	4/1/2005 17:12	1.70	4/1/2005 23:12	-0.71
4/1/2005 11:18	-1.34	4/1/2005 17:18	1.77	4/1/2005 23:18	-0.77
4/1/2005 11:24	-1.39	4/1/2005 17:24	1.84	4/1/2005 23:24	-0.81
4/1/2005 11:30	-1.45	4/1/2005 17:30	1.89	4/1/2005 23:30	-0.85

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/1/2005 23:36	-0.89	4/2/2005 5:36	2.85	4/2/2005 11:36	0.57
4/1/2005 23:42	-0.93	4/2/2005 5:42	2.93	4/2/2005 11:42	0.50
4/1/2005 23:48	-0.97	4/2/2005 5:48	2.98	4/2/2005 11:48	0.44
4/1/2005 23:54	-1.02	4/2/2005 5:54	3.04	4/2/2005 11:54	0.40
4/2/2005 0:00	-1.07	4/2/2005 6:00	3.12	4/2/2005 12:00	0.31
4/2/2005 0:06	-1.11	4/2/2005 6:06	3.17	4/2/2005 12:06	0.26
4/2/2005 0:12	-1.11	4/2/2005 6:12	3.19	4/2/2005 12:12	0.21
4/2/2005 0:18	-1.16	4/2/2005 6:18	3.27	4/2/2005 12:18	0.17
4/2/2005 0:24	-1.15	4/2/2005 6:24	3.35	4/2/2005 12:24	0.16
4/2/2005 0:30	-1.19	4/2/2005 6:30	3.37	4/2/2005 12:30	0.10
4/2/2005 0:36	-1.22	4/2/2005 6:36	3.45	4/2/2005 12:36	0.01
4/2/2005 0:42	-1.20	4/2/2005 6:42	3.46	4/2/2005 12:42	-0.03
4/2/2005 0:48	-1.17	4/2/2005 6:48	3.49	4/2/2005 12:48	-0.06
4/2/2005 0:54	-1.14	4/2/2005 6:54	3.54	4/2/2005 12:54	-0.12
4/2/2005 1:00	-1.13	4/2/2005 7:00	3.56	4/2/2005 13:00	-0.16
4/2/2005 1:06	-1.11	4/2/2005 7:06	3.57	4/2/2005 13:06	-0.22
4/2/2005 1:12	-1.08	4/2/2005 7:12	3.55	4/2/2005 13:12	-0.27
4/2/2005 1:18	-1.04	4/2/2005 7:18	3.57	4/2/2005 13:18	-0.29
4/2/2005 1:24	-1.00	4/2/2005 7:24	3.55	4/2/2005 13:24	-0.34
4/2/2005 1:30	-0.95	4/2/2005 7:30	3.55	4/2/2005 13:30	-0.38
4/2/2005 1:36	-0.88	4/2/2005 7:36	3.55	4/2/2005 13:36	-0.42
4/2/2005 1:42	-0.82	4/2/2005 7:42	3.52	4/2/2005 13:42	-0.43
4/2/2005 1:48	-0.77	4/2/2005 7:48	3.51	4/2/2005 13:48	-0.46
4/2/2005 1:54	-0.67	4/2/2005 7:54	3.50	4/2/2005 13:54	-0.49
4/2/2005 2:00	-0.59	4/2/2005 8:00	3.45	4/2/2005 14:00	-0.49
4/2/2005 2:06	-0.54	4/2/2005 8:06	3.40	4/2/2005 14:06	-0.52
4/2/2005 2:12	-0.45	4/2/2005 8:12	3.37	4/2/2005 14:12	-0.56
4/2/2005 2:18	-0.37	4/2/2005 8:18	3.33	4/2/2005 14:18	-0.58
4/2/2005 2:24	-0.26	4/2/2005 8:24	3.29	4/2/2005 14:24	-0.57
4/2/2005 2:30	-0.14	4/2/2005 8:30	3.22	4/2/2005 14:30	-0.57
4/2/2005 2:36	-0.03	4/2/2005 8:36	3.13	4/2/2005 14:36	-0.57
4/2/2005 2:42	0.08	4/2/2005 8:42	3.09	4/2/2005 14:42	-0.56
4/2/2005 2:48	0.22	4/2/2005 8:48	3.02	4/2/2005 14:48	-0.56
4/2/2005 2:54	0.31	4/2/2005 8:54	2.94	4/2/2005 14:54	-0.55
4/2/2005 3:00	0.44	4/2/2005 9:00	2.85	4/2/2005 15:00	-0.52
4/2/2005 3:06	0.57	4/2/2005 9:06	2.79	4/2/2005 15:06	-0.47
4/2/2005 3:12	0.66	4/2/2005 9:12	2.70	4/2/2005 15:12	-0.44
4/2/2005 3:18	0.76	4/2/2005 9:18	2.64	4/2/2005 15:18	-0.37
4/2/2005 3:24	0.86	4/2/2005 9:24	2.51	4/2/2005 15:24	-0.31
4/2/2005 3:30	0.98	4/2/2005 9:30	2.46	4/2/2005 15:30	-0.26
4/2/2005 3:36	1.11	4/2/2005 9:36	2.36	4/2/2005 15:36	-0.19
4/2/2005 3:42	1.20	4/2/2005 9:42	2.27	4/2/2005 15:42	-0.09
4/2/2005 3:48	1.31	4/2/2005 9:48	2.13	4/2/2005 15:48	0.00
4/2/2005 3:54	1.43	4/2/2005 9:54	2.07	4/2/2005 15:54	0.10
4/2/2005 4:00	1.57	4/2/2005 10:00	1.98	4/2/2005 16:00	0.19
4/2/2005 4:06	1.67	4/2/2005 10:06	1.89	4/2/2005 16:06	0.33
4/2/2005 4:12	1.76	4/2/2005 10:12	1.78	4/2/2005 16:12	0.45
4/2/2005 4:18	1.85	4/2/2005 10:18	1.69	4/2/2005 16:18	0.58
4/2/2005 4:24	1.95	4/2/2005 10:24	1.61	4/2/2005 16:24	0.70
4/2/2005 4:30	2.02	4/2/2005 10:30	1.50	4/2/2005 16:30	0.81
4/2/2005 4:36	2.12	4/2/2005 10:36	1.41	4/2/2005 16:36	0.96
4/2/2005 4:42	2.20	4/2/2005 10:42	1.30	4/2/2005 16:42	1.06
4/2/2005 4:48	2.30	4/2/2005 10:48	1.21	4/2/2005 16:48	1.20
4/2/2005 4:54	2.39	4/2/2005 10:54	1.12	4/2/2005 16:54	1.33
4/2/2005 5:00	2.44	4/2/2005 11:00	1.02	4/2/2005 17:00	1.46
4/2/2005 5:06	2.51	4/2/2005 11:06	0.93	4/2/2005 17:06	1.60
4/2/2005 5:12	2.61	4/2/2005 11:12	0.81	4/2/2005 17:12	1.69
4/2/2005 5:18	2.66	4/2/2005 11:18	0.77	4/2/2005 17:18	1.83
4/2/2005 5:24	2.71	4/2/2005 11:24	0.71	4/2/2005 17:24	1.93
4/2/2005 5:30	2.76	4/2/2005 11:30	0.64	4/2/2005 17:30	2.05

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/2/2005 17:36	2.16	4/2/2005 23:36	1.95	4/3/2005 5:36	1.90
4/2/2005 17:42	2.28	4/2/2005 23:42	1.93	4/3/2005 5:42	2.08
4/2/2005 17:48	2.37	4/2/2005 23:48	1.87	4/3/2005 5:48	2.26
4/2/2005 17:54	2.49	4/2/2005 23:54	1.85	4/3/2005 5:54	2.43
4/2/2005 18:00	2.61	4/3/2005 0:00	1.79	4/3/2005 6:00	2.64
4/2/2005 18:06	2.69	4/3/2005 0:06	1.72	4/3/2005 6:06	2.81
4/2/2005 18:12	2.81	4/3/2005 0:12	1.66	4/3/2005 6:12	2.95
4/2/2005 18:18	2.90	4/3/2005 0:18	1.62	4/3/2005 6:18	3.09
4/2/2005 18:24	3.00	4/3/2005 0:24	1.53	4/3/2005 6:24	3.22
4/2/2005 18:30	3.06	4/3/2005 0:30	1.44	4/3/2005 6:30	3.36
4/2/2005 18:36	3.16	4/3/2005 0:36	1.39	4/3/2005 6:36	3.47
4/2/2005 18:42	3.23	4/3/2005 0:42	1.36	4/3/2005 6:42	3.61
4/2/2005 18:48	3.30	4/3/2005 0:48	1.29	4/3/2005 6:48	3.74
4/2/2005 18:54	3.33	4/3/2005 0:54	1.22	4/3/2005 6:54	3.83
4/2/2005 19:00	3.40	4/3/2005 1:00	1.17	4/3/2005 7:00	3.92
4/2/2005 19:06	3.45	4/3/2005 1:06	1.16	4/3/2005 7:06	4.05
4/2/2005 19:12	3.48	4/3/2005 1:12	1.10	4/3/2005 7:12	4.14
4/2/2005 19:18	3.52	4/3/2005 1:18	1.09	4/3/2005 7:18	4.23
4/2/2005 19:24	3.55	4/3/2005 1:24	1.06	4/3/2005 7:24	4.32
4/2/2005 19:30	3.58	4/3/2005 1:30	1.02	4/3/2005 7:30	4.37
4/2/2005 19:36	3.61	4/3/2005 1:36	1.01	4/3/2005 7:36	4.44
4/2/2005 19:42	3.59	4/3/2005 1:42	0.98	4/3/2005 7:42	4.48
4/2/2005 19:48	3.59	4/3/2005 1:48	0.96	4/3/2005 7:48	4.50
4/2/2005 19:54	3.62	4/3/2005 1:54	0.94	4/3/2005 7:54	4.52
4/2/2005 20:00	3.65	4/3/2005 2:00	0.94	4/3/2005 8:00	4.54
4/2/2005 20:06	3.63	4/3/2005 2:06	0.99	4/3/2005 8:06	4.52
4/2/2005 20:12	3.58	4/3/2005 2:12	1.03	4/3/2005 8:12	4.51
4/2/2005 20:18	3.59	4/3/2005 2:18	1.03	4/3/2005 8:18	4.51
4/2/2005 20:24	3.60	4/3/2005 2:24	1.04	4/3/2005 8:24	4.48
4/2/2005 20:30	3.59	4/3/2005 2:30	1.04	4/3/2005 8:30	4.45
4/2/2005 20:36	3.54	4/3/2005 2:36	1.05	4/3/2005 8:36	4.41
4/2/2005 20:42	3.45	4/3/2005 2:42	1.11	4/3/2005 8:42	4.38
4/2/2005 20:48	3.39	4/3/2005 2:48	1.15	4/3/2005 8:48	4.38
4/2/2005 20:54	3.36	4/3/2005 2:54	1.11	4/3/2005 8:54	4.31
4/2/2005 21:00	3.32	4/3/2005 3:00	1.20	4/3/2005 9:00	4.26
4/2/2005 21:06	3.28	4/3/2005 3:06	1.27	4/3/2005 9:06	4.23
4/2/2005 21:12	3.19	4/3/2005 3:12	1.28	4/3/2005 9:12	4.16
4/2/2005 21:18	3.11	4/3/2005 3:18	1.27	4/3/2005 9:18	4.11
4/2/2005 21:24	3.04	4/3/2005 3:24	1.30	4/3/2005 9:24	4.07
4/2/2005 21:30	2.94	4/3/2005 3:30	1.31	4/3/2005 9:30	4.04
4/2/2005 21:36	2.87	4/3/2005 3:36	1.31	4/3/2005 9:36	3.99
4/2/2005 21:42	2.78	4/3/2005 3:42	1.34	4/3/2005 9:42	3.95
4/2/2005 21:48	2.71	4/3/2005 3:48	1.37	4/3/2005 9:48	3.90
4/2/2005 21:54	2.63	4/3/2005 3:54	1.35	4/3/2005 9:54	3.83
4/2/2005 22:00	2.56	4/3/2005 4:00	1.37	4/3/2005 10:00	3.76
4/2/2005 22:06	2.48	4/3/2005 4:06	1.37	4/3/2005 10:06	3.67
4/2/2005 22:12	2.43	4/3/2005 4:12	1.35	4/3/2005 10:12	3.60
4/2/2005 22:18	2.39	4/3/2005 4:18	1.31	4/3/2005 10:18	3.53
4/2/2005 22:24	2.36	4/3/2005 4:24	1.31	4/3/2005 10:24	3.46
4/2/2005 22:30	2.32	4/3/2005 4:30	1.27	4/3/2005 10:30	3.34
4/2/2005 22:36	2.25	4/3/2005 4:36	1.25	4/3/2005 10:36	3.24
4/2/2005 22:42	2.23	4/3/2005 4:42	1.23	4/3/2005 10:42	3.12
4/2/2005 22:48	2.19	4/3/2005 4:48	1.23	4/3/2005 10:48	3.01
4/2/2005 22:54	2.15	4/3/2005 4:54	1.25	4/3/2005 10:54	2.89
4/2/2005 23:00	2.12	4/3/2005 5:00	1.34	4/3/2005 11:00	2.75
4/2/2005 23:06	2.11	4/3/2005 5:06	1.38	4/3/2005 11:06	2.63
4/2/2005 23:12	2.07	4/3/2005 5:12	1.43	4/3/2005 11:12	2.51
4/2/2005 23:18	2.07	4/3/2005 5:18	1.53	4/3/2005 11:18	2.42
4/2/2005 23:24	2.03	4/3/2005 5:24	1.62	4/3/2005 11:24	2.30
4/2/2005 23:30	1.99	4/3/2005 5:30	1.75	4/3/2005 11:30	2.20

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/3/2005 11:36	2.06	4/3/2005 17:36	0.73	4/3/2005 23:36	1.39
4/3/2005 11:42	1.97	4/3/2005 17:42	0.87	4/3/2005 23:42	1.30
4/3/2005 11:48	1.83	4/3/2005 17:48	0.96	4/3/2005 23:48	1.18
4/3/2005 11:54	1.74	4/3/2005 17:54	1.07	4/3/2005 23:54	1.09
4/3/2005 12:00	1.60	4/3/2005 18:00	1.19	4/4/2005 0:00	1.00
4/3/2005 12:06	1.51	4/3/2005 18:06	1.30	4/4/2005 0:06	0.92
4/3/2005 12:12	1.42	4/3/2005 18:12	1.43	4/4/2005 0:12	0.83
4/3/2005 12:18	1.32	4/3/2005 18:18	1.56	4/4/2005 0:18	0.76
4/3/2005 12:24	1.23	4/3/2005 18:24	1.68	4/4/2005 0:24	0.66
4/3/2005 12:30	1.14	4/3/2005 18:30	1.78	4/4/2005 0:30	0.59
4/3/2005 12:36	1.04	4/3/2005 18:36	1.86	4/4/2005 0:36	0.49
4/3/2005 12:42	0.97	4/3/2005 18:42	1.93	4/4/2005 0:42	0.42
4/3/2005 12:48	0.88	4/3/2005 18:48	2.01	4/4/2005 0:48	0.35
4/3/2005 12:54	0.79	4/3/2005 18:54	2.10	4/4/2005 0:54	0.28
4/3/2005 13:00	0.71	4/3/2005 19:00	2.17	4/4/2005 1:00	0.22
4/3/2005 13:06	0.67	4/3/2005 19:06	2.26	4/4/2005 1:06	0.14
4/3/2005 13:12	0.56	4/3/2005 19:12	2.33	4/4/2005 1:12	0.05
4/3/2005 13:18	0.46	4/3/2005 19:18	2.40	4/4/2005 1:18	-0.02
4/3/2005 13:24	0.39	4/3/2005 19:24	2.44	4/4/2005 1:24	-0.09
4/3/2005 13:30	0.28	4/3/2005 19:30	2.46	4/4/2005 1:30	-0.18
4/3/2005 13:36	0.18	4/3/2005 19:36	2.53	4/4/2005 1:36	-0.25
4/3/2005 13:42	0.07	4/3/2005 19:42	2.57	4/4/2005 1:42	-0.32
4/3/2005 13:48	-0.03	4/3/2005 19:48	2.59	4/4/2005 1:48	-0.41
4/3/2005 13:54	-0.09	4/3/2005 19:54	2.61	4/4/2005 1:54	-0.49
4/3/2005 14:00	-0.19	4/3/2005 20:00	2.64	4/4/2005 2:00	-0.58
4/3/2005 14:06	-0.31	4/3/2005 20:06	2.67	4/4/2005 2:06	-0.67
4/3/2005 14:12	-0.43	4/3/2005 20:12	2.68	4/4/2005 2:12	-0.77
4/3/2005 14:18	-0.50	4/3/2005 20:18	2.70	4/4/2005 2:18	-0.83
4/3/2005 14:24	-0.59	4/3/2005 20:24	2.73	4/4/2005 2:24	-0.95
4/3/2005 14:30	-0.68	4/3/2005 20:30	2.73	4/4/2005 2:30	-1.02
4/3/2005 14:36	-0.78	4/3/2005 20:36	2.77	4/4/2005 2:36	-1.09
4/3/2005 14:42	-0.85	4/3/2005 20:42	2.77	4/4/2005 2:42	-1.17
4/3/2005 14:48	-0.89	4/3/2005 20:48	2.79	4/4/2005 2:48	-1.24
4/3/2005 14:54	-0.94	4/3/2005 20:54	2.79	4/4/2005 2:54	-1.31
4/3/2005 15:00	-0.97	4/3/2005 21:00	2.79	4/4/2005 3:00	-1.39
4/3/2005 15:06	-1.00	4/3/2005 21:06	2.79	4/4/2005 3:06	-1.44
4/3/2005 15:12	-1.00	4/3/2005 21:12	2.79	4/4/2005 3:12	-1.49
4/3/2005 15:18	-0.98	4/3/2005 21:18	2.79	4/4/2005 3:18	-1.54
4/3/2005 15:24	-0.98	4/3/2005 21:24	2.80	4/4/2005 3:24	-1.55
4/3/2005 15:30	-0.93	4/3/2005 21:30	2.77	4/4/2005 3:30	-1.57
4/3/2005 15:36	-0.92	4/3/2005 21:36	2.74	4/4/2005 3:36	-1.63
4/3/2005 15:42	-0.87	4/3/2005 21:42	2.72	4/4/2005 3:42	-1.65
4/3/2005 15:48	-0.83	4/3/2005 21:48	2.67	4/4/2005 3:48	-1.65
4/3/2005 15:54	-0.76	4/3/2005 21:54	2.65	4/4/2005 3:54	-1.66
4/3/2005 16:00	-0.69	4/3/2005 22:00	2.65	4/4/2005 4:00	-1.66
4/3/2005 16:06	-0.60	4/3/2005 22:06	2.59	4/4/2005 4:06	-1.66
4/3/2005 16:12	-0.53	4/3/2005 22:12	2.54	4/4/2005 4:12	-1.66
4/3/2005 16:18	-0.49	4/3/2005 22:18	2.48	4/4/2005 4:18	-1.64
4/3/2005 16:24	-0.39	4/3/2005 22:24	2.43	4/4/2005 4:24	-1.57
4/3/2005 16:30	-0.30	4/3/2005 22:30	2.38	4/4/2005 4:30	-1.51
4/3/2005 16:36	-0.26	4/3/2005 22:36	2.31	4/4/2005 4:36	-1.47
4/3/2005 16:42	-0.20	4/3/2005 22:42	2.22	4/4/2005 4:42	-1.40
4/3/2005 16:48	-0.10	4/3/2005 22:48	2.13	4/4/2005 4:48	-1.31
4/3/2005 16:54	-0.01	4/3/2005 22:54	2.05	4/4/2005 4:54	-1.21
4/3/2005 17:00	0.10	4/3/2005 23:00	1.96	4/4/2005 5:00	-1.12
4/3/2005 17:06	0.21	4/3/2005 23:06	1.84	4/4/2005 5:06	-1.04
4/3/2005 17:12	0.32	4/3/2005 23:12	1.76	4/4/2005 5:12	-0.92
4/3/2005 17:18	0.41	4/3/2005 23:18	1.67	4/4/2005 5:18	-0.81
4/3/2005 17:24	0.51	4/3/2005 23:24	1.60	4/4/2005 5:24	-0.70
4/3/2005 17:30	0.60	4/3/2005 23:30	1.49	4/4/2005 5:30	-0.58

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/4/2005 5:36	-0.48	4/4/2005 11:36	1.46	4/4/2005 17:36	-2.65
4/4/2005 5:42	-0.34	4/4/2005 11:42	1.39	4/4/2005 17:42	-2.51
4/4/2005 5:48	-0.20	4/4/2005 11:48	1.32	4/4/2005 17:48	-2.40
4/4/2005 5:54	-0.09	4/4/2005 11:54	1.25	4/4/2005 17:54	-2.24
4/4/2005 6:00	0.07	4/4/2005 12:00	1.18	4/4/2005 18:00	-2.08
4/4/2005 6:06	0.20	4/4/2005 12:06	1.08	4/4/2005 18:06	-1.94
4/4/2005 6:12	0.36	4/4/2005 12:12	1.01	4/4/2005 18:12	-1.78
4/4/2005 6:18	0.52	4/4/2005 12:18	0.92	4/4/2005 18:18	-1.60
4/4/2005 6:24	0.68	4/4/2005 12:24	0.85	4/4/2005 18:24	-1.43
4/4/2005 6:30	0.81	4/4/2005 12:30	0.78	4/4/2005 18:30	-1.25
4/4/2005 6:36	0.97	4/4/2005 12:36	0.68	4/4/2005 18:36	-1.07
4/4/2005 6:42	1.16	4/4/2005 12:42	0.59	4/4/2005 18:42	-0.91
4/4/2005 6:48	1.34	4/4/2005 12:48	0.52	4/4/2005 18:48	-0.72
4/4/2005 6:54	1.48	4/4/2005 12:54	0.43	4/4/2005 18:54	-0.56
4/4/2005 7:00	1.65	4/4/2005 13:00	0.31	4/4/2005 19:00	-0.40
4/4/2005 7:06	1.81	4/4/2005 13:06	0.22	4/4/2005 19:06	-0.24
4/4/2005 7:12	1.97	4/4/2005 13:12	0.10	4/4/2005 19:12	-0.06
4/4/2005 7:18	2.13	4/4/2005 13:18	-0.01	4/4/2005 19:18	0.08
4/4/2005 7:24	2.24	4/4/2005 13:24	-0.11	4/4/2005 19:24	0.26
4/4/2005 7:30	2.38	4/4/2005 13:30	-0.22	4/4/2005 19:30	0.42
4/4/2005 7:36	2.49	4/4/2005 13:36	-0.32	4/4/2005 19:36	0.60
4/4/2005 7:42	2.61	4/4/2005 13:42	-0.41	4/4/2005 19:42	0.76
4/4/2005 7:48	2.67	4/4/2005 13:48	-0.50	4/4/2005 19:48	0.89
4/4/2005 7:54	2.78	4/4/2005 13:54	-0.57	4/4/2005 19:54	1.03
4/4/2005 8:00	2.87	4/4/2005 14:00	-0.67	4/4/2005 20:00	1.17
4/4/2005 8:06	2.92	4/4/2005 14:06	-0.79	4/4/2005 20:06	1.32
4/4/2005 8:12	2.96	4/4/2005 14:12	-0.88	4/4/2005 20:12	1.44
4/4/2005 8:18	3.06	4/4/2005 14:18	-0.95	4/4/2005 20:18	1.60
4/4/2005 8:24	3.05	4/4/2005 14:24	-1.07	4/4/2005 20:24	1.73
4/4/2005 8:30	3.09	4/4/2005 14:30	-1.16	4/4/2005 20:30	1.82
4/4/2005 8:36	3.11	4/4/2005 14:36	-1.26	4/4/2005 20:36	1.95
4/4/2005 8:42	3.14	4/4/2005 14:42	-1.33	4/4/2005 20:42	2.02
4/4/2005 8:48	3.14	4/4/2005 14:48	-1.44	4/4/2005 20:48	2.09
4/4/2005 8:54	3.16	4/4/2005 14:54	-1.54	4/4/2005 20:54	2.18
4/4/2005 9:00	3.18	4/4/2005 15:00	-1.66	4/4/2005 21:00	2.24
4/4/2005 9:06	3.18	4/4/2005 15:06	-1.75	4/4/2005 21:06	2.33
4/4/2005 9:12	3.15	4/4/2005 15:12	-1.86	4/4/2005 21:12	2.35
4/4/2005 9:18	3.16	4/4/2005 15:18	-1.96	4/4/2005 21:18	2.41
4/4/2005 9:24	3.15	4/4/2005 15:24	-2.03	4/4/2005 21:24	2.46
4/4/2005 9:30	3.13	4/4/2005 15:30	-2.12	4/4/2005 21:30	2.46
4/4/2005 9:36	3.09	4/4/2005 15:36	-2.21	4/4/2005 21:36	2.52
4/4/2005 9:42	3.05	4/4/2005 15:42	-2.30	4/4/2005 21:42	2.54
4/4/2005 9:48	3.02	4/4/2005 15:48	-2.40	4/4/2005 21:48	2.54
4/4/2005 9:54	2.98	4/4/2005 15:54	-2.46	4/4/2005 21:54	2.54
4/4/2005 10:00	2.91	4/4/2005 16:00	-2.56	4/4/2005 22:00	2.56
4/4/2005 10:06	2.83	4/4/2005 16:06	-2.65	4/4/2005 22:06	2.53
4/4/2005 10:12	2.77	4/4/2005 16:12	-2.72	4/4/2005 22:12	2.48
4/4/2005 10:18	2.67	4/4/2005 16:18	-2.79	4/4/2005 22:18	2.46
4/4/2005 10:24	2.55	4/4/2005 16:24	-2.83	4/4/2005 22:24	2.43
4/4/2005 10:30	2.49	4/4/2005 16:30	-2.86	4/4/2005 22:30	2.38
4/4/2005 10:36	2.37	4/4/2005 16:36	-2.93	4/4/2005 22:36	2.35
4/4/2005 10:42	2.25	4/4/2005 16:42	-2.95	4/4/2005 22:42	2.28
4/4/2005 10:48	2.16	4/4/2005 16:48	-2.97	4/4/2005 22:48	2.19
4/4/2005 10:54	2.09	4/4/2005 16:54	-3.02	4/4/2005 22:54	2.11
4/4/2005 11:00	1.97	4/4/2005 17:00	-3.02	4/4/2005 23:00	2.02
4/4/2005 11:06	1.90	4/4/2005 17:06	-3.00	4/4/2005 23:06	1.94
4/4/2005 11:12	1.80	4/4/2005 17:12	-2.98	4/4/2005 23:12	1.88
4/4/2005 11:18	1.71	4/4/2005 17:18	-2.93	4/4/2005 23:18	1.80
4/4/2005 11:24	1.61	4/4/2005 17:24	-2.86	4/4/2005 23:24	1.70
4/4/2005 11:30	1.54	4/4/2005 17:30	-2.76	4/4/2005 23:30	1.61

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/4/2005 23:36	1.51	4/5/2005 5:36	-2.10	4/5/2005 11:36	2.56
4/4/2005 23:42	1.44	4/5/2005 5:42	-1.99	4/5/2005 11:42	2.51
4/4/2005 23:48	1.34	4/5/2005 5:48	-1.86	4/5/2005 11:48	2.46
4/4/2005 23:54	1.25	4/5/2005 5:54	-1.72	4/5/2005 11:54	2.39
4/5/2005 0:00	1.14	4/5/2005 6:00	-1.56	4/5/2005 12:00	2.32
4/5/2005 0:06	1.07	4/5/2005 6:06	-1.40	4/5/2005 12:06	2.25
4/5/2005 0:12	0.97	4/5/2005 6:12	-1.27	4/5/2005 12:12	2.17
4/5/2005 0:18	0.88	4/5/2005 6:18	-1.11	4/5/2005 12:18	2.08
4/5/2005 0:24	0.79	4/5/2005 6:24	-0.96	4/5/2005 12:24	1.98
4/5/2005 0:30	0.69	4/5/2005 6:30	-0.82	4/5/2005 12:30	1.84
4/5/2005 0:36	0.61	4/5/2005 6:36	-0.67	4/5/2005 12:36	1.75
4/5/2005 0:42	0.52	4/5/2005 6:42	-0.50	4/5/2005 12:42	1.63
4/5/2005 0:48	0.42	4/5/2005 6:48	-0.34	4/5/2005 12:48	1.52
4/5/2005 0:54	0.33	4/5/2005 6:54	-0.18	4/5/2005 12:54	1.41
4/5/2005 1:00	0.23	4/5/2005 7:00	-0.02	4/5/2005 13:00	1.29
4/5/2005 1:06	0.12	4/5/2005 7:06	0.11	4/5/2005 13:06	1.15
4/5/2005 1:12	0.04	4/5/2005 7:12	0.25	4/5/2005 13:12	1.04
4/5/2005 1:18	-0.03	4/5/2005 7:18	0.41	4/5/2005 13:18	0.92
4/5/2005 1:24	-0.15	4/5/2005 7:24	0.57	4/5/2005 13:24	0.78
4/5/2005 1:30	-0.26	4/5/2005 7:30	0.71	4/5/2005 13:30	0.67
4/5/2005 1:36	-0.34	4/5/2005 7:36	0.84	4/5/2005 13:36	0.53
4/5/2005 1:42	-0.47	4/5/2005 7:42	1.02	4/5/2005 13:42	0.41
4/5/2005 1:48	-0.57	4/5/2005 7:48	1.17	4/5/2005 13:48	0.27
4/5/2005 1:54	-0.64	4/5/2005 7:54	1.31	4/5/2005 13:54	0.15
4/5/2005 2:00	-0.71	4/5/2005 8:00	1.42	4/5/2005 14:00	-0.01
4/5/2005 2:06	-0.81	4/5/2005 8:06	1.55	4/5/2005 14:06	-0.15
4/5/2005 2:12	-0.93	4/5/2005 8:12	1.64	4/5/2005 14:12	-0.27
4/5/2005 2:18	-1.00	4/5/2005 8:18	1.78	4/5/2005 14:18	-0.42
4/5/2005 2:24	-1.09	4/5/2005 8:24	1.87	4/5/2005 14:24	-0.56
4/5/2005 2:30	-1.19	4/5/2005 8:30	1.96	4/5/2005 14:30	-0.69
4/5/2005 2:36	-1.28	4/5/2005 8:36	2.04	4/5/2005 14:36	-0.83
4/5/2005 2:42	-1.35	4/5/2005 8:42	2.11	4/5/2005 14:42	-0.99
4/5/2005 2:48	-1.45	4/5/2005 8:48	2.17	4/5/2005 14:48	-1.13
4/5/2005 2:54	-1.52	4/5/2005 8:54	2.24	4/5/2005 14:54	-1.22
4/5/2005 3:00	-1.59	4/5/2005 9:00	2.29	4/5/2005 15:00	-1.36
4/5/2005 3:06	-1.68	4/5/2005 9:06	2.33	4/5/2005 15:06	-1.46
4/5/2005 3:12	-1.75	4/5/2005 9:12	2.37	4/5/2005 15:12	-1.60
4/5/2005 3:18	-1.85	4/5/2005 9:18	2.42	4/5/2005 15:18	-1.72
4/5/2005 3:24	-1.94	4/5/2005 9:24	2.44	4/5/2005 15:24	-1.84
4/5/2005 3:30	-2.03	4/5/2005 9:30	2.48	4/5/2005 15:30	-1.98
4/5/2005 3:36	-2.13	4/5/2005 9:36	2.50	4/5/2005 15:36	-2.09
4/5/2005 3:42	-2.22	4/5/2005 9:42	2.52	4/5/2005 15:42	-2.23
4/5/2005 3:48	-2.27	4/5/2005 9:48	2.57	4/5/2005 15:48	-2.34
4/5/2005 3:54	-2.33	4/5/2005 9:54	2.59	4/5/2005 15:54	-2.45
4/5/2005 4:00	-2.43	4/5/2005 10:00	2.61	4/5/2005 16:00	-2.56
4/5/2005 4:06	-2.48	4/5/2005 10:06	2.58	4/5/2005 16:06	-2.67
4/5/2005 4:12	-2.53	4/5/2005 10:12	2.64	4/5/2005 16:12	-2.79
4/5/2005 4:18	-2.59	4/5/2005 10:18	2.64	4/5/2005 16:18	-2.90
4/5/2005 4:24	-2.60	4/5/2005 10:24	2.64	4/5/2005 16:24	-3.01
4/5/2005 4:30	-2.64	4/5/2005 10:30	2.66	4/5/2005 16:30	-3.10
4/5/2005 4:36	-2.64	4/5/2005 10:36	2.68	4/5/2005 16:36	-3.19
4/5/2005 4:42	-2.64	4/5/2005 10:42	2.70	4/5/2005 16:42	-3.31
4/5/2005 4:48	-2.62	4/5/2005 10:48	2.73	4/5/2005 16:48	-3.40
4/5/2005 4:54	-2.62	4/5/2005 10:54	2.72	4/5/2005 16:54	-3.47
4/5/2005 5:00	-2.60	4/5/2005 11:00	2.72	4/5/2005 17:00	-3.53
4/5/2005 5:06	-2.56	4/5/2005 11:06	2.72	4/5/2005 17:06	-3.60
4/5/2005 5:12	-2.48	4/5/2005 11:12	2.71	4/5/2005 17:12	-3.64
4/5/2005 5:18	-2.42	4/5/2005 11:18	2.66	4/5/2005 17:18	-3.69
4/5/2005 5:24	-2.30	4/5/2005 11:24	2.64	4/5/2005 17:24	-3.68
4/5/2005 5:30	-2.21	4/5/2005 11:30	2.61	4/5/2005 17:30	-3.68

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/5/2005 17:36	-3.68	4/5/2005 23:36	2.51	4/6/2005 5:36	-3.00
4/5/2005 17:42	-3.65	4/5/2005 23:42	2.46	4/6/2005 5:42	-3.02
4/5/2005 17:48	-3.59	4/5/2005 23:48	2.46	4/6/2005 5:48	-3.02
4/5/2005 17:54	-3.49	4/5/2005 23:54	2.44	4/6/2005 5:54	-3.00
4/5/2005 18:00	-3.40	4/6/2005 0:00	2.35	4/6/2005 6:00	-2.95
4/5/2005 18:06	-3.29	4/6/2005 0:06	2.30	4/6/2005 6:06	-2.90
4/5/2005 18:12	-3.17	4/6/2005 0:12	2.27	4/6/2005 6:12	-2.88
4/5/2005 18:18	-3.03	4/6/2005 0:18	2.21	4/6/2005 6:18	-2.78
4/5/2005 18:24	-2.84	4/6/2005 0:24	2.14	4/6/2005 6:24	-2.72
4/5/2005 18:30	-2.66	4/6/2005 0:30	2.07	4/6/2005 6:30	-2.62
4/5/2005 18:36	-2.47	4/6/2005 0:36	1.95	4/6/2005 6:36	-2.51
4/5/2005 18:42	-2.31	4/6/2005 0:42	1.88	4/6/2005 6:42	-2.37
4/5/2005 18:48	-2.13	4/6/2005 0:48	1.78	4/6/2005 6:48	-2.21
4/5/2005 18:54	-1.92	4/6/2005 0:54	1.69	4/6/2005 6:54	-2.07
4/5/2005 19:00	-1.71	4/6/2005 1:00	1.60	4/6/2005 7:00	-1.93
4/5/2005 19:06	-1.50	4/6/2005 1:06	1.48	4/6/2005 7:06	-1.77
4/5/2005 19:12	-1.32	4/6/2005 1:12	1.37	4/6/2005 7:12	-1.59
4/5/2005 19:18	-1.09	4/6/2005 1:18	1.27	4/6/2005 7:18	-1.42
4/5/2005 19:24	-0.91	4/6/2005 1:24	1.15	4/6/2005 7:24	-1.27
4/5/2005 19:30	-0.70	4/6/2005 1:30	1.06	4/6/2005 7:30	-1.08
4/5/2005 19:36	-0.54	4/6/2005 1:36	0.94	4/6/2005 7:36	-0.90
4/5/2005 19:42	-0.36	4/6/2005 1:42	0.83	4/6/2005 7:42	-0.74
4/5/2005 19:48	-0.20	4/6/2005 1:48	0.72	4/6/2005 7:48	-0.56
4/5/2005 19:54	-0.04	4/6/2005 1:54	0.62	4/6/2005 7:54	-0.38
4/5/2005 20:00	0.12	4/6/2005 2:00	0.53	4/6/2005 8:00	-0.22
4/5/2005 20:06	0.28	4/6/2005 2:06	0.39	4/6/2005 8:06	-0.03
4/5/2005 20:12	0.44	4/6/2005 2:12	0.30	4/6/2005 8:12	0.15
4/5/2005 20:18	0.60	4/6/2005 2:18	0.18	4/6/2005 8:18	0.31
4/5/2005 20:24	0.74	4/6/2005 2:24	0.07	4/6/2005 8:24	0.48
4/5/2005 20:30	0.88	4/6/2005 2:30	-0.07	4/6/2005 8:30	0.66
4/5/2005 20:36	1.04	4/6/2005 2:36	-0.19	4/6/2005 8:36	0.81
4/5/2005 20:42	1.15	4/6/2005 2:42	-0.30	4/6/2005 8:42	0.95
4/5/2005 20:48	1.29	4/6/2005 2:48	-0.43	4/6/2005 8:48	1.12
4/5/2005 20:54	1.41	4/6/2005 2:54	-0.57	4/6/2005 8:54	1.28
4/5/2005 21:00	1.54	4/6/2005 3:00	-0.69	4/6/2005 9:00	1.42
4/5/2005 21:06	1.66	4/6/2005 3:06	-0.78	4/6/2005 9:06	1.55
4/5/2005 21:12	1.77	4/6/2005 3:12	-0.91	4/6/2005 9:12	1.69
4/5/2005 21:18	1.86	4/6/2005 3:18	-1.03	4/6/2005 9:18	1.82
4/5/2005 21:24	1.95	4/6/2005 3:24	-1.12	4/6/2005 9:24	1.95
4/5/2005 21:30	2.02	4/6/2005 3:30	-1.24	4/6/2005 9:30	2.07
4/5/2005 21:36	2.09	4/6/2005 3:36	-1.33	4/6/2005 9:36	2.20
4/5/2005 21:42	2.18	4/6/2005 3:42	-1.45	4/6/2005 9:42	2.30
4/5/2005 21:48	2.24	4/6/2005 3:48	-1.54	4/6/2005 9:48	2.40
4/5/2005 21:54	2.31	4/6/2005 3:54	-1.65	4/6/2005 9:54	2.51
4/5/2005 22:00	2.34	4/6/2005 4:00	-1.74	4/6/2005 10:00	2.60
4/5/2005 22:06	2.38	4/6/2005 4:06	-1.84	4/6/2005 10:06	2.69
4/5/2005 22:12	2.45	4/6/2005 4:12	-1.95	4/6/2005 10:12	2.76
4/5/2005 22:18	2.50	4/6/2005 4:18	-2.06	4/6/2005 10:18	2.83
4/5/2005 22:24	2.50	4/6/2005 4:24	-2.18	4/6/2005 10:24	2.91
4/5/2005 22:30	2.52	4/6/2005 4:30	-2.25	4/6/2005 10:30	2.98
4/5/2005 22:36	2.54	4/6/2005 4:36	-2.35	4/6/2005 10:36	3.04
4/5/2005 22:42	2.54	4/6/2005 4:42	-2.44	4/6/2005 10:42	3.06
4/5/2005 22:48	2.58	4/6/2005 4:48	-2.50	4/6/2005 10:48	3.11
4/5/2005 22:54	2.58	4/6/2005 4:54	-2.60	4/6/2005 10:54	3.20
4/5/2005 23:00	2.58	4/6/2005 5:00	-2.66	4/6/2005 11:00	3.22
4/5/2005 23:06	2.56	4/6/2005 5:06	-2.73	4/6/2005 11:06	3.27
4/5/2005 23:12	2.58	4/6/2005 5:12	-2.82	4/6/2005 11:12	3.26
4/5/2005 23:18	2.53	4/6/2005 5:18	-2.89	4/6/2005 11:18	3.26
4/5/2005 23:24	2.56	4/6/2005 5:24	-2.93	4/6/2005 11:24	3.28
4/5/2005 23:30	2.53	4/6/2005 5:30	-2.98	4/6/2005 11:30	3.28

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/6/2005 11:36	3.28	4/6/2005 17:36	-3.13	4/6/2005 23:36	3.05
4/6/2005 11:42	3.28	4/6/2005 17:42	-3.22	4/6/2005 23:42	3.10
4/6/2005 11:48	3.28	4/6/2005 17:48	-3.29	4/6/2005 23:48	3.12
4/6/2005 11:54	3.26	4/6/2005 17:54	-3.38	4/6/2005 23:54	3.14
4/6/2005 12:00	3.26	4/6/2005 18:00	-3.44	4/7/2005 0:00	3.16
4/6/2005 12:06	3.22	4/6/2005 18:06	-3.46	4/7/2005 0:06	3.16
4/6/2005 12:12	3.19	4/6/2005 18:12	-3.53	4/7/2005 0:12	3.18
4/6/2005 12:18	3.12	4/6/2005 18:18	-3.55	4/7/2005 0:18	3.18
4/6/2005 12:24	3.10	4/6/2005 18:24	-3.57	4/7/2005 0:24	3.18
4/6/2005 12:30	3.03	4/6/2005 18:30	-3.55	4/7/2005 0:30	3.18
4/6/2005 12:36	2.96	4/6/2005 18:36	-3.55	4/7/2005 0:36	3.13
4/6/2005 12:42	2.90	4/6/2005 18:42	-3.50	4/7/2005 0:42	3.14
4/6/2005 12:48	2.81	4/6/2005 18:48	-3.41	4/7/2005 0:48	3.12
4/6/2005 12:54	2.72	4/6/2005 18:54	-3.28	4/7/2005 0:54	3.04
4/6/2005 13:00	2.61	4/6/2005 19:00	-3.17	4/7/2005 1:00	2.99
4/6/2005 13:06	2.52	4/6/2005 19:06	-3.03	4/7/2005 1:06	2.97
4/6/2005 13:12	2.38	4/6/2005 19:12	-2.84	4/7/2005 1:12	2.88
4/6/2005 13:18	2.29	4/6/2005 19:18	-2.65	4/7/2005 1:18	2.81
4/6/2005 13:24	2.15	4/6/2005 19:24	-2.47	4/7/2005 1:24	2.73
4/6/2005 13:30	2.06	4/6/2005 19:30	-2.29	4/7/2005 1:30	2.65
4/6/2005 13:36	1.92	4/6/2005 19:36	-2.09	4/7/2005 1:36	2.53
4/6/2005 13:42	1.81	4/6/2005 19:42	-1.88	4/7/2005 1:42	2.42
4/6/2005 13:48	1.69	4/6/2005 19:48	-1.68	4/7/2005 1:48	2.29
4/6/2005 13:54	1.57	4/6/2005 19:54	-1.47	4/7/2005 1:54	2.18
4/6/2005 14:00	1.44	4/6/2005 20:00	-1.26	4/7/2005 2:00	2.06
4/6/2005 14:06	1.30	4/6/2005 20:06	-1.03	4/7/2005 2:06	1.93
4/6/2005 14:12	1.19	4/6/2005 20:12	-0.80	4/7/2005 2:12	1.84
4/6/2005 14:18	1.05	4/6/2005 20:18	-0.60	4/7/2005 2:18	1.70
4/6/2005 14:24	0.92	4/6/2005 20:24	-0.39	4/7/2005 2:24	1.59
4/6/2005 14:30	0.79	4/6/2005 20:30	-0.21	4/7/2005 2:30	1.45
4/6/2005 14:36	0.63	4/6/2005 20:36	-0.05	4/7/2005 2:36	1.34
4/6/2005 14:42	0.49	4/6/2005 20:42	0.14	4/7/2005 2:42	1.23
4/6/2005 14:48	0.36	4/6/2005 20:48	0.34	4/7/2005 2:48	1.09
4/6/2005 14:54	0.22	4/6/2005 20:54	0.50	4/7/2005 2:54	0.93
4/6/2005 15:00	0.09	4/6/2005 21:00	0.66	4/7/2005 3:00	0.80
4/6/2005 15:06	-0.05	4/6/2005 21:06	0.84	4/7/2005 3:06	0.66
4/6/2005 15:12	-0.18	4/6/2005 21:12	1.02	4/7/2005 3:12	0.50
4/6/2005 15:18	-0.34	4/6/2005 21:18	1.16	4/7/2005 3:18	0.37
4/6/2005 15:24	-0.48	4/6/2005 21:24	1.30	4/7/2005 3:24	0.21
4/6/2005 15:30	-0.64	4/6/2005 21:30	1.44	4/7/2005 3:30	0.07
4/6/2005 15:36	-0.75	4/6/2005 21:36	1.55	4/7/2005 3:36	-0.09
4/6/2005 15:42	-0.88	4/6/2005 21:42	1.69	4/7/2005 3:42	-0.25
4/6/2005 15:48	-1.02	4/6/2005 21:48	1.80	4/7/2005 3:48	-0.39
4/6/2005 15:54	-1.16	4/6/2005 21:54	1.94	4/7/2005 3:54	-0.53
4/6/2005 16:00	-1.27	4/6/2005 22:00	2.05	4/7/2005 4:00	-0.66
4/6/2005 16:06	-1.39	4/6/2005 22:06	2.14	4/7/2005 4:06	-0.80
4/6/2005 16:12	-1.52	4/6/2005 22:12	2.23	4/7/2005 4:12	-0.93
4/6/2005 16:18	-1.61	4/6/2005 22:18	2.32	4/7/2005 4:18	-1.07
4/6/2005 16:24	-1.75	4/6/2005 22:24	2.39	4/7/2005 4:24	-1.18
4/6/2005 16:30	-1.84	4/6/2005 22:30	2.46	4/7/2005 4:30	-1.31
4/6/2005 16:36	-1.98	4/6/2005 22:36	2.53	4/7/2005 4:36	-1.45
4/6/2005 16:42	-2.12	4/6/2005 22:42	2.62	4/7/2005 4:42	-1.55
4/6/2005 16:48	-2.23	4/6/2005 22:48	2.67	4/7/2005 4:48	-1.67
4/6/2005 16:54	-2.36	4/6/2005 22:54	2.74	4/7/2005 4:54	-1.77
4/6/2005 17:00	-2.48	4/6/2005 23:00	2.80	4/7/2005 5:00	-1.89
4/6/2005 17:06	-2.59	4/6/2005 23:06	2.85	4/7/2005 5:06	-2.00
4/6/2005 17:12	-2.70	4/6/2005 23:12	2.89	4/7/2005 5:12	-2.11
4/6/2005 17:18	-2.82	4/6/2005 23:18	2.94	4/7/2005 5:18	-2.22
4/6/2005 17:24	-2.93	4/6/2005 23:24	2.99	4/7/2005 5:24	-2.35
4/6/2005 17:30	-3.04	4/6/2005 23:30	3.01	4/7/2005 5:30	-2.44

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/7/2005 5:36	-2.56	4/7/2005 11:36	3.14	4/7/2005 17:36	-2.42
4/7/2005 5:42	-2.63	4/7/2005 11:42	3.17	4/7/2005 17:42	-2.53
4/7/2005 5:48	-2.72	4/7/2005 11:48	3.22	4/7/2005 17:48	-2.63
4/7/2005 5:54	-2.80	4/7/2005 11:54	3.21	4/7/2005 17:54	-2.74
4/7/2005 6:00	-2.89	4/7/2005 12:00	3.24	4/7/2005 18:00	-2.85
4/7/2005 6:06	-2.96	4/7/2005 12:06	3.24	4/7/2005 18:06	-2.96
4/7/2005 6:12	-3.03	4/7/2005 12:12	3.24	4/7/2005 18:12	-3.05
4/7/2005 6:18	-3.09	4/7/2005 12:18	3.24	4/7/2005 18:18	-3.11
4/7/2005 6:24	-3.14	4/7/2005 12:24	3.22	4/7/2005 18:24	-3.18
4/7/2005 6:30	-3.18	4/7/2005 12:30	3.22	4/7/2005 18:30	-3.28
4/7/2005 6:36	-3.21	4/7/2005 12:36	3.20	4/7/2005 18:36	-3.39
4/7/2005 6:42	-3.23	4/7/2005 12:42	3.18	4/7/2005 18:42	-3.43
4/7/2005 6:48	-3.21	4/7/2005 12:48	3.16	4/7/2005 18:48	-3.50
4/7/2005 6:54	-3.16	4/7/2005 12:54	3.14	4/7/2005 18:54	-3.51
4/7/2005 7:00	-3.11	4/7/2005 13:00	3.09	4/7/2005 19:00	-3.53
4/7/2005 7:06	-3.04	4/7/2005 13:06	3.07	4/7/2005 19:06	-3.53
4/7/2005 7:12	-2.95	4/7/2005 13:12	3.00	4/7/2005 19:12	-3.49
4/7/2005 7:18	-2.83	4/7/2005 13:18	2.96	4/7/2005 19:18	-3.46
4/7/2005 7:24	-2.71	4/7/2005 13:24	2.89	4/7/2005 19:24	-3.39
4/7/2005 7:30	-2.58	4/7/2005 13:30	2.82	4/7/2005 19:30	-3.33
4/7/2005 7:36	-2.42	4/7/2005 13:36	2.73	4/7/2005 19:36	-3.24
4/7/2005 7:42	-2.25	4/7/2005 13:42	2.67	4/7/2005 19:42	-3.14
4/7/2005 7:48	-2.07	4/7/2005 13:48	2.55	4/7/2005 19:48	-3.00
4/7/2005 7:54	-1.88	4/7/2005 13:54	2.46	4/7/2005 19:54	-2.84
4/7/2005 8:00	-1.68	4/7/2005 14:00	2.37	4/7/2005 20:00	-2.68
4/7/2005 8:06	-1.47	4/7/2005 14:06	2.28	4/7/2005 20:06	-2.47
4/7/2005 8:12	-1.29	4/7/2005 14:12	2.19	4/7/2005 20:12	-2.31
4/7/2005 8:18	-1.08	4/7/2005 14:18	2.06	4/7/2005 20:18	-2.10
4/7/2005 8:24	-0.87	4/7/2005 14:24	1.97	4/7/2005 20:24	-1.92
4/7/2005 8:30	-0.69	4/7/2005 14:30	1.86	4/7/2005 20:30	-1.71
4/7/2005 8:36	-0.51	4/7/2005 14:36	1.72	4/7/2005 20:36	-1.50
4/7/2005 8:42	-0.32	4/7/2005 14:42	1.59	4/7/2005 20:42	-1.32
4/7/2005 8:48	-0.13	4/7/2005 14:48	1.46	4/7/2005 20:48	-1.09
4/7/2005 8:54	0.05	4/7/2005 14:54	1.32	4/7/2005 20:54	-0.89
4/7/2005 9:00	0.21	4/7/2005 15:00	1.18	4/7/2005 21:00	-0.69
4/7/2005 9:06	0.39	4/7/2005 15:06	1.04	4/7/2005 21:06	-0.51
4/7/2005 9:12	0.58	4/7/2005 15:12	0.92	4/7/2005 21:12	-0.30
4/7/2005 9:18	0.74	4/7/2005 15:18	0.76	4/7/2005 21:18	-0.12
4/7/2005 9:24	0.92	4/7/2005 15:24	0.63	4/7/2005 21:24	0.09
4/7/2005 9:30	1.08	4/7/2005 15:30	0.49	4/7/2005 21:30	0.24
4/7/2005 9:36	1.23	4/7/2005 15:36	0.34	4/7/2005 21:36	0.43
4/7/2005 9:42	1.41	4/7/2005 15:42	0.16	4/7/2005 21:42	0.61
4/7/2005 9:48	1.55	4/7/2005 15:48	0.00	4/7/2005 21:48	0.80
4/7/2005 9:54	1.69	4/7/2005 15:54	-0.16	4/7/2005 21:54	0.96
4/7/2005 10:00	1.83	4/7/2005 16:00	-0.29	4/7/2005 22:00	1.12
4/7/2005 10:06	1.94	4/7/2005 16:06	-0.44	4/7/2005 22:06	1.27
4/7/2005 10:12	2.08	4/7/2005 16:12	-0.60	4/7/2005 22:12	1.43
4/7/2005 10:18	2.20	4/7/2005 16:18	-0.75	4/7/2005 22:18	1.59
4/7/2005 10:24	2.31	4/7/2005 16:24	-0.88	4/7/2005 22:24	1.71
4/7/2005 10:30	2.40	4/7/2005 16:30	-1.04	4/7/2005 22:30	1.85
4/7/2005 10:36	2.49	4/7/2005 16:36	-1.18	4/7/2005 22:36	1.95
4/7/2005 10:42	2.59	4/7/2005 16:42	-1.31	4/7/2005 22:42	2.07
4/7/2005 10:48	2.67	4/7/2005 16:48	-1.46	4/7/2005 22:48	2.16
4/7/2005 10:54	2.74	4/7/2005 16:54	-1.57	4/7/2005 22:54	2.31
4/7/2005 11:00	2.81	4/7/2005 17:00	-1.71	4/7/2005 23:00	2.38
4/7/2005 11:06	2.90	4/7/2005 17:06	-1.82	4/7/2005 23:06	2.47
4/7/2005 11:12	2.94	4/7/2005 17:12	-1.93	4/7/2005 23:12	2.54
4/7/2005 11:18	2.99	4/7/2005 17:18	-2.07	4/7/2005 23:18	2.61
4/7/2005 11:24	3.06	4/7/2005 17:24	-2.18	4/7/2005 23:24	2.68
4/7/2005 11:30	3.08	4/7/2005 17:30	-2.31	4/7/2005 23:30	2.77

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/7/2005 23:36	2.84	4/8/2005 5:36	-1.72	4/8/2005 11:36	2.31
4/7/2005 23:42	2.91	4/8/2005 5:42	-1.81	4/8/2005 11:42	2.38
4/7/2005 23:48	2.96	4/8/2005 5:48	-1.94	4/8/2005 11:48	2.47
4/7/2005 23:54	2.98	4/8/2005 5:54	-2.04	4/8/2005 11:54	2.54
4/8/2005 0:00	3.07	4/8/2005 6:00	-2.18	4/8/2005 12:00	2.60
4/8/2005 0:06	3.11	4/8/2005 6:06	-2.32	4/8/2005 12:06	2.67
4/8/2005 0:12	3.14	4/8/2005 6:12	-2.44	4/8/2005 12:12	2.72
4/8/2005 0:18	3.18	4/8/2005 6:18	-2.55	4/8/2005 12:18	2.76
4/8/2005 0:24	3.22	4/8/2005 6:24	-2.67	4/8/2005 12:24	2.80
4/8/2005 0:30	3.26	4/8/2005 6:30	-2.78	4/8/2005 12:30	2.84
4/8/2005 0:36	3.29	4/8/2005 6:36	-2.89	4/8/2005 12:36	2.88
4/8/2005 0:42	3.33	4/8/2005 6:42	-2.98	4/8/2005 12:42	2.93
4/8/2005 0:48	3.35	4/8/2005 6:48	-3.07	4/8/2005 12:48	2.93
4/8/2005 0:54	3.35	4/8/2005 6:54	-3.16	4/8/2005 12:54	2.95
4/8/2005 1:00	3.38	4/8/2005 7:00	-3.23	4/8/2005 13:00	2.97
4/8/2005 1:06	3.40	4/8/2005 7:06	-3.30	4/8/2005 13:06	2.97
4/8/2005 1:12	3.40	4/8/2005 7:12	-3.38	4/8/2005 13:12	2.99
4/8/2005 1:18	3.37	4/8/2005 7:18	-3.48	4/8/2005 13:18	2.98
4/8/2005 1:24	3.39	4/8/2005 7:24	-3.52	4/8/2005 13:24	2.98
4/8/2005 1:30	3.37	4/8/2005 7:30	-3.57	4/8/2005 13:30	2.98
4/8/2005 1:36	3.34	4/8/2005 7:36	-3.59	4/8/2005 13:36	2.98
4/8/2005 1:42	3.30	4/8/2005 7:42	-3.59	4/8/2005 13:42	2.93
4/8/2005 1:48	3.28	4/8/2005 7:48	-3.55	4/8/2005 13:48	2.90
4/8/2005 1:54	3.21	4/8/2005 7:54	-3.48	4/8/2005 13:54	2.90
4/8/2005 2:00	3.17	4/8/2005 8:00	-3.38	4/8/2005 14:00	2.87
4/8/2005 2:06	3.10	4/8/2005 8:06	-3.30	4/8/2005 14:06	2.83
4/8/2005 2:12	3.00	4/8/2005 8:12	-3.21	4/8/2005 14:12	2.78
4/8/2005 2:18	2.89	4/8/2005 8:18	-3.03	4/8/2005 14:18	2.73
4/8/2005 2:24	2.80	4/8/2005 8:24	-2.90	4/8/2005 14:24	2.66
4/8/2005 2:30	2.66	4/8/2005 8:30	-2.74	4/8/2005 14:30	2.59
4/8/2005 2:36	2.52	4/8/2005 8:36	-2.56	4/8/2005 14:36	2.50
4/8/2005 2:42	2.38	4/8/2005 8:42	-2.36	4/8/2005 14:42	2.42
4/8/2005 2:48	2.27	4/8/2005 8:48	-2.18	4/8/2005 14:48	2.31
4/8/2005 2:54	2.11	4/8/2005 8:54	-1.97	4/8/2005 14:54	2.19
4/8/2005 3:00	1.97	4/8/2005 9:00	-1.75	4/8/2005 15:00	2.08
4/8/2005 3:06	1.84	4/8/2005 9:06	-1.54	4/8/2005 15:06	1.96
4/8/2005 3:12	1.71	4/8/2005 9:12	-1.36	4/8/2005 15:12	1.82
4/8/2005 3:18	1.59	4/8/2005 9:18	-1.14	4/8/2005 15:18	1.71
4/8/2005 3:24	1.44	4/8/2005 9:24	-0.96	4/8/2005 15:24	1.57
4/8/2005 3:30	1.30	4/8/2005 9:30	-0.80	4/8/2005 15:30	1.43
4/8/2005 3:36	1.13	4/8/2005 9:36	-0.62	4/8/2005 15:36	1.29
4/8/2005 3:42	0.98	4/8/2005 9:42	-0.44	4/8/2005 15:42	1.15
4/8/2005 3:48	0.84	4/8/2005 9:48	-0.24	4/8/2005 15:48	0.99
4/8/2005 3:54	0.66	4/8/2005 9:54	-0.08	4/8/2005 15:54	0.86
4/8/2005 4:00	0.52	4/8/2005 10:00	0.11	4/8/2005 16:00	0.72
4/8/2005 4:06	0.34	4/8/2005 10:06	0.29	4/8/2005 16:06	0.56
4/8/2005 4:12	0.20	4/8/2005 10:12	0.44	4/8/2005 16:12	0.40
4/8/2005 4:18	0.04	4/8/2005 10:18	0.60	4/8/2005 16:18	0.25
4/8/2005 4:24	-0.11	4/8/2005 10:24	0.78	4/8/2005 16:24	0.07
4/8/2005 4:30	-0.26	4/8/2005 10:30	0.94	4/8/2005 16:30	-0.11
4/8/2005 4:36	-0.43	4/8/2005 10:36	1.10	4/8/2005 16:36	-0.28
4/8/2005 4:42	-0.56	4/8/2005 10:42	1.26	4/8/2005 16:42	-0.41
4/8/2005 4:48	-0.72	4/8/2005 10:48	1.39	4/8/2005 16:48	-0.59
4/8/2005 4:54	-0.85	4/8/2005 10:54	1.54	4/8/2005 16:54	-0.75
4/8/2005 5:00	-0.99	4/8/2005 11:00	1.67	4/8/2005 17:00	-0.91
4/8/2005 5:06	-1.12	4/8/2005 11:06	1.78	4/8/2005 17:06	-1.07
4/8/2005 5:12	-1.24	4/8/2005 11:12	1.89	4/8/2005 17:12	-1.24
4/8/2005 5:18	-1.35	4/8/2005 11:18	2.03	4/8/2005 17:18	-1.40
4/8/2005 5:24	-1.49	4/8/2005 11:24	2.12	4/8/2005 17:24	-1.53
4/8/2005 5:30	-1.58	4/8/2005 11:30	2.23	4/8/2005 17:30	-1.69

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/8/2005 17:36	-1.83	4/8/2005 23:36	2.47	4/9/2005 5:36	-0.89
4/8/2005 17:42	-1.96	4/8/2005 23:42	2.56	4/9/2005 5:42	-1.03
4/8/2005 17:48	-2.11	4/8/2005 23:48	2.65	4/9/2005 5:48	-1.12
4/8/2005 17:54	-2.25	4/8/2005 23:54	2.74	4/9/2005 5:54	-1.25
4/8/2005 18:00	-2.36	4/9/2005 0:00	2.82	4/9/2005 6:00	-1.37
4/8/2005 18:06	-2.50	4/9/2005 0:06	2.89	4/9/2005 6:06	-1.48
4/8/2005 18:12	-2.63	4/9/2005 0:12	2.98	4/9/2005 6:12	-1.59
4/8/2005 18:18	-2.77	4/9/2005 0:18	3.04	4/9/2005 6:18	-1.70
4/8/2005 18:24	-2.90	4/9/2005 0:24	3.11	4/9/2005 6:24	-1.81
4/8/2005 18:30	-3.02	4/9/2005 0:30	3.15	4/9/2005 6:30	-1.93
4/8/2005 18:36	-3.16	4/9/2005 0:36	3.19	4/9/2005 6:36	-2.05
4/8/2005 18:42	-3.27	4/9/2005 0:42	3.23	4/9/2005 6:42	-2.16
4/8/2005 18:48	-3.38	4/9/2005 0:48	3.27	4/9/2005 6:48	-2.27
4/8/2005 18:54	-3.47	4/9/2005 0:54	3.31	4/9/2005 6:54	-2.39
4/8/2005 19:00	-3.60	4/9/2005 1:00	3.34	4/9/2005 7:00	-2.53
4/8/2005 19:06	-3.67	4/9/2005 1:06	3.38	4/9/2005 7:06	-2.62
4/8/2005 19:12	-3.79	4/9/2005 1:12	3.39	4/9/2005 7:12	-2.76
4/8/2005 19:18	-3.88	4/9/2005 1:18	3.39	4/9/2005 7:18	-2.87
4/8/2005 19:24	-3.97	4/9/2005 1:24	3.41	4/9/2005 7:24	-2.98
4/8/2005 19:30	-4.01	4/9/2005 1:30	3.43	4/9/2005 7:30	-3.08
4/8/2005 19:36	-4.05	4/9/2005 1:36	3.45	4/9/2005 7:36	-3.20
4/8/2005 19:42	-4.10	4/9/2005 1:42	3.45	4/9/2005 7:42	-3.31
4/8/2005 19:48	-4.10	4/9/2005 1:48	3.44	4/9/2005 7:48	-3.38
4/8/2005 19:54	-4.09	4/9/2005 1:54	3.42	4/9/2005 7:54	-3.47
4/8/2005 20:00	-4.05	4/9/2005 2:00	3.40	4/9/2005 8:00	-3.56
4/8/2005 20:06	-3.99	4/9/2005 2:06	3.37	4/9/2005 8:06	-3.61
4/8/2005 20:12	-3.91	4/9/2005 2:12	3.35	4/9/2005 8:12	-3.68
4/8/2005 20:18	-3.83	4/9/2005 2:18	3.31	4/9/2005 8:18	-3.72
4/8/2005 20:24	-3.69	4/9/2005 2:24	3.26	4/9/2005 8:24	-3.75
4/8/2005 20:30	-3.56	4/9/2005 2:30	3.20	4/9/2005 8:30	-3.77
4/8/2005 20:36	-3.38	4/9/2005 2:36	3.12	4/9/2005 8:36	-3.77
4/8/2005 20:42	-3.19	4/9/2005 2:42	3.06	4/9/2005 8:42	-3.75
4/8/2005 20:48	-2.99	4/9/2005 2:48	2.94	4/9/2005 8:48	-3.68
4/8/2005 20:54	-2.76	4/9/2005 2:54	2.85	4/9/2005 8:54	-3.61
4/8/2005 21:00	-2.53	4/9/2005 3:00	2.76	4/9/2005 9:00	-3.52
4/8/2005 21:06	-2.31	4/9/2005 3:06	2.62	4/9/2005 9:06	-3.38
4/8/2005 21:12	-2.04	4/9/2005 3:12	2.50	4/9/2005 9:12	-3.27
4/8/2005 21:18	-1.81	4/9/2005 3:18	2.36	4/9/2005 9:18	-3.13
4/8/2005 21:24	-1.56	4/9/2005 3:24	2.22	4/9/2005 9:24	-2.98
4/8/2005 21:30	-1.31	4/9/2005 3:30	2.07	4/9/2005 9:30	-2.82
4/8/2005 21:36	-1.09	4/9/2005 3:36	1.95	4/9/2005 9:36	-2.64
4/8/2005 21:42	-0.86	4/9/2005 3:42	1.82	4/9/2005 9:42	-2.42
4/8/2005 21:48	-0.63	4/9/2005 3:48	1.68	4/9/2005 9:48	-2.22
4/8/2005 21:54	-0.42	4/9/2005 3:54	1.54	4/9/2005 9:54	-2.01
4/8/2005 22:00	-0.22	4/9/2005 4:00	1.38	4/9/2005 10:00	-1.78
4/8/2005 22:06	0.01	4/9/2005 4:06	1.26	4/9/2005 10:06	-1.58
4/8/2005 22:12	0.20	4/9/2005 4:12	1.13	4/9/2005 10:12	-1.36
4/8/2005 22:18	0.40	4/9/2005 4:18	0.98	4/9/2005 10:18	-1.13
4/8/2005 22:24	0.59	4/9/2005 4:24	0.83	4/9/2005 10:24	-0.93
4/8/2005 22:30	0.79	4/9/2005 4:30	0.67	4/9/2005 10:30	-0.73
4/8/2005 22:36	0.98	4/9/2005 4:36	0.53	4/9/2005 10:36	-0.53
4/8/2005 22:42	1.14	4/9/2005 4:42	0.37	4/9/2005 10:42	-0.33
4/8/2005 22:48	1.32	4/9/2005 4:48	0.21	4/9/2005 10:48	-0.13
4/8/2005 22:54	1.50	4/9/2005 4:54	0.07	4/9/2005 10:54	0.03
4/8/2005 23:00	1.66	4/9/2005 5:00	-0.06	4/9/2005 11:00	0.23
4/8/2005 23:06	1.84	4/9/2005 5:06	-0.23	4/9/2005 11:06	0.41
4/8/2005 23:12	1.98	4/9/2005 5:12	-0.36	4/9/2005 11:12	0.59
4/8/2005 23:18	2.11	4/9/2005 5:18	-0.50	4/9/2005 11:18	0.77
4/8/2005 23:24	2.25	4/9/2005 5:24	-0.61	4/9/2005 11:24	0.92
4/8/2005 23:30	2.34	4/9/2005 5:30	-0.75	4/9/2005 11:30	1.11

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/9/2005 11:36	1.26	4/9/2005 17:36	-0.93	4/9/2005 23:36	1.72
4/9/2005 11:42	1.42	4/9/2005 17:42	-1.06	4/9/2005 23:42	1.83
4/9/2005 11:48	1.55	4/9/2005 17:48	-1.20	4/9/2005 23:48	1.95
4/9/2005 11:54	1.68	4/9/2005 17:54	-1.35	4/9/2005 23:54	2.07
4/9/2005 12:00	1.79	4/9/2005 18:00	-1.46	4/10/2005 0:00	2.16
4/9/2005 12:06	1.94	4/9/2005 18:06	-1.58	4/10/2005 0:06	2.29
4/9/2005 12:12	2.05	4/9/2005 18:12	-1.71	4/10/2005 0:12	2.36
4/9/2005 12:18	2.16	4/9/2005 18:18	-1.83	4/10/2005 0:18	2.45
4/9/2005 12:24	2.25	4/9/2005 18:24	-1.96	4/10/2005 0:24	2.56
4/9/2005 12:30	2.34	4/9/2005 18:30	-2.05	4/10/2005 0:30	2.65
4/9/2005 12:36	2.40	4/9/2005 18:36	-2.15	4/10/2005 0:36	2.74
4/9/2005 12:42	2.50	4/9/2005 18:42	-2.26	4/10/2005 0:42	2.81
4/9/2005 12:48	2.56	4/9/2005 18:48	-2.34	4/10/2005 0:48	2.90
4/9/2005 12:54	2.64	4/9/2005 18:54	-2.41	4/10/2005 0:54	2.97
4/9/2005 13:00	2.70	4/9/2005 19:00	-2.50	4/10/2005 1:00	3.03
4/9/2005 13:06	2.77	4/9/2005 19:06	-2.59	4/10/2005 1:06	3.10
4/9/2005 13:12	2.83	4/9/2005 19:12	-2.68	4/10/2005 1:12	3.19
4/9/2005 13:18	2.88	4/9/2005 19:18	-2.76	4/10/2005 1:18	3.21
4/9/2005 13:24	2.93	4/9/2005 19:24	-2.85	4/10/2005 1:24	3.26
4/9/2005 13:30	2.97	4/9/2005 19:30	-2.92	4/10/2005 1:30	3.30
4/9/2005 13:36	3.01	4/9/2005 19:36	-2.99	4/10/2005 1:36	3.32
4/9/2005 13:42	3.06	4/9/2005 19:42	-3.03	4/10/2005 1:42	3.32
4/9/2005 13:48	3.06	4/9/2005 19:48	-3.08	4/10/2005 1:48	3.39
4/9/2005 13:54	3.05	4/9/2005 19:54	-3.12	4/10/2005 1:54	3.41
4/9/2005 14:00	3.05	4/9/2005 20:00	-3.14	4/10/2005 2:00	3.43
4/9/2005 14:06	3.05	4/9/2005 20:06	-3.16	4/10/2005 2:06	3.45
4/9/2005 14:12	3.05	4/9/2005 20:12	-3.18	4/10/2005 2:12	3.47
4/9/2005 14:18	3.05	4/9/2005 20:18	-3.16	4/10/2005 2:18	3.50
4/9/2005 14:24	3.03	4/9/2005 20:24	-3.13	4/10/2005 2:24	3.50
4/9/2005 14:30	2.98	4/9/2005 20:30	-3.11	4/10/2005 2:30	3.52
4/9/2005 14:36	2.95	4/9/2005 20:36	-3.07	4/10/2005 2:36	3.54
4/9/2005 14:42	2.91	4/9/2005 20:42	-2.98	4/10/2005 2:42	3.54
4/9/2005 14:48	2.86	4/9/2005 20:48	-2.91	4/10/2005 2:48	3.52
4/9/2005 14:54	2.82	4/9/2005 20:54	-2.84	4/10/2005 2:54	3.50
4/9/2005 15:00	2.72	4/9/2005 21:00	-2.72	4/10/2005 3:00	3.47
4/9/2005 15:06	2.61	4/9/2005 21:06	-2.60	4/10/2005 3:06	3.45
4/9/2005 15:12	2.52	4/9/2005 21:12	-2.44	4/10/2005 3:12	3.41
4/9/2005 15:18	2.40	4/9/2005 21:18	-2.30	4/10/2005 3:18	3.34
4/9/2005 15:24	2.29	4/9/2005 21:24	-2.14	4/10/2005 3:24	3.27
4/9/2005 15:30	2.17	4/9/2005 21:30	-1.96	4/10/2005 3:30	3.23
4/9/2005 15:36	2.03	4/9/2005 21:36	-1.78	4/10/2005 3:36	3.13
4/9/2005 15:42	1.90	4/9/2005 21:42	-1.59	4/10/2005 3:42	3.02
4/9/2005 15:48	1.76	4/9/2005 21:48	-1.39	4/10/2005 3:48	2.93
4/9/2005 15:54	1.63	4/9/2005 21:54	-1.19	4/10/2005 3:54	2.82
4/9/2005 16:00	1.47	4/9/2005 22:00	-1.00	4/10/2005 4:00	2.70
4/9/2005 16:06	1.31	4/9/2005 22:06	-0.80	4/10/2005 4:06	2.57
4/9/2005 16:12	1.17	4/9/2005 22:12	-0.60	4/10/2005 4:12	2.43
4/9/2005 16:18	1.04	4/9/2005 22:18	-0.42	4/10/2005 4:18	2.29
4/9/2005 16:24	0.89	4/9/2005 22:24	-0.21	4/10/2005 4:24	2.18
4/9/2005 16:30	0.75	4/9/2005 22:30	-0.03	4/10/2005 4:30	2.04
4/9/2005 16:36	0.58	4/9/2005 22:36	0.15	4/10/2005 4:36	1.91
4/9/2005 16:42	0.43	4/9/2005 22:42	0.34	4/10/2005 4:42	1.77
4/9/2005 16:48	0.27	4/9/2005 22:48	0.52	4/10/2005 4:48	1.64
4/9/2005 16:54	0.14	4/9/2005 22:54	0.69	4/10/2005 4:54	1.50
4/9/2005 17:00	-0.02	4/9/2005 23:00	0.85	4/10/2005 5:00	1.37
4/9/2005 17:06	-0.18	4/9/2005 23:06	1.03	4/10/2005 5:06	1.21
4/9/2005 17:12	-0.34	4/9/2005 23:12	1.16	4/10/2005 5:12	1.05
4/9/2005 17:18	-0.50	4/9/2005 23:18	1.32	4/10/2005 5:18	0.89
4/9/2005 17:24	-0.63	4/9/2005 23:24	1.46	4/10/2005 5:24	0.71
4/9/2005 17:30	-0.79	4/9/2005 23:30	1.59	4/10/2005 5:30	0.55

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/10/2005 5:36	0.39	4/10/2005 11:36	0.53	4/10/2005 17:36	0.07
4/10/2005 5:42	0.26	4/10/2005 11:42	0.69	4/10/2005 17:42	-0.08
4/10/2005 5:48	0.10	4/10/2005 11:48	0.85	4/10/2005 17:48	-0.22
4/10/2005 5:54	-0.08	4/10/2005 11:54	0.99	4/10/2005 17:54	-0.37
4/10/2005 6:00	-0.23	4/10/2005 12:00	1.15	4/10/2005 18:00	-0.51
4/10/2005 6:06	-0.37	4/10/2005 12:06	1.28	4/10/2005 18:06	-0.64
4/10/2005 6:12	-0.52	4/10/2005 12:12	1.42	4/10/2005 18:12	-0.78
4/10/2005 6:18	-0.68	4/10/2005 12:18	1.54	4/10/2005 18:18	-0.91
4/10/2005 6:24	-0.84	4/10/2005 12:24	1.65	4/10/2005 18:24	-1.04
4/10/2005 6:30	-0.97	4/10/2005 12:30	1.77	4/10/2005 18:30	-1.18
4/10/2005 6:36	-1.11	4/10/2005 12:36	1.88	4/10/2005 18:36	-1.30
4/10/2005 6:42	-1.22	4/10/2005 12:42	1.97	4/10/2005 18:42	-1.40
4/10/2005 6:48	-1.35	4/10/2005 12:48	2.04	4/10/2005 18:48	-1.56
4/10/2005 6:54	-1.46	4/10/2005 12:54	2.13	4/10/2005 18:54	-1.65
4/10/2005 7:00	-1.60	4/10/2005 13:00	2.20	4/10/2005 19:00	-1.78
4/10/2005 7:06	-1.69	4/10/2005 13:06	2.27	4/10/2005 19:06	-1.88
4/10/2005 7:12	-1.82	4/10/2005 13:12	2.33	4/10/2005 19:12	-1.99
4/10/2005 7:18	-1.94	4/10/2005 13:18	2.40	4/10/2005 19:18	-2.08
4/10/2005 7:24	-2.05	4/10/2005 13:24	2.45	4/10/2005 19:24	-2.14
4/10/2005 7:30	-2.18	4/10/2005 13:30	2.50	4/10/2005 19:30	-2.23
4/10/2005 7:36	-2.29	4/10/2005 13:36	2.56	4/10/2005 19:36	-2.32
4/10/2005 7:42	-2.40	4/10/2005 13:42	2.59	4/10/2005 19:42	-2.39
4/10/2005 7:48	-2.54	4/10/2005 13:48	2.63	4/10/2005 19:48	-2.48
4/10/2005 7:54	-2.64	4/10/2005 13:54	2.68	4/10/2005 19:54	-2.55
4/10/2005 8:00	-2.72	4/10/2005 14:00	2.73	4/10/2005 20:00	-2.64
4/10/2005 8:06	-2.82	4/10/2005 14:06	2.73	4/10/2005 20:06	-2.73
4/10/2005 8:12	-2.93	4/10/2005 14:12	2.75	4/10/2005 20:12	-2.79
4/10/2005 8:18	-3.02	4/10/2005 14:18	2.77	4/10/2005 20:18	-2.88
4/10/2005 8:24	-3.08	4/10/2005 14:24	2.80	4/10/2005 20:24	-2.95
4/10/2005 8:30	-3.17	4/10/2005 14:30	2.80	4/10/2005 20:30	-2.98
4/10/2005 8:36	-3.27	4/10/2005 14:36	2.80	4/10/2005 20:36	-3.04
4/10/2005 8:42	-3.33	4/10/2005 14:42	2.80	4/10/2005 20:42	-3.11
4/10/2005 8:48	-3.38	4/10/2005 14:48	2.80	4/10/2005 20:48	-3.15
4/10/2005 8:54	-3.44	4/10/2005 14:54	2.78	4/10/2005 20:54	-3.18
4/10/2005 9:00	-3.44	4/10/2005 15:00	2.76	4/10/2005 21:00	-3.20
4/10/2005 9:06	-3.46	4/10/2005 15:06	2.74	4/10/2005 21:06	-3.18
4/10/2005 9:12	-3.43	4/10/2005 15:12	2.72	4/10/2005 21:12	-3.18
4/10/2005 9:18	-3.41	4/10/2005 15:18	2.68	4/10/2005 21:18	-3.13
4/10/2005 9:24	-3.37	4/10/2005 15:24	2.66	4/10/2005 21:24	-3.08
4/10/2005 9:30	-3.27	4/10/2005 15:30	2.59	4/10/2005 21:30	-3.02
4/10/2005 9:36	-3.17	4/10/2005 15:36	2.52	4/10/2005 21:36	-2.95
4/10/2005 9:42	-3.03	4/10/2005 15:42	2.45	4/10/2005 21:42	-2.86
4/10/2005 9:48	-2.87	4/10/2005 15:48	2.39	4/10/2005 21:48	-2.75
4/10/2005 9:54	-2.71	4/10/2005 15:54	2.30	4/10/2005 21:54	-2.63
4/10/2005 10:00	-2.55	4/10/2005 16:00	2.21	4/10/2005 22:00	-2.50
4/10/2005 10:06	-2.35	4/10/2005 16:06	2.10	4/10/2005 22:06	-2.34
4/10/2005 10:12	-2.17	4/10/2005 16:12	2.01	4/10/2005 22:12	-2.18
4/10/2005 10:18	-1.95	4/10/2005 16:18	1.86	4/10/2005 22:18	-1.99
4/10/2005 10:24	-1.72	4/10/2005 16:24	1.74	4/10/2005 22:24	-1.83
4/10/2005 10:30	-1.54	4/10/2005 16:30	1.63	4/10/2005 22:30	-1.65
4/10/2005 10:36	-1.34	4/10/2005 16:36	1.49	4/10/2005 22:36	-1.47
4/10/2005 10:42	-1.13	4/10/2005 16:42	1.36	4/10/2005 22:42	-1.26
4/10/2005 10:48	-0.90	4/10/2005 16:48	1.22	4/10/2005 22:48	-1.08
4/10/2005 10:54	-0.72	4/10/2005 16:54	1.09	4/10/2005 22:54	-0.89
4/10/2005 11:00	-0.52	4/10/2005 17:00	0.96	4/10/2005 23:00	-0.71
4/10/2005 11:06	-0.34	4/10/2005 17:06	0.82	4/10/2005 23:06	-0.53
4/10/2005 11:12	-0.15	4/10/2005 17:12	0.67	4/10/2005 23:12	-0.32
4/10/2005 11:18	0.01	4/10/2005 17:18	0.51	4/10/2005 23:18	-0.14
4/10/2005 11:24	0.19	4/10/2005 17:24	0.37	4/10/2005 23:24	0.04
4/10/2005 11:30	0.37	4/10/2005 17:30	0.21	4/10/2005 23:30	0.24

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/10/2005 23:36	0.42	4/11/2005 5:36	1.18	4/11/2005 11:36	-0.42
4/10/2005 23:42	0.61	4/11/2005 5:42	1.07	4/11/2005 11:42	-0.26
4/10/2005 23:48	0.79	4/11/2005 5:48	0.93	4/11/2005 11:48	-0.08
4/10/2005 23:54	0.95	4/11/2005 5:54	0.77	4/11/2005 11:54	0.08
4/11/2005 0:00	1.11	4/11/2005 6:00	0.61	4/11/2005 12:00	0.24
4/11/2005 0:06	1.27	4/11/2005 6:06	0.47	4/11/2005 12:06	0.38
4/11/2005 0:12	1.43	4/11/2005 6:12	0.31	4/11/2005 12:12	0.51
4/11/2005 0:18	1.58	4/11/2005 6:18	0.17	4/11/2005 12:18	0.62
4/11/2005 0:24	1.74	4/11/2005 6:24	0.01	4/11/2005 12:24	0.76
4/11/2005 0:30	1.90	4/11/2005 6:30	-0.12	4/11/2005 12:30	0.85
4/11/2005 0:36	2.01	4/11/2005 6:36	-0.26	4/11/2005 12:36	0.96
4/11/2005 0:42	2.15	4/11/2005 6:42	-0.42	4/11/2005 12:42	1.05
4/11/2005 0:48	2.23	4/11/2005 6:48	-0.56	4/11/2005 12:48	1.14
4/11/2005 0:54	2.37	4/11/2005 6:54	-0.70	4/11/2005 12:54	1.23
4/11/2005 1:00	2.46	4/11/2005 7:00	-0.86	4/11/2005 13:00	1.32
4/11/2005 1:06	2.52	4/11/2005 7:06	-1.00	4/11/2005 13:06	1.38
4/11/2005 1:12	2.61	4/11/2005 7:12	-1.12	4/11/2005 13:12	1.45
4/11/2005 1:18	2.70	4/11/2005 7:18	-1.25	4/11/2005 13:18	1.51
4/11/2005 1:24	2.79	4/11/2005 7:24	-1.35	4/11/2005 13:24	1.58
4/11/2005 1:30	2.88	4/11/2005 7:30	-1.46	4/11/2005 13:30	1.64
4/11/2005 1:36	2.93	4/11/2005 7:36	-1.55	4/11/2005 13:36	1.71
4/11/2005 1:42	2.99	4/11/2005 7:42	-1.66	4/11/2005 13:42	1.76
4/11/2005 1:48	3.04	4/11/2005 7:48	-1.80	4/11/2005 13:48	1.80
4/11/2005 1:54	3.10	4/11/2005 7:54	-1.92	4/11/2005 13:54	1.88
4/11/2005 2:00	3.17	4/11/2005 8:00	-2.04	4/11/2005 14:00	1.94
4/11/2005 2:06	3.20	4/11/2005 8:06	-2.15	4/11/2005 14:06	2.01
4/11/2005 2:12	3.24	4/11/2005 8:12	-2.27	4/11/2005 14:12	2.08
4/11/2005 2:18	3.27	4/11/2005 8:18	-2.38	4/11/2005 14:18	2.12
4/11/2005 2:24	3.29	4/11/2005 8:24	-2.47	4/11/2005 14:24	2.19
4/11/2005 2:30	3.33	4/11/2005 8:30	-2.57	4/11/2005 14:30	2.26
4/11/2005 2:36	3.33	4/11/2005 8:36	-2.67	4/11/2005 14:36	2.33
4/11/2005 2:42	3.35	4/11/2005 8:42	-2.78	4/11/2005 14:42	2.40
4/11/2005 2:48	3.35	4/11/2005 8:48	-2.85	4/11/2005 14:48	2.47
4/11/2005 2:54	3.38	4/11/2005 8:54	-2.94	4/11/2005 14:54	2.54
4/11/2005 3:00	3.36	4/11/2005 9:00	-3.02	4/11/2005 15:00	2.61
4/11/2005 3:06	3.38	4/11/2005 9:06	-3.09	4/11/2005 15:06	2.64
4/11/2005 3:12	3.38	4/11/2005 9:12	-3.13	4/11/2005 15:12	2.70
4/11/2005 3:18	3.35	4/11/2005 9:18	-3.16	4/11/2005 15:18	2.75
4/11/2005 3:24	3.33	4/11/2005 9:24	-3.19	4/11/2005 15:24	2.78
4/11/2005 3:30	3.32	4/11/2005 9:30	-3.22	4/11/2005 15:30	2.82
4/11/2005 3:36	3.29	4/11/2005 9:36	-3.25	4/11/2005 15:36	2.87
4/11/2005 3:42	3.22	4/11/2005 9:42	-3.23	4/11/2005 15:42	2.87
4/11/2005 3:48	3.18	4/11/2005 9:48	-3.18	4/11/2005 15:48	2.88
4/11/2005 3:54	3.13	4/11/2005 9:54	-3.14	4/11/2005 15:54	2.90
4/11/2005 4:00	3.07	4/11/2005 10:00	-3.10	4/11/2005 16:00	2.90
4/11/2005 4:06	3.01	4/11/2005 10:06	-3.01	4/11/2005 16:06	2.88
4/11/2005 4:12	2.91	4/11/2005 10:12	-2.90	4/11/2005 16:12	2.88
4/11/2005 4:18	2.82	4/11/2005 10:18	-2.77	4/11/2005 16:18	2.83
4/11/2005 4:24	2.71	4/11/2005 10:24	-2.61	4/11/2005 16:24	2.79
4/11/2005 4:30	2.60	4/11/2005 10:30	-2.45	4/11/2005 16:30	2.77
4/11/2005 4:36	2.48	4/11/2005 10:36	-2.30	4/11/2005 16:36	2.72
4/11/2005 4:42	2.34	4/11/2005 10:42	-2.12	4/11/2005 16:42	2.66
4/11/2005 4:48	2.23	4/11/2005 10:48	-1.94	4/11/2005 16:48	2.57
4/11/2005 4:54	2.11	4/11/2005 10:54	-1.71	4/11/2005 16:54	2.51
4/11/2005 5:00	1.97	4/11/2005 11:00	-1.53	4/11/2005 17:00	2.41
4/11/2005 5:06	1.86	4/11/2005 11:06	-1.35	4/11/2005 17:06	2.35
4/11/2005 5:12	1.72	4/11/2005 11:12	-1.17	4/11/2005 17:12	2.23
4/11/2005 5:18	1.60	4/11/2005 11:18	-0.97	4/11/2005 17:18	2.12
4/11/2005 5:24	1.48	4/11/2005 11:24	-0.81	4/11/2005 17:24	1.98
4/11/2005 5:30	1.35	4/11/2005 11:30	-0.61	4/11/2005 17:30	1.87

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/11/2005 17:36	1.73	4/11/2005 23:36	0.01	4/12/2005 5:36	1.94
4/11/2005 17:42	1.60	4/11/2005 23:42	0.19	4/12/2005 5:42	1.81
4/11/2005 17:48	1.46	4/11/2005 23:48	0.35	4/12/2005 5:48	1.70
4/11/2005 17:54	1.35	4/11/2005 23:54	0.51	4/12/2005 5:54	1.57
4/11/2005 18:00	1.19	4/12/2005 0:00	0.66	4/12/2005 6:00	1.44
4/11/2005 18:06	1.06	4/12/2005 0:06	0.79	4/12/2005 6:06	1.30
4/11/2005 18:12	0.92	4/12/2005 0:12	0.95	4/12/2005 6:12	1.16
4/11/2005 18:18	0.79	4/12/2005 0:18	1.08	4/12/2005 6:18	1.05
4/11/2005 18:24	0.63	4/12/2005 0:24	1.24	4/12/2005 6:24	0.91
4/11/2005 18:30	0.45	4/12/2005 0:30	1.37	4/12/2005 6:30	0.76
4/11/2005 18:36	0.31	4/12/2005 0:36	1.49	4/12/2005 6:36	0.62
4/11/2005 18:42	0.14	4/12/2005 0:42	1.62	4/12/2005 6:42	0.49
4/11/2005 18:48	-0.02	4/12/2005 0:48	1.76	4/12/2005 6:48	0.37
4/11/2005 18:54	-0.20	4/12/2005 0:54	1.85	4/12/2005 6:54	0.24
4/11/2005 19:00	-0.33	4/12/2005 1:00	1.96	4/12/2005 7:00	0.08
4/11/2005 19:06	-0.51	4/12/2005 1:06	2.07	4/12/2005 7:06	-0.06
4/11/2005 19:12	-0.67	4/12/2005 1:12	2.15	4/12/2005 7:12	-0.20
4/11/2005 19:18	-0.82	4/12/2005 1:18	2.24	4/12/2005 7:18	-0.28
4/11/2005 19:24	-0.96	4/12/2005 1:24	2.33	4/12/2005 7:24	-0.42
4/11/2005 19:30	-1.09	4/12/2005 1:30	2.40	4/12/2005 7:30	-0.55
4/11/2005 19:36	-1.23	4/12/2005 1:36	2.46	4/12/2005 7:36	-0.67
4/11/2005 19:42	-1.36	4/12/2005 1:42	2.50	4/12/2005 7:42	-0.78
4/11/2005 19:48	-1.50	4/12/2005 1:48	2.57	4/12/2005 7:48	-0.90
4/11/2005 19:54	-1.61	4/12/2005 1:54	2.62	4/12/2005 7:54	-1.01
4/11/2005 20:00	-1.72	4/12/2005 2:00	2.67	4/12/2005 8:00	-1.13
4/11/2005 20:06	-1.80	4/12/2005 2:06	2.71	4/12/2005 8:06	-1.22
4/11/2005 20:12	-1.91	4/12/2005 2:12	2.71	4/12/2005 8:12	-1.33
4/11/2005 20:18	-2.00	4/12/2005 2:18	2.76	4/12/2005 8:18	-1.42
4/11/2005 20:24	-2.10	4/12/2005 2:24	2.79	4/12/2005 8:24	-1.55
4/11/2005 20:30	-2.16	4/12/2005 2:30	2.81	4/12/2005 8:30	-1.66
4/11/2005 20:36	-2.26	4/12/2005 2:36	2.85	4/12/2005 8:36	-1.75
4/11/2005 20:42	-2.30	4/12/2005 2:42	2.85	4/12/2005 8:42	-1.84
4/11/2005 20:48	-2.37	4/12/2005 2:48	2.88	4/12/2005 8:48	-1.95
4/11/2005 20:54	-2.41	4/12/2005 2:54	2.90	4/12/2005 8:54	-2.07
4/11/2005 21:00	-2.48	4/12/2005 3:00	2.90	4/12/2005 9:00	-2.16
4/11/2005 21:06	-2.53	4/12/2005 3:06	2.92	4/12/2005 9:06	-2.25
4/11/2005 21:12	-2.55	4/12/2005 3:12	2.94	4/12/2005 9:12	-2.34
4/11/2005 21:18	-2.58	4/12/2005 3:18	2.94	4/12/2005 9:18	-2.43
4/11/2005 21:24	-2.58	4/12/2005 3:24	2.94	4/12/2005 9:24	-2.52
4/11/2005 21:30	-2.55	4/12/2005 3:30	2.94	4/12/2005 9:30	-2.59
4/11/2005 21:36	-2.56	4/12/2005 3:36	2.98	4/12/2005 9:36	-2.67
4/11/2005 21:42	-2.52	4/12/2005 3:42	3.01	4/12/2005 9:42	-2.73
4/11/2005 21:48	-2.47	4/12/2005 3:48	2.98	4/12/2005 9:48	-2.80
4/11/2005 21:54	-2.43	4/12/2005 3:54	3.00	4/12/2005 9:54	-2.87
4/11/2005 22:00	-2.36	4/12/2005 4:00	3.00	4/12/2005 10:00	-2.89
4/11/2005 22:06	-2.27	4/12/2005 4:06	3.00	4/12/2005 10:06	-2.91
4/11/2005 22:12	-2.16	4/12/2005 4:12	2.97	4/12/2005 10:12	-2.94
4/11/2005 22:18	-2.05	4/12/2005 4:18	2.96	4/12/2005 10:18	-2.94
4/11/2005 22:24	-1.91	4/12/2005 4:24	2.93	4/12/2005 10:24	-2.94
4/11/2005 22:30	-1.75	4/12/2005 4:30	2.89	4/12/2005 10:30	-2.90
4/11/2005 22:36	-1.59	4/12/2005 4:36	2.83	4/12/2005 10:36	-2.88
4/11/2005 22:42	-1.45	4/12/2005 4:42	2.76	4/12/2005 10:42	-2.78
4/11/2005 22:48	-1.29	4/12/2005 4:48	2.69	4/12/2005 10:48	-2.72
4/11/2005 22:54	-1.13	4/12/2005 4:54	2.65	4/12/2005 10:54	-2.63
4/11/2005 23:00	-0.98	4/12/2005 5:00	2.58	4/12/2005 11:00	-2.54
4/11/2005 23:06	-0.82	4/12/2005 5:06	2.49	4/12/2005 11:06	-2.43
4/11/2005 23:12	-0.64	4/12/2005 5:12	2.40	4/12/2005 11:12	-2.28
4/11/2005 23:18	-0.48	4/12/2005 5:18	2.29	4/12/2005 11:18	-2.14
4/11/2005 23:24	-0.33	4/12/2005 5:24	2.18	4/12/2005 11:24	-1.98
4/11/2005 23:30	-0.17	4/12/2005 5:30	2.06	4/12/2005 11:30	-1.85

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/12/2005 11:36	-1.69	4/12/2005 17:36	1.52	4/12/2005 23:36	-1.26
4/12/2005 11:42	-1.53	4/12/2005 17:42	1.41	4/12/2005 23:42	-1.12
4/12/2005 11:48	-1.37	4/12/2005 17:48	1.30	4/12/2005 23:48	-0.96
4/12/2005 11:54	-1.21	4/12/2005 17:54	1.19	4/12/2005 23:54	-0.80
4/12/2005 12:00	-1.05	4/12/2005 18:00	1.08	4/13/2005 0:00	-0.65
4/12/2005 12:06	-0.89	4/12/2005 18:06	0.97	4/13/2005 0:06	-0.47
4/12/2005 12:12	-0.76	4/12/2005 18:12	0.83	4/13/2005 0:12	-0.34
4/12/2005 12:18	-0.62	4/12/2005 18:18	0.70	4/13/2005 0:18	-0.18
4/12/2005 12:24	-0.48	4/12/2005 18:24	0.59	4/13/2005 0:24	-0.01
4/12/2005 12:30	-0.34	4/12/2005 18:30	0.46	4/13/2005 0:30	0.12
4/12/2005 12:36	-0.20	4/12/2005 18:36	0.31	4/13/2005 0:36	0.27
4/12/2005 12:42	-0.08	4/12/2005 18:42	0.21	4/13/2005 0:42	0.41
4/12/2005 12:48	0.06	4/12/2005 18:48	0.08	4/13/2005 0:48	0.55
4/12/2005 12:54	0.19	4/12/2005 18:54	-0.05	4/13/2005 0:54	0.69
4/12/2005 13:00	0.29	4/12/2005 19:00	-0.19	4/13/2005 1:00	0.82
4/12/2005 13:06	0.43	4/12/2005 19:06	-0.32	4/13/2005 1:06	0.95
4/12/2005 13:12	0.51	4/12/2005 19:12	-0.43	4/13/2005 1:12	1.09
4/12/2005 13:18	0.63	4/12/2005 19:18	-0.56	4/13/2005 1:18	1.23
4/12/2005 13:24	0.75	4/12/2005 19:24	-0.69	4/13/2005 1:24	1.34
4/12/2005 13:30	0.82	4/12/2005 19:30	-0.80	4/13/2005 1:30	1.48
4/12/2005 13:36	0.93	4/12/2005 19:36	-0.94	4/13/2005 1:36	1.57
4/12/2005 13:42	1.05	4/12/2005 19:42	-1.04	4/13/2005 1:42	1.66
4/12/2005 13:48	1.13	4/12/2005 19:48	-1.15	4/13/2005 1:48	1.78
4/12/2005 13:54	1.23	4/12/2005 19:54	-1.26	4/13/2005 1:54	1.86
4/12/2005 14:00	1.33	4/12/2005 20:00	-1.34	4/13/2005 2:00	1.93
4/12/2005 14:06	1.41	4/12/2005 20:06	-1.45	4/13/2005 2:06	2.00
4/12/2005 14:12	1.49	4/12/2005 20:12	-1.54	4/13/2005 2:12	2.07
4/12/2005 14:18	1.58	4/12/2005 20:18	-1.63	4/13/2005 2:18	2.16
4/12/2005 14:24	1.65	4/12/2005 20:24	-1.72	4/13/2005 2:24	2.18
4/12/2005 14:30	1.73	4/12/2005 20:30	-1.76	4/13/2005 2:30	2.23
4/12/2005 14:36	1.79	4/12/2005 20:36	-1.81	4/13/2005 2:36	2.27
4/12/2005 14:42	1.84	4/12/2005 20:42	-1.89	4/13/2005 2:42	2.29
4/12/2005 14:48	1.92	4/12/2005 20:48	-1.98	4/13/2005 2:48	2.34
4/12/2005 14:54	1.99	4/12/2005 20:54	-2.00	4/13/2005 2:54	2.39
4/12/2005 15:00	2.04	4/12/2005 21:00	-2.04	4/13/2005 3:00	2.39
4/12/2005 15:06	2.09	4/12/2005 21:06	-2.13	4/13/2005 3:06	2.41
4/12/2005 15:12	2.13	4/12/2005 21:12	-2.17	4/13/2005 3:12	2.46
4/12/2005 15:18	2.16	4/12/2005 21:18	-2.21	4/13/2005 3:18	2.48
4/12/2005 15:24	2.18	4/12/2005 21:24	-2.26	4/13/2005 3:24	2.49
4/12/2005 15:30	2.24	4/12/2005 21:30	-2.30	4/13/2005 3:30	2.48
4/12/2005 15:36	2.24	4/12/2005 21:36	-2.37	4/13/2005 3:36	2.50
4/12/2005 15:42	2.27	4/12/2005 21:42	-2.39	4/13/2005 3:42	2.52
4/12/2005 15:48	2.27	4/12/2005 21:48	-2.43	4/13/2005 3:48	2.52
4/12/2005 15:54	2.31	4/12/2005 21:54	-2.43	4/13/2005 3:54	2.52
4/12/2005 16:00	2.31	4/12/2005 22:00	-2.47	4/13/2005 4:00	2.59
4/12/2005 16:06	2.27	4/12/2005 22:06	-2.49	4/13/2005 4:06	2.59
4/12/2005 16:12	2.29	4/12/2005 22:12	-2.46	4/13/2005 4:12	2.59
4/12/2005 16:18	2.28	4/12/2005 22:18	-2.44	4/13/2005 4:18	2.61
4/12/2005 16:24	2.29	4/12/2005 22:24	-2.42	4/13/2005 4:24	2.61
4/12/2005 16:30	2.25	4/12/2005 22:30	-2.39	4/13/2005 4:30	2.64
4/12/2005 16:36	2.23	4/12/2005 22:36	-2.33	4/13/2005 4:36	2.65
4/12/2005 16:42	2.21	4/12/2005 22:42	-2.25	4/13/2005 4:42	2.66
4/12/2005 16:48	2.15	4/12/2005 22:48	-2.19	4/13/2005 4:48	2.61
4/12/2005 16:54	2.10	4/12/2005 22:54	-2.12	4/13/2005 4:54	2.62
4/12/2005 17:00	2.06	4/12/2005 23:00	-2.03	4/13/2005 5:00	2.62
4/12/2005 17:06	1.99	4/12/2005 23:06	-1.92	4/13/2005 5:06	2.55
4/12/2005 17:12	1.90	4/12/2005 23:12	-1.83	4/13/2005 5:12	2.53
4/12/2005 17:18	1.82	4/12/2005 23:18	-1.69	4/13/2005 5:18	2.48
4/12/2005 17:24	1.73	4/12/2005 23:24	-1.55	4/13/2005 5:24	2.42
4/12/2005 17:30	1.64	4/12/2005 23:30	-1.42	4/13/2005 5:30	2.35

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/13/2005 5:36	2.31	4/13/2005 11:36	-1.89	4/13/2005 17:36	2.07
4/13/2005 5:42	2.24	4/13/2005 11:42	-1.79	4/13/2005 17:42	2.02
4/13/2005 5:48	2.11	4/13/2005 11:48	-1.70	4/13/2005 17:48	1.97
4/13/2005 5:54	2.02	4/13/2005 11:54	-1.61	4/13/2005 17:54	1.91
4/13/2005 6:00	1.91	4/13/2005 12:00	-1.52	4/13/2005 18:00	1.84
4/13/2005 6:06	1.79	4/13/2005 12:06	-1.43	4/13/2005 18:06	1.77
4/13/2005 6:12	1.70	4/13/2005 12:12	-1.32	4/13/2005 18:12	1.66
4/13/2005 6:18	1.56	4/13/2005 12:18	-1.20	4/13/2005 18:18	1.57
4/13/2005 6:24	1.45	4/13/2005 12:24	-1.11	4/13/2005 18:24	1.50
4/13/2005 6:30	1.34	4/13/2005 12:30	-1.00	4/13/2005 18:30	1.39
4/13/2005 6:36	1.22	4/13/2005 12:36	-0.88	4/13/2005 18:36	1.27
4/13/2005 6:42	1.11	4/13/2005 12:42	-0.77	4/13/2005 18:42	1.18
4/13/2005 6:48	0.97	4/13/2005 12:48	-0.66	4/13/2005 18:48	1.07
4/13/2005 6:54	0.86	4/13/2005 12:54	-0.54	4/13/2005 18:54	0.96
4/13/2005 7:00	0.75	4/13/2005 13:00	-0.43	4/13/2005 19:00	0.85
4/13/2005 7:06	0.59	4/13/2005 13:06	-0.32	4/13/2005 19:06	0.74
4/13/2005 7:12	0.47	4/13/2005 13:12	-0.23	4/13/2005 19:12	0.61
4/13/2005 7:18	0.36	4/13/2005 13:18	-0.14	4/13/2005 19:18	0.49
4/13/2005 7:24	0.22	4/13/2005 13:24	-0.05	4/13/2005 19:24	0.40
4/13/2005 7:30	0.07	4/13/2005 13:30	0.06	4/13/2005 19:30	0.26
4/13/2005 7:36	-0.09	4/13/2005 13:36	0.14	4/13/2005 19:36	0.14
4/13/2005 7:42	-0.23	4/13/2005 13:42	0.24	4/13/2005 19:42	0.00
4/13/2005 7:48	-0.37	4/13/2005 13:48	0.33	4/13/2005 19:48	-0.08
4/13/2005 7:54	-0.50	4/13/2005 13:54	0.42	4/13/2005 19:54	-0.17
4/13/2005 8:00	-0.64	4/13/2005 14:00	0.51	4/13/2005 20:00	-0.29
4/13/2005 8:06	-0.76	4/13/2005 14:06	0.59	4/13/2005 20:06	-0.38
4/13/2005 8:12	-0.89	4/13/2005 14:12	0.66	4/13/2005 20:12	-0.49
4/13/2005 8:18	-1.01	4/13/2005 14:18	0.73	4/13/2005 20:18	-0.59
4/13/2005 8:24	-1.10	4/13/2005 14:24	0.82	4/13/2005 20:24	-0.70
4/13/2005 8:30	-1.21	4/13/2005 14:30	0.89	4/13/2005 20:30	-0.82
4/13/2005 8:36	-1.31	4/13/2005 14:36	0.98	4/13/2005 20:36	-0.91
4/13/2005 8:42	-1.42	4/13/2005 14:42	1.05	4/13/2005 20:42	-0.98
4/13/2005 8:48	-1.51	4/13/2005 14:48	1.13	4/13/2005 20:48	-1.04
4/13/2005 8:54	-1.60	4/13/2005 14:54	1.20	4/13/2005 20:54	-1.14
4/13/2005 9:00	-1.67	4/13/2005 15:00	1.30	4/13/2005 21:00	-1.21
4/13/2005 9:06	-1.74	4/13/2005 15:06	1.39	4/13/2005 21:06	-1.28
4/13/2005 9:12	-1.82	4/13/2005 15:12	1.46	4/13/2005 21:12	-1.33
4/13/2005 9:18	-1.86	4/13/2005 15:18	1.52	4/13/2005 21:18	-1.37
4/13/2005 9:24	-1.91	4/13/2005 15:24	1.59	4/13/2005 21:24	-1.39
4/13/2005 9:30	-1.98	4/13/2005 15:30	1.66	4/13/2005 21:30	-1.44
4/13/2005 9:36	-2.06	4/13/2005 15:36	1.73	4/13/2005 21:36	-1.47
4/13/2005 9:42	-2.08	4/13/2005 15:42	1.78	4/13/2005 21:42	-1.51
4/13/2005 9:48	-2.14	4/13/2005 15:48	1.87	4/13/2005 21:48	-1.51
4/13/2005 9:54	-2.14	4/13/2005 15:54	1.93	4/13/2005 21:54	-1.54
4/13/2005 10:00	-2.17	4/13/2005 16:00	1.95	4/13/2005 22:00	-1.56
4/13/2005 10:06	-2.22	4/13/2005 16:06	2.02	4/13/2005 22:06	-1.58
4/13/2005 10:12	-2.22	4/13/2005 16:12	2.09	4/13/2005 22:12	-1.59
4/13/2005 10:18	-2.24	4/13/2005 16:18	2.11	4/13/2005 22:18	-1.58
4/13/2005 10:24	-2.26	4/13/2005 16:24	2.16	4/13/2005 22:24	-1.58
4/13/2005 10:30	-2.27	4/13/2005 16:30	2.19	4/13/2005 22:30	-1.58
4/13/2005 10:36	-2.28	4/13/2005 16:36	2.21	4/13/2005 22:36	-1.59
4/13/2005 10:42	-2.28	4/13/2005 16:42	2.21	4/13/2005 22:42	-1.57
4/13/2005 10:48	-2.26	4/13/2005 16:48	2.23	4/13/2005 22:48	-1.54
4/13/2005 10:54	-2.23	4/13/2005 16:54	2.24	4/13/2005 22:54	-1.54
4/13/2005 11:00	-2.19	4/13/2005 17:00	2.22	4/13/2005 23:00	-1.52
4/13/2005 11:06	-2.18	4/13/2005 17:06	2.22	4/13/2005 23:06	-1.50
4/13/2005 11:12	-2.13	4/13/2005 17:12	2.20	4/13/2005 23:12	-1.46
4/13/2005 11:18	-2.09	4/13/2005 17:18	2.18	4/13/2005 23:18	-1.44
4/13/2005 11:24	-2.02	4/13/2005 17:24	2.14	4/13/2005 23:24	-1.37
4/13/2005 11:30	-1.95	4/13/2005 17:30	2.11	4/13/2005 23:30	-1.30

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/13/2005 23:36	-1.24	4/14/2005 5:36	2.43	4/14/2005 11:36	-2.16
4/13/2005 23:42	-1.17	4/14/2005 5:42	2.41	4/14/2005 11:42	-2.16
4/13/2005 23:48	-1.08	4/14/2005 5:48	2.41	4/14/2005 11:48	-2.11
4/13/2005 23:54	-1.01	4/14/2005 5:54	2.39	4/14/2005 11:54	-2.07
4/14/2005 0:00	-0.92	4/14/2005 6:00	2.34	4/14/2005 12:00	-2.02
4/14/2005 0:06	-0.81	4/14/2005 6:06	2.28	4/14/2005 12:06	-2.00
4/14/2005 0:12	-0.72	4/14/2005 6:12	2.23	4/14/2005 12:12	-1.93
4/14/2005 0:18	-0.61	4/14/2005 6:18	2.16	4/14/2005 12:18	-1.87
4/14/2005 0:24	-0.49	4/14/2005 6:24	2.09	4/14/2005 12:24	-1.81
4/14/2005 0:30	-0.38	4/14/2005 6:30	2.01	4/14/2005 12:30	-1.72
4/14/2005 0:36	-0.28	4/14/2005 6:36	1.89	4/14/2005 12:36	-1.65
4/14/2005 0:42	-0.16	4/14/2005 6:42	1.81	4/14/2005 12:42	-1.54
4/14/2005 0:48	-0.06	4/14/2005 6:48	1.72	4/14/2005 12:48	-1.45
4/14/2005 0:54	0.05	4/14/2005 6:54	1.62	4/14/2005 12:54	-1.36
4/14/2005 1:00	0.16	4/14/2005 7:00	1.51	4/14/2005 13:00	-1.24
4/14/2005 1:06	0.23	4/14/2005 7:06	1.38	4/14/2005 13:06	-1.16
4/14/2005 1:12	0.36	4/14/2005 7:12	1.24	4/14/2005 13:12	-1.04
4/14/2005 1:18	0.45	4/14/2005 7:18	1.13	4/14/2005 13:18	-0.95
4/14/2005 1:24	0.54	4/14/2005 7:24	1.00	4/14/2005 13:24	-0.86
4/14/2005 1:30	0.63	4/14/2005 7:30	0.87	4/14/2005 13:30	-0.77
4/14/2005 1:36	0.74	4/14/2005 7:36	0.74	4/14/2005 13:36	-0.66
4/14/2005 1:42	0.84	4/14/2005 7:42	0.63	4/14/2005 13:42	-0.57
4/14/2005 1:48	0.90	4/14/2005 7:48	0.52	4/14/2005 13:48	-0.48
4/14/2005 1:54	1.02	4/14/2005 7:54	0.41	4/14/2005 13:54	-0.39
4/14/2005 2:00	1.11	4/14/2005 8:00	0.25	4/14/2005 14:00	-0.30
4/14/2005 2:06	1.19	4/14/2005 8:06	0.15	4/14/2005 14:06	-0.23
4/14/2005 2:12	1.26	4/14/2005 8:12	0.01	4/14/2005 14:12	-0.15
4/14/2005 2:18	1.35	4/14/2005 8:18	-0.10	4/14/2005 14:18	-0.08
4/14/2005 2:24	1.42	4/14/2005 8:24	-0.22	4/14/2005 14:24	-0.01
4/14/2005 2:30	1.52	4/14/2005 8:30	-0.33	4/14/2005 14:30	0.06
4/14/2005 2:36	1.58	4/14/2005 8:36	-0.45	4/14/2005 14:36	0.15
4/14/2005 2:42	1.65	4/14/2005 8:42	-0.58	4/14/2005 14:42	0.20
4/14/2005 2:48	1.72	4/14/2005 8:48	-0.68	4/14/2005 14:48	0.26
4/14/2005 2:54	1.79	4/14/2005 8:54	-0.81	4/14/2005 14:54	0.36
4/14/2005 3:00	1.84	4/14/2005 9:00	-0.90	4/14/2005 15:00	0.42
4/14/2005 3:06	1.88	4/14/2005 9:06	-1.04	4/14/2005 15:06	0.49
4/14/2005 3:12	1.94	4/14/2005 9:12	-1.11	4/14/2005 15:12	0.56
4/14/2005 3:18	1.99	4/14/2005 9:18	-1.20	4/14/2005 15:18	0.62
4/14/2005 3:24	2.04	4/14/2005 9:24	-1.29	4/14/2005 15:24	0.69
4/14/2005 3:30	2.06	4/14/2005 9:30	-1.41	4/14/2005 15:30	0.77
4/14/2005 3:36	2.10	4/14/2005 9:36	-1.48	4/14/2005 15:36	0.81
4/14/2005 3:42	2.15	4/14/2005 9:42	-1.57	4/14/2005 15:42	0.88
4/14/2005 3:48	2.17	4/14/2005 9:48	-1.61	4/14/2005 15:48	0.93
4/14/2005 3:54	2.19	4/14/2005 9:54	-1.68	4/14/2005 15:54	1.02
4/14/2005 4:00	2.21	4/14/2005 10:00	-1.73	4/14/2005 16:00	1.07
4/14/2005 4:06	2.26	4/14/2005 10:06	-1.80	4/14/2005 16:06	1.09
4/14/2005 4:12	2.28	4/14/2005 10:12	-1.82	4/14/2005 16:12	1.16
4/14/2005 4:18	2.33	4/14/2005 10:18	-1.87	4/14/2005 16:18	1.20
4/14/2005 4:24	2.33	4/14/2005 10:24	-1.91	4/14/2005 16:24	1.25
4/14/2005 4:30	2.35	4/14/2005 10:30	-1.94	4/14/2005 16:30	1.29
4/14/2005 4:36	2.37	4/14/2005 10:36	-1.96	4/14/2005 16:36	1.34
4/14/2005 4:42	2.40	4/14/2005 10:42	-1.96	4/14/2005 16:42	1.38
4/14/2005 4:48	2.42	4/14/2005 10:48	-2.06	4/14/2005 16:48	1.41
4/14/2005 4:54	2.42	4/14/2005 10:54	-2.06	4/14/2005 16:54	1.45
4/14/2005 5:00	2.44	4/14/2005 11:00	-2.08	4/14/2005 17:00	1.48
4/14/2005 5:06	2.45	4/14/2005 11:06	-2.13	4/14/2005 17:06	1.50
4/14/2005 5:12	2.47	4/14/2005 11:12	-2.15	4/14/2005 17:12	1.52
4/14/2005 5:18	2.45	4/14/2005 11:18	-2.15	4/14/2005 17:18	1.55
4/14/2005 5:24	2.45	4/14/2005 11:24	-2.18	4/14/2005 17:24	1.55
4/14/2005 5:30	2.45	4/14/2005 11:30	-2.16	4/14/2005 17:30	1.55

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/14/2005 17:36	1.54	4/14/2005 23:36	-1.39	4/15/2005 5:36	2.55
4/14/2005 17:42	1.55	4/14/2005 23:42	-1.37	4/15/2005 5:42	2.55
4/14/2005 17:48	1.54	4/14/2005 23:48	-1.35	4/15/2005 5:48	2.57
4/14/2005 17:54	1.52	4/14/2005 23:54	-1.30	4/15/2005 5:54	2.56
4/14/2005 18:00	1.49	4/15/2005 0:00	-1.26	4/15/2005 6:00	2.54
4/14/2005 18:06	1.47	4/15/2005 0:06	-1.24	4/15/2005 6:06	2.54
4/14/2005 18:12	1.45	4/15/2005 0:12	-1.18	4/15/2005 6:12	2.54
4/14/2005 18:18	1.40	4/15/2005 0:18	-1.14	4/15/2005 6:18	2.54
4/14/2005 18:24	1.38	4/15/2005 0:24	-1.07	4/15/2005 6:24	2.49
4/14/2005 18:30	1.33	4/15/2005 0:30	-1.00	4/15/2005 6:30	2.47
4/14/2005 18:36	1.26	4/15/2005 0:36	-0.94	4/15/2005 6:36	2.44
4/14/2005 18:42	1.24	4/15/2005 0:42	-0.86	4/15/2005 6:42	2.40
4/14/2005 18:48	1.17	4/15/2005 0:48	-0.79	4/15/2005 6:48	2.37
4/14/2005 18:54	1.11	4/15/2005 0:54	-0.67	4/15/2005 6:54	2.32
4/14/2005 19:00	1.04	4/15/2005 1:00	-0.59	4/15/2005 7:00	2.25
4/14/2005 19:06	0.95	4/15/2005 1:06	-0.53	4/15/2005 7:06	2.21
4/14/2005 19:12	0.85	4/15/2005 1:12	-0.42	4/15/2005 7:12	2.14
4/14/2005 19:18	0.79	4/15/2005 1:18	-0.31	4/15/2005 7:18	2.05
4/14/2005 19:24	0.72	4/15/2005 1:24	-0.17	4/15/2005 7:24	1.97
4/14/2005 19:30	0.62	4/15/2005 1:30	-0.08	4/15/2005 7:30	1.90
4/14/2005 19:36	0.51	4/15/2005 1:36	0.07	4/15/2005 7:36	1.82
4/14/2005 19:42	0.42	4/15/2005 1:42	0.18	4/15/2005 7:42	1.72
4/14/2005 19:48	0.35	4/15/2005 1:48	0.27	4/15/2005 7:48	1.62
4/14/2005 19:54	0.26	4/15/2005 1:54	0.39	4/15/2005 7:54	1.53
4/14/2005 20:00	0.16	4/15/2005 2:00	0.52	4/15/2005 8:00	1.47
4/14/2005 20:06	0.09	4/15/2005 2:06	0.65	4/15/2005 8:06	1.37
4/14/2005 20:12	-0.03	4/15/2005 2:12	0.74	4/15/2005 8:12	1.30
4/14/2005 20:18	-0.12	4/15/2005 2:18	0.88	4/15/2005 8:18	1.19
4/14/2005 20:24	-0.21	4/15/2005 2:24	0.99	4/15/2005 8:24	1.11
4/14/2005 20:30	-0.28	4/15/2005 2:30	1.10	4/15/2005 8:30	1.05
4/14/2005 20:36	-0.38	4/15/2005 2:36	1.19	4/15/2005 8:36	0.93
4/14/2005 20:42	-0.47	4/15/2005 2:42	1.30	4/15/2005 8:42	0.86
4/14/2005 20:48	-0.54	4/15/2005 2:48	1.39	4/15/2005 8:48	0.77
4/14/2005 20:54	-0.66	4/15/2005 2:54	1.46	4/15/2005 8:54	0.70
4/14/2005 21:00	-0.73	4/15/2005 3:00	1.55	4/15/2005 9:00	0.61
4/14/2005 21:06	-0.83	4/15/2005 3:06	1.64	4/15/2005 9:06	0.51
4/14/2005 21:12	-0.89	4/15/2005 3:12	1.70	4/15/2005 9:12	0.42
4/14/2005 21:18	-0.99	4/15/2005 3:18	1.77	4/15/2005 9:18	0.33
4/14/2005 21:24	-1.06	4/15/2005 3:24	1.84	4/15/2005 9:24	0.24
4/14/2005 21:30	-1.10	4/15/2005 3:30	1.90	4/15/2005 9:30	0.14
4/14/2005 21:36	-1.18	4/15/2005 3:36	1.97	4/15/2005 9:36	0.04
4/14/2005 21:42	-1.25	4/15/2005 3:42	1.99	4/15/2005 9:42	-0.07
4/14/2005 21:48	-1.32	4/15/2005 3:48	2.05	4/15/2005 9:48	-0.14
4/14/2005 21:54	-1.35	4/15/2005 3:54	2.10	4/15/2005 9:54	-0.21
4/14/2005 22:00	-1.39	4/15/2005 4:00	2.12	4/15/2005 10:00	-0.30
4/14/2005 22:06	-1.42	4/15/2005 4:06	2.13	4/15/2005 10:06	-0.40
4/14/2005 22:12	-1.45	4/15/2005 4:12	2.18	4/15/2005 10:12	-0.47
4/14/2005 22:18	-1.47	4/15/2005 4:18	2.20	4/15/2005 10:18	-0.55
4/14/2005 22:24	-1.48	4/15/2005 4:24	2.25	4/15/2005 10:24	-0.59
4/14/2005 22:30	-1.48	4/15/2005 4:30	2.27	4/15/2005 10:30	-0.64
4/14/2005 22:36	-1.50	4/15/2005 4:36	2.30	4/15/2005 10:36	-0.72
4/14/2005 22:42	-1.48	4/15/2005 4:42	2.33	4/15/2005 10:42	-0.78
4/14/2005 22:48	-1.49	4/15/2005 4:48	2.37	4/15/2005 10:48	-0.86
4/14/2005 22:54	-1.49	4/15/2005 4:54	2.40	4/15/2005 10:54	-0.88
4/14/2005 23:00	-1.47	4/15/2005 5:00	2.40	4/15/2005 11:00	-0.95
4/14/2005 23:06	-1.45	4/15/2005 5:06	2.46	4/15/2005 11:06	-0.98
4/14/2005 23:12	-1.46	4/15/2005 5:12	2.48	4/15/2005 11:12	-1.03
4/14/2005 23:18	-1.44	4/15/2005 5:18	2.48	4/15/2005 11:18	-1.07
4/14/2005 23:24	-1.43	4/15/2005 5:24	2.50	4/15/2005 11:24	-1.10
4/14/2005 23:30	-1.39	4/15/2005 5:30	2.53	4/15/2005 11:30	-1.12

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/15/2005 11:36	-1.17	4/15/2005 17:36	1.85	4/15/2005 23:36	-0.41
4/15/2005 11:42	-1.19	4/15/2005 17:42	1.86	4/15/2005 23:42	-0.45
4/15/2005 11:48	-1.20	4/15/2005 17:48	1.88	4/15/2005 23:48	-0.52
4/15/2005 11:54	-1.22	4/15/2005 17:54	1.93	4/15/2005 23:54	-0.57
4/15/2005 12:00	-1.24	4/15/2005 18:00	1.95	4/16/2005 0:00	-0.59
4/15/2005 12:06	-1.27	4/15/2005 18:06	1.95	4/16/2005 0:06	-0.64
4/15/2005 12:12	-1.25	4/15/2005 18:12	1.95	4/16/2005 0:12	-0.66
4/15/2005 12:18	-1.23	4/15/2005 18:18	1.97	4/16/2005 0:18	-0.71
4/15/2005 12:24	-1.23	4/15/2005 18:24	1.98	4/16/2005 0:24	-0.71
4/15/2005 12:30	-1.21	4/15/2005 18:30	1.98	4/16/2005 0:30	-0.74
4/15/2005 12:36	-1.17	4/15/2005 18:36	1.97	4/16/2005 0:36	-0.74
4/15/2005 12:42	-1.13	4/15/2005 18:42	2.00	4/16/2005 0:42	-0.77
4/15/2005 12:48	-1.11	4/15/2005 18:48	1.98	4/16/2005 0:48	-0.77
4/15/2005 12:54	-1.06	4/15/2005 18:54	1.98	4/16/2005 0:54	-0.77
4/15/2005 13:00	-1.00	4/15/2005 19:00	2.00	4/16/2005 1:00	-0.72
4/15/2005 13:06	-0.96	4/15/2005 19:06	2.00	4/16/2005 1:06	-0.70
4/15/2005 13:12	-0.92	4/15/2005 19:12	2.00	4/16/2005 1:12	-0.68
4/15/2005 13:18	-0.85	4/15/2005 19:18	2.00	4/16/2005 1:18	-0.66
4/15/2005 13:24	-0.74	4/15/2005 19:24	1.98	4/16/2005 1:24	-0.61
4/15/2005 13:30	-0.68	4/15/2005 19:30	1.97	4/16/2005 1:30	-0.59
4/15/2005 13:36	-0.60	4/15/2005 19:36	1.95	4/16/2005 1:36	-0.52
4/15/2005 13:42	-0.50	4/15/2005 19:42	1.92	4/16/2005 1:42	-0.48
4/15/2005 13:48	-0.41	4/15/2005 19:48	1.89	4/16/2005 1:48	-0.43
4/15/2005 13:54	-0.33	4/15/2005 19:54	1.85	4/16/2005 1:54	-0.36
4/15/2005 14:00	-0.21	4/15/2005 20:00	1.83	4/16/2005 2:00	-0.27
4/15/2005 14:06	-0.13	4/15/2005 20:06	1.80	4/16/2005 2:06	-0.20
4/15/2005 14:12	-0.06	4/15/2005 20:12	1.76	4/16/2005 2:12	-0.13
4/15/2005 14:18	0.05	4/15/2005 20:18	1.71	4/16/2005 2:18	-0.04
4/15/2005 14:24	0.14	4/15/2005 20:24	1.66	4/16/2005 2:24	0.05
4/15/2005 14:30	0.23	4/15/2005 20:30	1.60	4/16/2005 2:30	0.14
4/15/2005 14:36	0.32	4/15/2005 20:36	1.57	4/16/2005 2:36	0.23
4/15/2005 14:42	0.41	4/15/2005 20:42	1.53	4/16/2005 2:42	0.30
4/15/2005 14:48	0.48	4/15/2005 20:48	1.45	4/16/2005 2:48	0.38
4/15/2005 14:54	0.57	4/15/2005 20:54	1.43	4/16/2005 2:54	0.47
4/15/2005 15:00	0.65	4/15/2005 21:00	1.36	4/16/2005 3:00	0.54
4/15/2005 15:06	0.74	4/15/2005 21:06	1.31	4/16/2005 3:06	0.61
4/15/2005 15:12	0.83	4/15/2005 21:12	1.26	4/16/2005 3:12	0.70
4/15/2005 15:18	0.89	4/15/2005 21:18	1.22	4/16/2005 3:18	0.77
4/15/2005 15:24	0.96	4/15/2005 21:24	1.17	4/16/2005 3:24	0.84
4/15/2005 15:30	1.03	4/15/2005 21:30	1.10	4/16/2005 3:30	0.93
4/15/2005 15:36	1.12	4/15/2005 21:36	1.03	4/16/2005 3:36	0.99
4/15/2005 15:42	1.17	4/15/2005 21:42	0.96	4/16/2005 3:42	1.09
4/15/2005 15:48	1.24	4/15/2005 21:48	0.92	4/16/2005 3:48	1.19
4/15/2005 15:54	1.31	4/15/2005 21:54	0.85	4/16/2005 3:54	1.25
4/15/2005 16:00	1.38	4/15/2005 22:00	0.78	4/16/2005 4:00	1.32
4/15/2005 16:06	1.42	4/15/2005 22:06	0.70	4/16/2005 4:06	1.39
4/15/2005 16:12	1.49	4/15/2005 22:12	0.63	4/16/2005 4:12	1.48
4/15/2005 16:18	1.53	4/15/2005 22:18	0.56	4/16/2005 4:18	1.55
4/15/2005 16:24	1.60	4/15/2005 22:24	0.48	4/16/2005 4:24	1.62
4/15/2005 16:30	1.60	4/15/2005 22:30	0.38	4/16/2005 4:30	1.69
4/15/2005 16:36	1.67	4/15/2005 22:36	0.29	4/16/2005 4:36	1.76
4/15/2005 16:42	1.69	4/15/2005 22:42	0.22	4/16/2005 4:42	1.83
4/15/2005 16:48	1.71	4/15/2005 22:48	0.13	4/16/2005 4:48	1.86
4/15/2005 16:54	1.73	4/15/2005 22:54	0.06	4/16/2005 4:54	1.90
4/15/2005 17:00	1.76	4/15/2005 23:00	-0.03	4/16/2005 5:00	1.99
4/15/2005 17:06	1.79	4/15/2005 23:06	-0.10	4/16/2005 5:06	2.02
4/15/2005 17:12	1.81	4/15/2005 23:12	-0.17	4/16/2005 5:12	2.06
4/15/2005 17:18	1.83	4/15/2005 23:18	-0.24	4/16/2005 5:18	2.09
4/15/2005 17:24	1.84	4/15/2005 23:24	-0.27	4/16/2005 5:24	2.14
4/15/2005 17:30	1.86	4/15/2005 23:30	-0.34	4/16/2005 5:30	2.16

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/16/2005 5:36	2.20	4/16/2005 11:36	-1.03	4/16/2005 17:36	0.77
4/16/2005 5:42	2.23	4/16/2005 11:42	-1.08	4/16/2005 17:42	0.84
4/16/2005 5:48	2.25	4/16/2005 11:48	-1.11	4/16/2005 17:48	0.91
4/16/2005 5:54	2.27	4/16/2005 11:54	-1.13	4/16/2005 17:54	0.98
4/16/2005 6:00	2.30	4/16/2005 12:00	-1.18	4/16/2005 18:00	1.05
4/16/2005 6:06	2.32	4/16/2005 12:06	-1.19	4/16/2005 18:06	1.10
4/16/2005 6:12	2.32	4/16/2005 12:12	-1.23	4/16/2005 18:12	1.15
4/16/2005 6:18	2.32	4/16/2005 12:18	-1.26	4/16/2005 18:18	1.22
4/16/2005 6:24	2.34	4/16/2005 12:24	-1.28	4/16/2005 18:24	1.24
4/16/2005 6:30	2.34	4/16/2005 12:30	-1.33	4/16/2005 18:30	1.29
4/16/2005 6:36	2.34	4/16/2005 12:36	-1.35	4/16/2005 18:36	1.31
4/16/2005 6:42	2.35	4/16/2005 12:42	-1.37	4/16/2005 18:42	1.36
4/16/2005 6:48	2.32	4/16/2005 12:48	-1.43	4/16/2005 18:48	1.38
4/16/2005 6:54	2.30	4/16/2005 12:54	-1.44	4/16/2005 18:54	1.41
4/16/2005 7:00	2.30	4/16/2005 13:00	-1.47	4/16/2005 19:00	1.44
4/16/2005 7:06	2.28	4/16/2005 13:06	-1.49	4/16/2005 19:06	1.46
4/16/2005 7:12	2.25	4/16/2005 13:12	-1.49	4/16/2005 19:12	1.46
4/16/2005 7:18	2.23	4/16/2005 13:18	-1.52	4/16/2005 19:18	1.47
4/16/2005 7:24	2.19	4/16/2005 13:24	-1.54	4/16/2005 19:24	1.47
4/16/2005 7:30	2.14	4/16/2005 13:30	-1.54	4/16/2005 19:30	1.50
4/16/2005 7:36	2.09	4/16/2005 13:36	-1.57	4/16/2005 19:36	1.50
4/16/2005 7:42	2.05	4/16/2005 13:42	-1.57	4/16/2005 19:42	1.48
4/16/2005 7:48	2.00	4/16/2005 13:48	-1.57	4/16/2005 19:48	1.46
4/16/2005 7:54	1.91	4/16/2005 13:54	-1.54	4/16/2005 19:54	1.42
4/16/2005 8:00	1.84	4/16/2005 14:00	-1.54	4/16/2005 20:00	1.42
4/16/2005 8:06	1.77	4/16/2005 14:06	-1.55	4/16/2005 20:06	1.42
4/16/2005 8:12	1.70	4/16/2005 14:12	-1.52	4/16/2005 20:12	1.36
4/16/2005 8:18	1.61	4/16/2005 14:18	-1.49	4/16/2005 20:18	1.29
4/16/2005 8:24	1.52	4/16/2005 14:24	-1.45	4/16/2005 20:24	1.27
4/16/2005 8:30	1.43	4/16/2005 14:30	-1.43	4/16/2005 20:30	1.20
4/16/2005 8:36	1.33	4/16/2005 14:36	-1.38	4/16/2005 20:36	1.13
4/16/2005 8:42	1.24	4/16/2005 14:42	-1.33	4/16/2005 20:42	1.06
4/16/2005 8:48	1.13	4/16/2005 14:48	-1.26	4/16/2005 20:48	0.97
4/16/2005 8:54	1.01	4/16/2005 14:54	-1.21	4/16/2005 20:54	0.90
4/16/2005 9:00	0.92	4/16/2005 15:00	-1.14	4/16/2005 21:00	0.83
4/16/2005 9:06	0.80	4/16/2005 15:06	-1.09	4/16/2005 21:06	0.75
4/16/2005 9:12	0.71	4/16/2005 15:12	-1.02	4/16/2005 21:12	0.66
4/16/2005 9:18	0.62	4/16/2005 15:18	-0.95	4/16/2005 21:18	0.57
4/16/2005 9:24	0.51	4/16/2005 15:24	-0.88	4/16/2005 21:24	0.48
4/16/2005 9:30	0.39	4/16/2005 15:30	-0.81	4/16/2005 21:30	0.39
4/16/2005 9:36	0.32	4/16/2005 15:36	-0.82	4/16/2005 21:36	0.32
4/16/2005 9:42	0.23	4/16/2005 15:42	-0.69	4/16/2005 21:42	0.23
4/16/2005 9:48	0.14	4/16/2005 15:48	-0.62	4/16/2005 21:48	0.17
4/16/2005 9:54	0.02	4/16/2005 15:54	-0.55	4/16/2005 21:54	0.08
4/16/2005 10:00	-0.08	4/16/2005 16:00	-0.47	4/16/2005 22:00	0.01
4/16/2005 10:06	-0.15	4/16/2005 16:06	-0.40	4/16/2005 22:06	-0.06
4/16/2005 10:12	-0.25	4/16/2005 16:12	-0.33	4/16/2005 22:12	-0.13
4/16/2005 10:18	-0.32	4/16/2005 16:18	-0.24	4/16/2005 22:18	-0.19
4/16/2005 10:24	-0.39	4/16/2005 16:24	-0.17	4/16/2005 22:24	-0.28
4/16/2005 10:30	-0.45	4/16/2005 16:30	-0.10	4/16/2005 22:30	-0.33
4/16/2005 10:36	-0.53	4/16/2005 16:36	-0.03	4/16/2005 22:36	-0.37
4/16/2005 10:42	-0.60	4/16/2005 16:42	0.06	4/16/2005 22:42	-0.44
4/16/2005 10:48	-0.67	4/16/2005 16:48	0.14	4/16/2005 22:48	-0.51
4/16/2005 10:54	-0.72	4/16/2005 16:54	0.21	4/16/2005 22:54	-0.55
4/16/2005 11:00	-0.77	4/16/2005 17:00	0.30	4/16/2005 23:00	-0.58
4/16/2005 11:06	-0.85	4/16/2005 17:06	0.37	4/16/2005 23:06	-0.64
4/16/2005 11:12	-0.87	4/16/2005 17:12	0.46	4/16/2005 23:12	-0.68
4/16/2005 11:18	-0.94	4/16/2005 17:18	0.53	4/16/2005 23:18	-0.73
4/16/2005 11:24	-0.99	4/16/2005 17:24	0.61	4/16/2005 23:24	-0.77
4/16/2005 11:30	-1.01	4/16/2005 17:30	0.70	4/16/2005 23:30	-0.82

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/16/2005 23:36	-0.87	4/17/2005 5:36	1.16	4/17/2005 11:36	-0.85
4/16/2005 23:42	-0.89	4/17/2005 5:42	1.23	4/17/2005 11:42	-0.91
4/16/2005 23:48	-0.93	4/17/2005 5:48	1.30	4/17/2005 11:48	-0.98
4/16/2005 23:54	-0.98	4/17/2005 5:54	1.40	4/17/2005 11:54	-1.03
4/17/2005 0:00	-1.02	4/17/2005 6:00	1.45	4/17/2005 12:00	-1.10
4/17/2005 0:06	-1.02	4/17/2005 6:06	1.51	4/17/2005 12:06	-1.16
4/17/2005 0:12	-1.07	4/17/2005 6:12	1.58	4/17/2005 12:12	-1.21
4/17/2005 0:18	-1.09	4/17/2005 6:18	1.63	4/17/2005 12:18	-1.30
4/17/2005 0:24	-1.09	4/17/2005 6:24	1.63	4/17/2005 12:24	-1.36
4/17/2005 0:30	-1.14	4/17/2005 6:30	1.66	4/17/2005 12:30	-1.41
4/17/2005 0:36	-1.16	4/17/2005 6:36	1.70	4/17/2005 12:36	-1.48
4/17/2005 0:42	-1.16	4/17/2005 6:42	1.75	4/17/2005 12:42	-1.52
4/17/2005 0:48	-1.16	4/17/2005 6:48	1.78	4/17/2005 12:48	-1.58
4/17/2005 0:54	-1.18	4/17/2005 6:54	1.81	4/17/2005 12:54	-1.63
4/17/2005 1:00	-1.21	4/17/2005 7:00	1.81	4/17/2005 13:00	-1.67
4/17/2005 1:06	-1.21	4/17/2005 7:06	1.81	4/17/2005 13:06	-1.71
4/17/2005 1:12	-1.21	4/17/2005 7:12	1.86	4/17/2005 13:12	-1.78
4/17/2005 1:18	-1.21	4/17/2005 7:18	1.84	4/17/2005 13:18	-1.82
4/17/2005 1:24	-1.22	4/17/2005 7:24	1.80	4/17/2005 13:24	-1.86
4/17/2005 1:30	-1.22	4/17/2005 7:30	1.80	4/17/2005 13:30	-1.91
4/17/2005 1:36	-1.21	4/17/2005 7:36	1.80	4/17/2005 13:36	-1.94
4/17/2005 1:42	-1.18	4/17/2005 7:42	1.76	4/17/2005 13:42	-1.98
4/17/2005 1:48	-1.18	4/17/2005 7:48	1.74	4/17/2005 13:48	-2.00
4/17/2005 1:54	-1.17	4/17/2005 7:54	1.71	4/17/2005 13:54	-2.01
4/17/2005 2:00	-1.15	4/17/2005 8:00	1.67	4/17/2005 14:00	-2.03
4/17/2005 2:06	-1.12	4/17/2005 8:06	1.63	4/17/2005 14:06	-2.05
4/17/2005 2:12	-1.10	4/17/2005 8:12	1.61	4/17/2005 14:12	-2.07
4/17/2005 2:18	-1.07	4/17/2005 8:18	1.57	4/17/2005 14:18	-2.07
4/17/2005 2:24	-1.07	4/17/2005 8:24	1.50	4/17/2005 14:24	-2.06
4/17/2005 2:30	-1.03	4/17/2005 8:30	1.44	4/17/2005 14:30	-2.06
4/17/2005 2:36	-0.98	4/17/2005 8:36	1.36	4/17/2005 14:36	-2.04
4/17/2005 2:42	-0.96	4/17/2005 8:42	1.30	4/17/2005 14:42	-2.03
4/17/2005 2:48	-0.91	4/17/2005 8:48	1.23	4/17/2005 14:48	-1.98
4/17/2005 2:54	-0.85	4/17/2005 8:54	1.15	4/17/2005 14:54	-1.93
4/17/2005 3:00	-0.80	4/17/2005 9:00	1.08	4/17/2005 15:00	-1.89
4/17/2005 3:06	-0.75	4/17/2005 9:06	1.02	4/17/2005 15:06	-1.84
4/17/2005 3:12	-0.71	4/17/2005 9:12	0.95	4/17/2005 15:12	-1.79
4/17/2005 3:18	-0.64	4/17/2005 9:18	0.86	4/17/2005 15:18	-1.74
4/17/2005 3:24	-0.57	4/17/2005 9:24	0.78	4/17/2005 15:24	-1.64
4/17/2005 3:30	-0.50	4/17/2005 9:30	0.68	4/17/2005 15:30	-1.57
4/17/2005 3:36	-0.43	4/17/2005 9:36	0.61	4/17/2005 15:36	-1.50
4/17/2005 3:42	-0.36	4/17/2005 9:42	0.50	4/17/2005 15:42	-1.43
4/17/2005 3:48	-0.32	4/17/2005 9:48	0.41	4/17/2005 15:48	-1.33
4/17/2005 3:54	-0.24	4/17/2005 9:54	0.35	4/17/2005 15:54	-1.26
4/17/2005 4:00	-0.15	4/17/2005 10:00	0.28	4/17/2005 16:00	-1.19
4/17/2005 4:06	-0.08	4/17/2005 10:06	0.20	4/17/2005 16:06	-1.10
4/17/2005 4:12	-0.01	4/17/2005 10:12	0.10	4/17/2005 16:12	-1.01
4/17/2005 4:18	0.06	4/17/2005 10:18	0.02	4/17/2005 16:18	-0.91
4/17/2005 4:24	0.16	4/17/2005 10:24	-0.05	4/17/2005 16:24	-0.84
4/17/2005 4:30	0.23	4/17/2005 10:30	-0.14	4/17/2005 16:30	-0.76
4/17/2005 4:36	0.29	4/17/2005 10:36	-0.22	4/17/2005 16:36	-0.67
4/17/2005 4:42	0.39	4/17/2005 10:42	-0.28	4/17/2005 16:42	-0.57
4/17/2005 4:48	0.46	4/17/2005 10:48	-0.35	4/17/2005 16:48	-0.48
4/17/2005 4:54	0.55	4/17/2005 10:54	-0.39	4/17/2005 16:54	-0.43
4/17/2005 5:00	0.64	4/17/2005 11:00	-0.46	4/17/2005 17:00	-0.34
4/17/2005 5:06	0.73	4/17/2005 11:06	-0.53	4/17/2005 17:06	-0.27
4/17/2005 5:12	0.83	4/17/2005 11:12	-0.60	4/17/2005 17:12	-0.20
4/17/2005 5:18	0.92	4/17/2005 11:18	-0.67	4/17/2005 17:18	-0.15
4/17/2005 5:24	1.00	4/17/2005 11:24	-0.71	4/17/2005 17:24	-0.08
4/17/2005 5:30	1.07	4/17/2005 11:30	-0.78	4/17/2005 17:30	0.00

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/17/2005 17:36	0.06	4/17/2005 23:36	-0.21	4/18/2005 5:36	0.24
4/17/2005 17:42	0.16	4/17/2005 23:42	-0.28	4/18/2005 5:42	0.33
4/17/2005 17:48	0.23	4/17/2005 23:48	-0.35	4/18/2005 5:48	0.44
4/17/2005 17:54	0.28	4/17/2005 23:54	-0.43	4/18/2005 5:54	0.54
4/17/2005 18:00	0.33	4/18/2005 0:00	-0.49	4/18/2005 6:00	0.63
4/17/2005 18:06	0.37	4/18/2005 0:06	-0.57	4/18/2005 6:06	0.74
4/17/2005 18:12	0.42	4/18/2005 0:12	-0.63	4/18/2005 6:12	0.84
4/17/2005 18:18	0.47	4/18/2005 0:18	-0.71	4/18/2005 6:18	0.93
4/17/2005 18:24	0.52	4/18/2005 0:24	-0.75	4/18/2005 6:24	1.01
4/17/2005 18:30	0.57	4/18/2005 0:30	-0.82	4/18/2005 6:30	1.13
4/17/2005 18:36	0.62	4/18/2005 0:36	-0.90	4/18/2005 6:36	1.19
4/17/2005 18:42	0.65	4/18/2005 0:42	-0.96	4/18/2005 6:42	1.29
4/17/2005 18:48	0.72	4/18/2005 0:48	-1.03	4/18/2005 6:48	1.36
4/17/2005 18:54	0.75	4/18/2005 0:54	-1.08	4/18/2005 6:54	1.43
4/17/2005 19:00	0.80	4/18/2005 1:00	-1.13	4/18/2005 7:00	1.47
4/17/2005 19:06	0.82	4/18/2005 1:06	-1.17	4/18/2005 7:06	1.54
4/17/2005 19:12	0.87	4/18/2005 1:12	-1.26	4/18/2005 7:12	1.59
4/17/2005 19:18	0.90	4/18/2005 1:18	-1.29	4/18/2005 7:18	1.61
4/17/2005 19:24	0.95	4/18/2005 1:24	-1.34	4/18/2005 7:24	1.66
4/17/2005 19:30	0.97	4/18/2005 1:30	-1.39	4/18/2005 7:30	1.68
4/17/2005 19:36	1.00	4/18/2005 1:36	-1.43	4/18/2005 7:36	1.68
4/17/2005 19:42	1.03	4/18/2005 1:42	-1.48	4/18/2005 7:42	1.70
4/17/2005 19:48	1.05	4/18/2005 1:48	-1.50	4/18/2005 7:48	1.70
4/17/2005 19:54	1.08	4/18/2005 1:54	-1.55	4/18/2005 7:54	1.70
4/17/2005 20:00	1.08	4/18/2005 2:00	-1.57	4/18/2005 8:00	1.68
4/17/2005 20:06	1.08	4/18/2005 2:06	-1.60	4/18/2005 8:06	1.68
4/17/2005 20:12	1.11	4/18/2005 2:12	-1.62	4/18/2005 8:12	1.68
4/17/2005 20:18	1.13	4/18/2005 2:18	-1.64	4/18/2005 8:18	1.63
4/17/2005 20:24	1.14	4/18/2005 2:24	-1.64	4/18/2005 8:24	1.61
4/17/2005 20:30	1.12	4/18/2005 2:30	-1.64	4/18/2005 8:30	1.61
4/17/2005 20:36	1.12	4/18/2005 2:36	-1.65	4/18/2005 8:36	1.54
4/17/2005 20:42	1.12	4/18/2005 2:42	-1.65	4/18/2005 8:42	1.50
4/17/2005 20:48	1.12	4/18/2005 2:48	-1.65	4/18/2005 8:48	1.45
4/17/2005 20:54	1.12	4/18/2005 2:54	-1.65	4/18/2005 8:54	1.43
4/17/2005 21:00	1.15	4/18/2005 3:00	-1.63	4/18/2005 9:00	1.38
4/17/2005 21:06	1.13	4/18/2005 3:06	-1.60	4/18/2005 9:06	1.31
4/17/2005 21:12	1.08	4/18/2005 3:12	-1.58	4/18/2005 9:12	1.27
4/17/2005 21:18	1.08	4/18/2005 3:18	-1.58	4/18/2005 9:18	1.22
4/17/2005 21:24	1.06	4/18/2005 3:24	-1.54	4/18/2005 9:24	1.15
4/17/2005 21:30	1.04	4/18/2005 3:30	-1.49	4/18/2005 9:30	1.08
4/17/2005 21:36	1.02	4/18/2005 3:36	-1.45	4/18/2005 9:36	1.03
4/17/2005 21:42	1.00	4/18/2005 3:42	-1.42	4/18/2005 9:42	0.99
4/17/2005 21:48	0.93	4/18/2005 3:48	-1.36	4/18/2005 9:48	0.92
4/17/2005 21:54	0.89	4/18/2005 3:54	-1.28	4/18/2005 9:54	0.84
4/17/2005 22:00	0.87	4/18/2005 4:00	-1.24	4/18/2005 10:00	0.77
4/17/2005 22:06	0.80	4/18/2005 4:06	-1.17	4/18/2005 10:06	0.72
4/17/2005 22:12	0.76	4/18/2005 4:12	-1.08	4/18/2005 10:12	0.65
4/17/2005 22:18	0.71	4/18/2005 4:18	-1.01	4/18/2005 10:18	0.60
4/17/2005 22:24	0.65	4/18/2005 4:24	-0.94	4/18/2005 10:24	0.53
4/17/2005 22:30	0.58	4/18/2005 4:30	-0.83	4/18/2005 10:30	0.47
4/17/2005 22:36	0.49	4/18/2005 4:36	-0.74	4/18/2005 10:36	0.39
4/17/2005 22:42	0.42	4/18/2005 4:42	-0.67	4/18/2005 10:42	0.32
4/17/2005 22:48	0.36	4/18/2005 4:48	-0.57	4/18/2005 10:48	0.25
4/17/2005 22:54	0.29	4/18/2005 4:54	-0.48	4/18/2005 10:54	0.21
4/17/2005 23:00	0.20	4/18/2005 5:00	-0.36	4/18/2005 11:00	0.14
4/17/2005 23:06	0.13	4/18/2005 5:06	-0.30	4/18/2005 11:06	0.06
4/17/2005 23:12	0.06	4/18/2005 5:12	-0.20	4/18/2005 11:12	-0.02
4/17/2005 23:18	-0.01	4/18/2005 5:18	-0.09	4/18/2005 11:18	-0.07
4/17/2005 23:24	-0.08	4/18/2005 5:24	0.03	4/18/2005 11:24	-0.11
4/17/2005 23:30	-0.14	4/18/2005 5:30	0.12	4/18/2005 11:30	-0.15

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/18/2005 11:36	-0.21	4/18/2005 17:36	-0.85	4/18/2005 23:36	0.49
4/18/2005 11:42	-0.25	4/18/2005 17:42	-0.76	4/18/2005 23:42	0.39
4/18/2005 11:48	-0.32	4/18/2005 17:48	-0.64	4/18/2005 23:48	0.33
4/18/2005 11:54	-0.37	4/18/2005 17:54	-0.52	4/18/2005 23:54	0.28
4/18/2005 12:00	-0.41	4/18/2005 18:00	-0.43	4/19/2005 0:00	0.19
4/18/2005 12:06	-0.48	4/18/2005 18:06	-0.32	4/19/2005 0:06	0.12
4/18/2005 12:12	-0.55	4/18/2005 18:12	-0.23	4/19/2005 0:12	0.05
4/18/2005 12:18	-0.60	4/18/2005 18:18	-0.11	4/19/2005 0:18	-0.02
4/18/2005 12:24	-0.65	4/18/2005 18:24	-0.02	4/19/2005 0:24	-0.09
4/18/2005 12:30	-0.71	4/18/2005 18:30	0.08	4/19/2005 0:30	-0.16
4/18/2005 12:36	-0.79	4/18/2005 18:36	0.16	4/19/2005 0:36	-0.21
4/18/2005 12:42	-0.85	4/18/2005 18:42	0.26	4/19/2005 0:42	-0.30
4/18/2005 12:48	-0.92	4/18/2005 18:48	0.35	4/19/2005 0:48	-0.37
4/18/2005 12:54	-0.99	4/18/2005 18:54	0.45	4/19/2005 0:54	-0.42
4/18/2005 13:00	-1.06	4/18/2005 19:00	0.54	4/19/2005 1:00	-0.49
4/18/2005 13:06	-1.11	4/18/2005 19:06	0.61	4/19/2005 1:06	-0.56
4/18/2005 13:12	-1.17	4/18/2005 19:12	0.71	4/19/2005 1:12	-0.61
4/18/2005 13:18	-1.24	4/18/2005 19:18	0.80	4/19/2005 1:18	-0.68
4/18/2005 13:24	-1.33	4/18/2005 19:24	0.87	4/19/2005 1:24	-0.74
4/18/2005 13:30	-1.41	4/18/2005 19:30	0.94	4/19/2005 1:30	-0.81
4/18/2005 13:36	-1.48	4/18/2005 19:36	1.03	4/19/2005 1:36	-0.86
4/18/2005 13:42	-1.52	4/18/2005 19:42	1.10	4/19/2005 1:42	-0.91
4/18/2005 13:48	-1.59	4/18/2005 19:48	1.17	4/19/2005 1:48	-0.98
4/18/2005 13:54	-1.66	4/18/2005 19:54	1.24	4/19/2005 1:54	-1.03
4/18/2005 14:00	-1.70	4/18/2005 20:00	1.29	4/19/2005 2:00	-1.07
4/18/2005 14:06	-1.75	4/18/2005 20:06	1.33	4/19/2005 2:06	-1.14
4/18/2005 14:12	-1.78	4/18/2005 20:12	1.38	4/19/2005 2:12	-1.16
4/18/2005 14:18	-1.85	4/18/2005 20:18	1.40	4/19/2005 2:18	-1.21
4/18/2005 14:24	-1.89	4/18/2005 20:24	1.45	4/19/2005 2:24	-1.26
4/18/2005 14:30	-1.94	4/18/2005 20:30	1.45	4/19/2005 2:30	-1.31
4/18/2005 14:36	-1.99	4/18/2005 20:36	1.47	4/19/2005 2:36	-1.36
4/18/2005 14:42	-2.03	4/18/2005 20:42	1.50	4/19/2005 2:42	-1.38
4/18/2005 14:48	-2.08	4/18/2005 20:48	1.49	4/19/2005 2:48	-1.44
4/18/2005 14:54	-2.10	4/18/2005 20:54	1.52	4/19/2005 2:54	-1.47
4/18/2005 15:00	-2.10	4/18/2005 21:00	1.52	4/19/2005 3:00	-1.51
4/18/2005 15:06	-2.13	4/18/2005 21:06	1.50	4/19/2005 3:06	-1.55
4/18/2005 15:12	-2.17	4/18/2005 21:12	1.50	4/19/2005 3:12	-1.60
4/18/2005 15:18	-2.17	4/18/2005 21:18	1.52	4/19/2005 3:18	-1.60
4/18/2005 15:24	-2.19	4/18/2005 21:24	1.50	4/19/2005 3:24	-1.62
4/18/2005 15:30	-2.16	4/18/2005 21:30	1.46	4/19/2005 3:30	-1.64
4/18/2005 15:36	-2.19	4/18/2005 21:36	1.45	4/19/2005 3:36	-1.67
4/18/2005 15:42	-2.19	4/18/2005 21:42	1.45	4/19/2005 3:42	-1.67
4/18/2005 15:48	-2.18	4/18/2005 21:48	1.45	4/19/2005 3:48	-1.67
4/18/2005 15:54	-2.16	4/18/2005 21:54	1.41	4/19/2005 3:54	-1.64
4/18/2005 16:00	-2.14	4/18/2005 22:00	1.39	4/19/2005 4:00	-1.64
4/18/2005 16:06	-2.11	4/18/2005 22:06	1.37	4/19/2005 4:06	-1.60
4/18/2005 16:12	-2.08	4/18/2005 22:12	1.34	4/19/2005 4:12	-1.60
4/18/2005 16:18	-2.01	4/18/2005 22:18	1.32	4/19/2005 4:18	-1.55
4/18/2005 16:24	-1.97	4/18/2005 22:24	1.26	4/19/2005 4:24	-1.51
4/18/2005 16:30	-1.92	4/18/2005 22:30	1.21	4/19/2005 4:30	-1.43
4/18/2005 16:36	-1.85	4/18/2005 22:36	1.16	4/19/2005 4:36	-1.41
4/18/2005 16:42	-1.76	4/18/2005 22:42	1.10	4/19/2005 4:42	-1.36
4/18/2005 16:48	-1.69	4/18/2005 22:48	1.05	4/19/2005 4:48	-1.29
4/18/2005 16:54	-1.59	4/18/2005 22:54	0.98	4/19/2005 4:54	-1.20
4/18/2005 17:00	-1.50	4/18/2005 23:00	0.93	4/19/2005 5:00	-1.15
4/18/2005 17:06	-1.39	4/18/2005 23:06	0.86	4/19/2005 5:06	-1.07
4/18/2005 17:12	-1.29	4/18/2005 23:12	0.80	4/19/2005 5:12	-0.97
4/18/2005 17:18	-1.18	4/18/2005 23:18	0.72	4/19/2005 5:18	-0.91
4/18/2005 17:24	-1.08	4/18/2005 23:24	0.65	4/19/2005 5:24	-0.81
4/18/2005 17:30	-0.96	4/18/2005 23:30	0.56	4/19/2005 5:30	-0.72

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/19/2005 5:36	-0.62	4/19/2005 11:36	0.76	4/19/2005 17:36	-1.70
4/19/2005 5:42	-0.52	4/19/2005 11:42	0.67	4/19/2005 17:42	-1.61
4/19/2005 5:48	-0.43	4/19/2005 11:48	0.60	4/19/2005 17:48	-1.51
4/19/2005 5:54	-0.31	4/19/2005 11:54	0.51	4/19/2005 17:54	-1.42
4/19/2005 6:00	-0.22	4/19/2005 12:00	0.39	4/19/2005 18:00	-1.30
4/19/2005 6:06	-0.10	4/19/2005 12:06	0.30	4/19/2005 18:06	-1.21
4/19/2005 6:12	-0.01	4/19/2005 12:12	0.21	4/19/2005 18:12	-1.07
4/19/2005 6:18	0.08	4/19/2005 12:18	0.11	4/19/2005 18:18	-0.97
4/19/2005 6:24	0.20	4/19/2005 12:24	0.02	4/19/2005 18:24	-0.86
4/19/2005 6:30	0.31	4/19/2005 12:30	-0.06	4/19/2005 18:30	-0.74
4/19/2005 6:36	0.40	4/19/2005 12:36	-0.16	4/19/2005 18:36	-0.60
4/19/2005 6:42	0.49	4/19/2005 12:42	-0.25	4/19/2005 18:42	-0.48
4/19/2005 6:48	0.60	4/19/2005 12:48	-0.34	4/19/2005 18:48	-0.37
4/19/2005 6:54	0.69	4/19/2005 12:54	-0.45	4/19/2005 18:54	-0.27
4/19/2005 7:00	0.79	4/19/2005 13:00	-0.52	4/19/2005 19:00	-0.13
4/19/2005 7:06	0.90	4/19/2005 13:06	-0.61	4/19/2005 19:06	-0.01
4/19/2005 7:12	0.99	4/19/2005 13:12	-0.68	4/19/2005 19:12	0.11
4/19/2005 7:18	1.06	4/19/2005 13:18	-0.80	4/19/2005 19:18	0.20
4/19/2005 7:24	1.15	4/19/2005 13:24	-0.86	4/19/2005 19:24	0.30
4/19/2005 7:30	1.25	4/19/2005 13:30	-0.93	4/19/2005 19:30	0.42
4/19/2005 7:36	1.31	4/19/2005 13:36	-1.00	4/19/2005 19:36	0.51
4/19/2005 7:42	1.36	4/19/2005 13:42	-1.08	4/19/2005 19:42	0.63
4/19/2005 7:48	1.45	4/19/2005 13:48	-1.15	4/19/2005 19:48	0.74
4/19/2005 7:54	1.52	4/19/2005 13:54	-1.25	4/19/2005 19:54	0.84
4/19/2005 8:00	1.59	4/19/2005 14:00	-1.34	4/19/2005 20:00	0.95
4/19/2005 8:06	1.63	4/19/2005 14:06	-1.41	4/19/2005 20:06	1.05
4/19/2005 8:12	1.66	4/19/2005 14:12	-1.47	4/19/2005 20:12	1.14
4/19/2005 8:18	1.70	4/19/2005 14:18	-1.54	4/19/2005 20:18	1.21
4/19/2005 8:24	1.75	4/19/2005 14:24	-1.61	4/19/2005 20:24	1.28
4/19/2005 8:30	1.80	4/19/2005 14:30	-1.65	4/19/2005 20:30	1.38
4/19/2005 8:36	1.80	4/19/2005 14:36	-1.72	4/19/2005 20:36	1.42
4/19/2005 8:42	1.83	4/19/2005 14:42	-1.77	4/19/2005 20:42	1.50
4/19/2005 8:48	1.85	4/19/2005 14:48	-1.81	4/19/2005 20:48	1.56
4/19/2005 8:54	1.87	4/19/2005 14:54	-1.88	4/19/2005 20:54	1.59
4/19/2005 9:00	1.89	4/19/2005 15:00	-1.92	4/19/2005 21:00	1.66
4/19/2005 9:06	1.89	4/19/2005 15:06	-1.95	4/19/2005 21:06	1.70
4/19/2005 9:12	1.90	4/19/2005 15:12	-2.01	4/19/2005 21:12	1.75
4/19/2005 9:18	1.90	4/19/2005 15:18	-2.03	4/19/2005 21:18	1.76
4/19/2005 9:24	1.90	4/19/2005 15:24	-2.07	4/19/2005 21:24	1.83
4/19/2005 9:30	1.90	4/19/2005 15:30	-2.10	4/19/2005 21:30	1.83
4/19/2005 9:36	1.90	4/19/2005 15:36	-2.12	4/19/2005 21:36	1.87
4/19/2005 9:42	1.87	4/19/2005 15:42	-2.16	4/19/2005 21:42	1.90
4/19/2005 9:48	1.85	4/19/2005 15:48	-2.16	4/19/2005 21:48	1.93
4/19/2005 9:54	1.83	4/19/2005 15:54	-2.16	4/19/2005 21:54	1.93
4/19/2005 10:00	1.82	4/19/2005 16:00	-2.21	4/19/2005 22:00	1.95
4/19/2005 10:06	1.77	4/19/2005 16:06	-2.25	4/19/2005 22:06	1.97
4/19/2005 10:12	1.75	4/19/2005 16:12	-2.24	4/19/2005 22:12	1.98
4/19/2005 10:18	1.73	4/19/2005 16:18	-2.24	4/19/2005 22:18	1.98
4/19/2005 10:24	1.66	4/19/2005 16:24	-2.24	4/19/2005 22:24	1.98
4/19/2005 10:30	1.61	4/19/2005 16:30	-2.23	4/19/2005 22:30	1.98
4/19/2005 10:36	1.56	4/19/2005 16:36	-2.23	4/19/2005 22:36	2.00
4/19/2005 10:42	1.52	4/19/2005 16:42	-2.23	4/19/2005 22:42	1.97
4/19/2005 10:48	1.42	4/19/2005 16:48	-2.18	4/19/2005 22:48	1.93
4/19/2005 10:54	1.36	4/19/2005 16:54	-2.15	4/19/2005 22:54	1.88
4/19/2005 11:00	1.29	4/19/2005 17:00	-2.13	4/19/2005 23:00	1.91
4/19/2005 11:06	1.22	4/19/2005 17:06	-2.06	4/19/2005 23:06	1.84
4/19/2005 11:12	1.12	4/19/2005 17:12	-1.99	4/19/2005 23:12	1.77
4/19/2005 11:18	1.03	4/19/2005 17:18	-1.94	4/19/2005 23:18	1.72
4/19/2005 11:24	0.94	4/19/2005 17:24	-1.86	4/19/2005 23:24	1.68
4/19/2005 11:30	0.85	4/19/2005 17:30	-1.79	4/19/2005 23:30	1.59

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/19/2005 23:36	1.50	4/20/2005 5:36	-1.55	4/20/2005 11:36	1.54
4/19/2005 23:42	1.43	4/20/2005 5:42	-1.48	4/20/2005 11:42	1.48
4/19/2005 23:48	1.36	4/20/2005 5:48	-1.39	4/20/2005 11:48	1.41
4/19/2005 23:54	1.24	4/20/2005 5:54	-1.30	4/20/2005 11:54	1.30
4/20/2005 0:00	1.18	4/20/2005 6:00	-1.18	4/20/2005 12:00	1.21
4/20/2005 0:06	1.08	4/20/2005 6:06	-1.09	4/20/2005 12:06	1.11
4/20/2005 0:12	0.99	4/20/2005 6:12	-0.97	4/20/2005 12:12	1.02
4/20/2005 0:18	0.90	4/20/2005 6:18	-0.86	4/20/2005 12:18	0.91
4/20/2005 0:24	0.81	4/20/2005 6:24	-0.74	4/20/2005 12:24	0.82
4/20/2005 0:30	0.71	4/20/2005 6:30	-0.65	4/20/2005 12:30	0.73
4/20/2005 0:36	0.62	4/20/2005 6:36	-0.52	4/20/2005 12:36	0.64
4/20/2005 0:42	0.55	4/20/2005 6:42	-0.40	4/20/2005 12:42	0.51
4/20/2005 0:48	0.48	4/20/2005 6:48	-0.28	4/20/2005 12:48	0.41
4/20/2005 0:54	0.36	4/20/2005 6:54	-0.19	4/20/2005 12:54	0.33
4/20/2005 1:00	0.27	4/20/2005 7:00	-0.06	4/20/2005 13:00	0.21
4/20/2005 1:06	0.21	4/20/2005 7:06	0.06	4/20/2005 13:06	0.12
4/20/2005 1:12	0.11	4/20/2005 7:12	0.17	4/20/2005 13:12	0.03
4/20/2005 1:18	0.02	4/20/2005 7:18	0.27	4/20/2005 13:18	-0.09
4/20/2005 1:24	-0.05	4/20/2005 7:24	0.41	4/20/2005 13:24	-0.18
4/20/2005 1:30	-0.14	4/20/2005 7:30	0.50	4/20/2005 13:30	-0.26
4/20/2005 1:36	-0.22	4/20/2005 7:36	0.61	4/20/2005 13:36	-0.38
4/20/2005 1:42	-0.31	4/20/2005 7:42	0.73	4/20/2005 13:42	-0.44
4/20/2005 1:48	-0.40	4/20/2005 7:48	0.82	4/20/2005 13:48	-0.54
4/20/2005 1:54	-0.49	4/20/2005 7:54	0.96	4/20/2005 13:54	-0.63
4/20/2005 2:00	-0.58	4/20/2005 8:00	1.03	4/20/2005 14:00	-0.69
4/20/2005 2:06	-0.68	4/20/2005 8:06	1.14	4/20/2005 14:06	-0.76
4/20/2005 2:12	-0.74	4/20/2005 8:12	1.26	4/20/2005 14:12	-0.85
4/20/2005 2:18	-0.85	4/20/2005 8:18	1.33	4/20/2005 14:18	-0.94
4/20/2005 2:24	-0.95	4/20/2005 8:24	1.42	4/20/2005 14:24	-1.01
4/20/2005 2:30	-1.04	4/20/2005 8:30	1.51	4/20/2005 14:30	-1.10
4/20/2005 2:36	-1.13	4/20/2005 8:36	1.58	4/20/2005 14:36	-1.20
4/20/2005 2:42	-1.20	4/20/2005 8:42	1.68	4/20/2005 14:42	-1.28
4/20/2005 2:48	-1.27	4/20/2005 8:48	1.74	4/20/2005 14:48	-1.37
4/20/2005 2:54	-1.36	4/20/2005 8:54	1.81	4/20/2005 14:54	-1.43
4/20/2005 3:00	-1.42	4/20/2005 9:00	1.86	4/20/2005 15:00	-1.50
4/20/2005 3:06	-1.49	4/20/2005 9:06	1.92	4/20/2005 15:06	-1.59
4/20/2005 3:12	-1.56	4/20/2005 9:12	1.97	4/20/2005 15:12	-1.66
4/20/2005 3:18	-1.63	4/20/2005 9:18	1.99	4/20/2005 15:18	-1.74
4/20/2005 3:24	-1.70	4/20/2005 9:24	2.02	4/20/2005 15:24	-1.83
4/20/2005 3:30	-1.76	4/20/2005 9:30	2.06	4/20/2005 15:30	-1.92
4/20/2005 3:36	-1.81	4/20/2005 9:36	2.08	4/20/2005 15:36	-1.98
4/20/2005 3:42	-1.88	4/20/2005 9:42	2.08	4/20/2005 15:42	-2.07
4/20/2005 3:48	-1.90	4/20/2005 9:48	2.10	4/20/2005 15:48	-2.13
4/20/2005 3:54	-1.95	4/20/2005 9:54	2.12	4/20/2005 15:54	-2.20
4/20/2005 4:00	-1.99	4/20/2005 10:00	2.14	4/20/2005 16:00	-2.27
4/20/2005 4:06	-2.01	4/20/2005 10:06	2.14	4/20/2005 16:06	-2.33
4/20/2005 4:12	-2.04	4/20/2005 10:12	2.12	4/20/2005 16:12	-2.42
4/20/2005 4:18	-2.06	4/20/2005 10:18	2.12	4/20/2005 16:18	-2.46
4/20/2005 4:24	-2.06	4/20/2005 10:24	2.12	4/20/2005 16:24	-2.52
4/20/2005 4:30	-2.06	4/20/2005 10:30	2.08	4/20/2005 16:30	-2.59
4/20/2005 4:36	-2.06	4/20/2005 10:36	2.08	4/20/2005 16:36	-2.63
4/20/2005 4:42	-2.04	4/20/2005 10:42	2.05	4/20/2005 16:42	-2.65
4/20/2005 4:48	-2.01	4/20/2005 10:48	2.01	4/20/2005 16:48	-2.72
4/20/2005 4:54	-1.99	4/20/2005 10:54	1.96	4/20/2005 16:54	-2.69
4/20/2005 5:00	-1.95	4/20/2005 11:00	1.94	4/20/2005 17:00	-2.73
4/20/2005 5:06	-1.90	4/20/2005 11:06	1.91	4/20/2005 17:06	-2.73
4/20/2005 5:12	-1.85	4/20/2005 11:12	1.84	4/20/2005 17:12	-2.70
4/20/2005 5:18	-1.78	4/20/2005 11:18	1.79	4/20/2005 17:18	-2.72
4/20/2005 5:24	-1.71	4/20/2005 11:24	1.75	4/20/2005 17:24	-2.67
4/20/2005 5:30	-1.64	4/20/2005 11:30	1.66	4/20/2005 17:30	-2.64

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/20/2005 17:36	-2.60	4/20/2005 23:36	2.17	4/21/2005 5:36	-2.46
4/20/2005 17:42	-2.55	4/20/2005 23:42	2.15	4/21/2005 5:42	-2.43
4/20/2005 17:48	-2.48	4/20/2005 23:48	2.10	4/21/2005 5:48	-2.43
4/20/2005 17:54	-2.40	4/20/2005 23:54	2.08	4/21/2005 5:54	-2.38
4/20/2005 18:00	-2.31	4/21/2005 0:00	2.04	4/21/2005 6:00	-2.31
4/20/2005 18:06	-2.24	4/21/2005 0:06	1.99	4/21/2005 6:06	-2.25
4/20/2005 18:12	-2.13	4/21/2005 0:12	1.92	4/21/2005 6:12	-2.18
4/20/2005 18:18	-2.01	4/21/2005 0:18	1.85	4/21/2005 6:18	-2.08
4/20/2005 18:24	-1.85	4/21/2005 0:24	1.79	4/21/2005 6:24	-1.99
4/20/2005 18:30	-1.75	4/21/2005 0:30	1.72	4/21/2005 6:30	-1.89
4/20/2005 18:36	-1.64	4/21/2005 0:36	1.60	4/21/2005 6:36	-1.78
4/20/2005 18:42	-1.50	4/21/2005 0:42	1.51	4/21/2005 6:42	-1.66
4/20/2005 18:48	-1.38	4/21/2005 0:48	1.44	4/21/2005 6:48	-1.55
4/20/2005 18:54	-1.24	4/21/2005 0:54	1.35	4/21/2005 6:54	-1.43
4/20/2005 19:00	-1.12	4/21/2005 1:00	1.26	4/21/2005 7:00	-1.30
4/20/2005 19:06	-1.00	4/21/2005 1:06	1.15	4/21/2005 7:06	-1.17
4/20/2005 19:12	-0.86	4/21/2005 1:12	1.06	4/21/2005 7:12	-1.06
4/20/2005 19:18	-0.72	4/21/2005 1:18	0.94	4/21/2005 7:18	-0.92
4/20/2005 19:24	-0.60	4/21/2005 1:24	0.83	4/21/2005 7:24	-0.78
4/20/2005 19:30	-0.46	4/21/2005 1:30	0.74	4/21/2005 7:30	-0.68
4/20/2005 19:36	-0.32	4/21/2005 1:36	0.62	4/21/2005 7:36	-0.52
4/20/2005 19:42	-0.20	4/21/2005 1:42	0.53	4/21/2005 7:42	-0.42
4/20/2005 19:48	-0.06	4/21/2005 1:48	0.41	4/21/2005 7:48	-0.28
4/20/2005 19:54	0.08	4/21/2005 1:54	0.30	4/21/2005 7:54	-0.15
4/20/2005 20:00	0.22	4/21/2005 2:00	0.20	4/21/2005 8:00	-0.04
4/20/2005 20:06	0.34	4/21/2005 2:06	0.11	4/21/2005 8:06	0.09
4/20/2005 20:12	0.48	4/21/2005 2:12	-0.01	4/21/2005 8:12	0.22
4/20/2005 20:18	0.57	4/21/2005 2:18	-0.08	4/21/2005 8:18	0.35
4/20/2005 20:24	0.71	4/21/2005 2:24	-0.18	4/21/2005 8:24	0.46
4/20/2005 20:30	0.80	4/21/2005 2:30	-0.32	4/21/2005 8:30	0.60
4/20/2005 20:36	0.94	4/21/2005 2:36	-0.43	4/21/2005 8:36	0.70
4/20/2005 20:42	1.06	4/21/2005 2:42	-0.56	4/21/2005 8:42	0.81
4/20/2005 20:48	1.17	4/21/2005 2:48	-0.64	4/21/2005 8:48	0.90
4/20/2005 20:54	1.27	4/21/2005 2:54	-0.75	4/21/2005 8:54	1.00
4/20/2005 21:00	1.34	4/21/2005 3:00	-0.87	4/21/2005 9:00	1.11
4/20/2005 21:06	1.43	4/21/2005 3:06	-0.96	4/21/2005 9:06	1.17
4/20/2005 21:12	1.55	4/21/2005 3:12	-1.07	4/21/2005 9:12	1.26
4/20/2005 21:18	1.60	4/21/2005 3:18	-1.18	4/21/2005 9:18	1.35
4/20/2005 21:24	1.67	4/21/2005 3:24	-1.27	4/21/2005 9:24	1.44
4/20/2005 21:30	1.71	4/21/2005 3:30	-1.37	4/21/2005 9:30	1.48
4/20/2005 21:36	1.78	4/21/2005 3:36	-1.45	4/21/2005 9:36	1.54
4/20/2005 21:42	1.83	4/21/2005 3:42	-1.57	4/21/2005 9:42	1.61
4/20/2005 21:48	1.87	4/21/2005 3:48	-1.66	4/21/2005 9:48	1.67
4/20/2005 21:54	1.92	4/21/2005 3:54	-1.75	4/21/2005 9:54	1.73
4/20/2005 22:00	1.95	4/21/2005 4:00	-1.84	4/21/2005 10:00	1.77
4/20/2005 22:06	2.02	4/21/2005 4:06	-1.91	4/21/2005 10:06	1.84
4/20/2005 22:12	2.04	4/21/2005 4:12	-1.98	4/21/2005 10:12	1.88
4/20/2005 22:18	2.07	4/21/2005 4:18	-2.05	4/21/2005 10:18	1.94
4/20/2005 22:24	2.09	4/21/2005 4:24	-2.14	4/21/2005 10:24	1.99
4/20/2005 22:30	2.14	4/21/2005 4:30	-2.18	4/21/2005 10:30	2.03
4/20/2005 22:36	2.14	4/21/2005 4:36	-2.23	4/21/2005 10:36	2.06
4/20/2005 22:42	2.15	4/21/2005 4:42	-2.28	4/21/2005 10:42	2.07
4/20/2005 22:48	2.17	4/21/2005 4:48	-2.37	4/21/2005 10:48	2.09
4/20/2005 22:54	2.20	4/21/2005 4:54	-2.39	4/21/2005 10:54	2.11
4/20/2005 23:00	2.19	4/21/2005 5:00	-2.43	4/21/2005 11:00	2.13
4/20/2005 23:06	2.21	4/21/2005 5:06	-2.43	4/21/2005 11:06	2.13
4/20/2005 23:12	2.21	4/21/2005 5:12	-2.45	4/21/2005 11:12	2.10
4/20/2005 23:18	2.19	4/21/2005 5:18	-2.45	4/21/2005 11:18	2.07
4/20/2005 23:24	2.19	4/21/2005 5:24	-2.48	4/21/2005 11:24	2.06
4/20/2005 23:30	2.19	4/21/2005 5:30	-2.48	4/21/2005 11:30	2.01

APPENDIX C

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

TIDE GAGE DATA

UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE	UNIVERSAL TIME (UTC) YYYY/MM/DD HH:MM	NAVD88 (FEET) TIDE
4/21/2005 11:36	1.96	4/21/2005 17:36	-2.87		
4/21/2005 11:42	1.91	4/21/2005 17:42	-2.82		
4/21/2005 11:48	1.85	4/21/2005 17:48	-2.80		
4/21/2005 11:54	1.83	4/21/2005 17:54	-2.73		
4/21/2005 12:00	1.75	4/21/2005 18:00	-2.66		
4/21/2005 12:06	1.66	4/21/2005 18:06	-2.62		
4/21/2005 12:12	1.56	4/21/2005 18:12	-2.52		
4/21/2005 12:18	1.54	4/21/2005 18:18	-2.43		
4/21/2005 12:24	1.47	4/21/2005 18:24	-2.34		
4/21/2005 12:30	1.35	4/21/2005 18:30	-2.20		
4/21/2005 12:36	1.25	4/21/2005 18:36	-2.11		
4/21/2005 12:42	1.18	4/21/2005 18:42	-1.99		
4/21/2005 12:48	1.10	4/21/2005 18:48	-1.88		
4/21/2005 12:54	1.02	4/21/2005 18:54	-1.74		
4/21/2005 13:00	0.92	4/21/2005 19:00	-1.62		
4/21/2005 13:06	0.80	4/21/2005 19:06	-1.48		
4/21/2005 13:12	0.71	4/21/2005 19:12	-1.34		
4/21/2005 13:18	0.62	4/21/2005 19:18	-1.21		
4/21/2005 13:24	0.52	4/21/2005 19:24	-1.04		
4/21/2005 13:30	0.45	4/21/2005 19:30	-0.91		
4/21/2005 13:36	0.36	4/21/2005 19:36	-0.75		
4/21/2005 13:42	0.25	4/21/2005 19:42	-0.61		
4/21/2005 13:48	0.17	4/21/2005 19:48	-0.48		
4/21/2005 13:54	0.07	4/21/2005 19:54	-0.36		
4/21/2005 14:00	0.00	4/21/2005 20:00	-0.22		
4/21/2005 14:06	-0.10	4/21/2005 20:06	-0.09		
4/21/2005 14:12	-0.21	4/21/2005 20:12	0.04		
4/21/2005 14:18	-0.29	4/21/2005 20:18	0.16		
4/21/2005 14:24	-0.38	4/21/2005 20:24	0.29		
4/21/2005 14:30	-0.47	4/21/2005 20:30	0.43		
4/21/2005 14:36	-0.59	4/21/2005 20:36	0.57		
4/21/2005 14:42	-0.72	4/21/2005 20:42	0.68		
4/21/2005 14:48	-0.84	4/21/2005 20:54	0.93		
4/21/2005 14:54	-0.98	4/21/2005 21:00	1.04		
4/21/2005 15:00	-1.09				
4/21/2005 15:06	-1.20				
4/21/2005 15:12	-1.34				
4/21/2005 15:18	-1.48				
4/21/2005 15:24	-1.60				
4/21/2005 15:30	-1.73				
4/21/2005 15:36	-1.85				
4/21/2005 15:42	-1.98				
4/21/2005 15:48	-2.07				
4/21/2005 15:54	-2.18				
4/21/2005 16:00	-2.27				
4/21/2005 16:06	-2.37				
4/21/2005 16:12	-2.46				
4/21/2005 16:18	-2.52				
4/21/2005 16:24	-2.57				
4/21/2005 16:30	-2.62				
4/21/2005 16:36	-2.69				
4/21/2005 16:42	-2.73				
4/21/2005 16:48	-2.75				
4/21/2005 16:54	-2.82				
4/21/2005 17:00	-2.87				
4/21/2005 17:06	-2.87				
4/21/2005 17:12	-2.90				
4/21/2005 17:18	-2.89				
4/21/2005 17:24	-2.89				
4/21/2005 17:30	-2.87				

Appendix D

Side-Scan Sonar Results (As Provided by OSI, Inc.)

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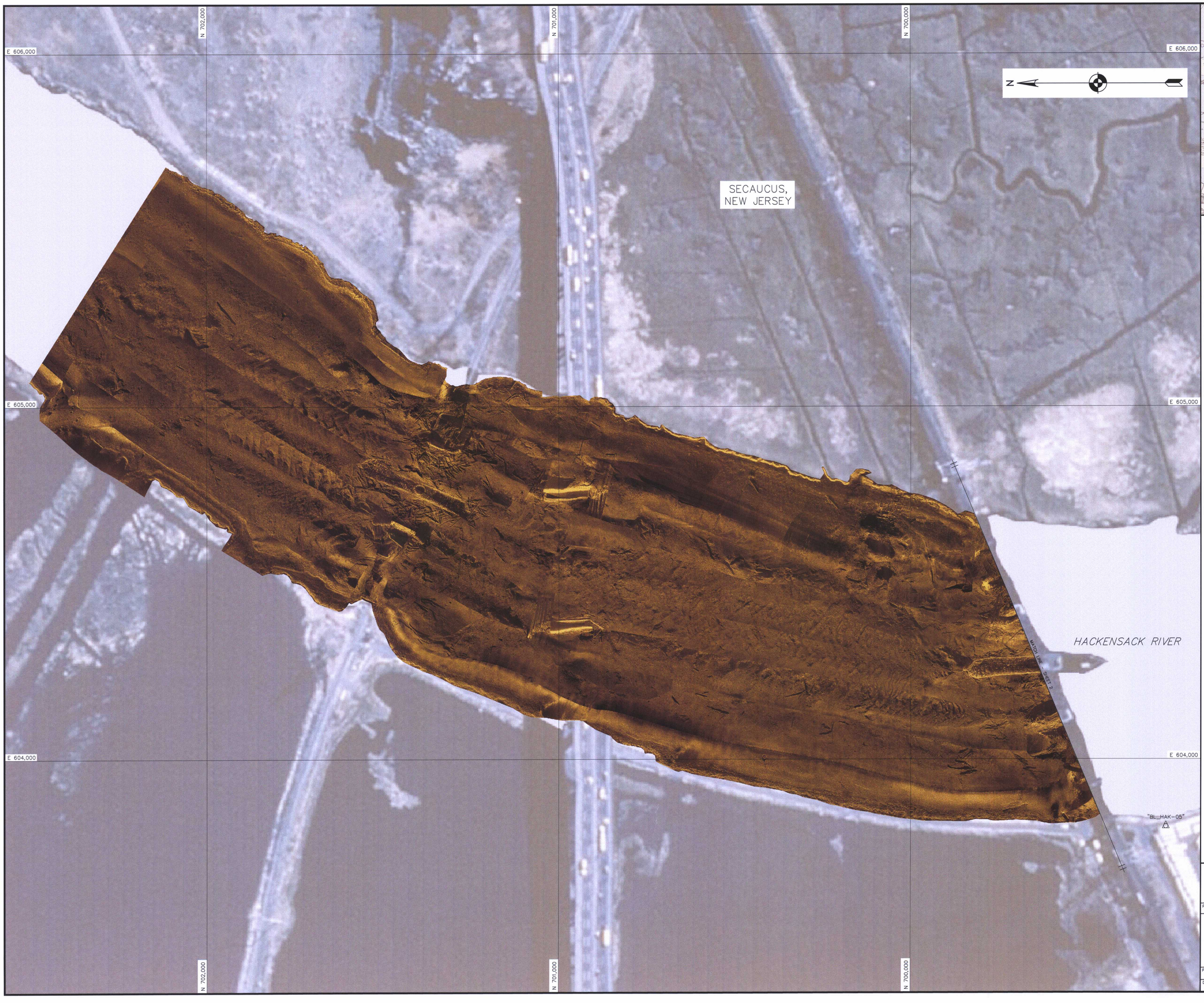

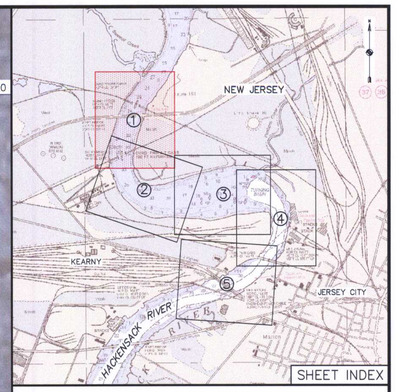

SHEET INDEX

LEGEND:

△ CONTROL POINT

CONTROL POINTS

DESIGNATION	NEW JERSEY STATE PLANE NAD 83, FEET		ELEVATION NAVD 88 FEET
	EASTING	NORTHING	
BL_HAK-01	603,928.96	698,923.23	7.28
BL_HAK-04	603,951.17	698,774.43	4.13
BL_HAK-05	603,809.56	699,274.37	7.41

NOTES:

1. GRID SYSTEM IS IN FEET AND IS THE NEW JERSEY STATE PLANE COORDINATE SYSTEM, NAD83.
2. SHORELINE AND ONSHORE FEATURES ARE APPROXIMATE AND WERE TAKEN FROM DIGITAL ORTHOPHOTO QUADRANGLES FLOWN IN 2002 AND OBTAINED FROM THE NEW JERSEY GEOGRAPHIC INFORMATION NETWORK (NJGIN).
3. THE INFORMATION PRESENTED ON THIS CHART REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY OCEAN SURVEYS, INC. ON 19-31 MARCH 2005 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO OSI.

SCALE: 1"=100'

100 0 100 200 300

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OLD SAYBROOK, CONNECTICUT

(860) 388-4631

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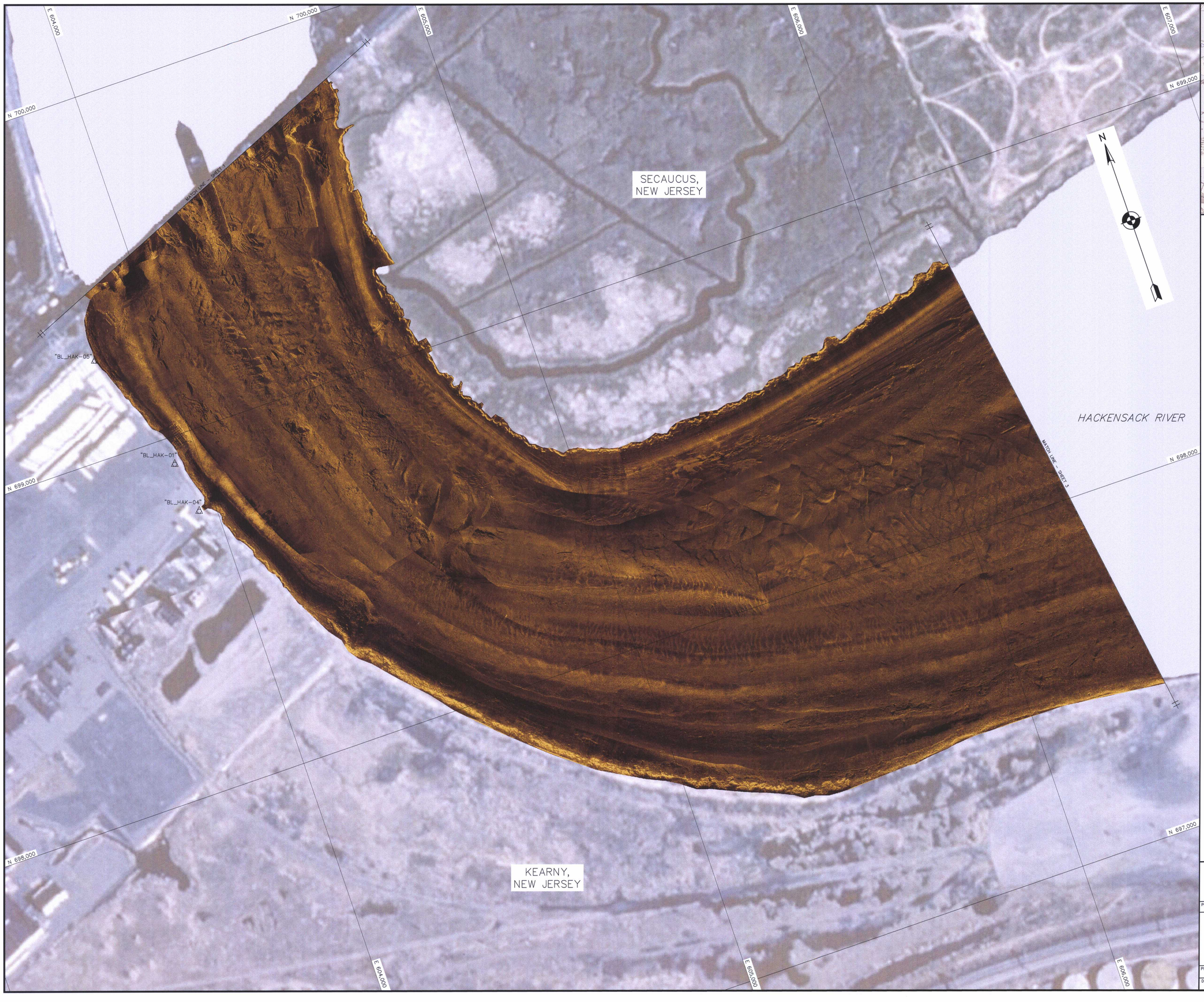
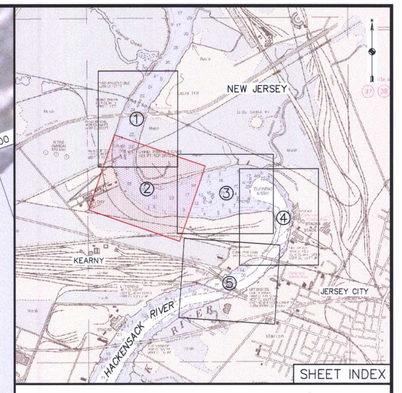
PREPARED FOR: BLASLAND, BOUCK & LEE, INC.

SIDE SCAN SONAR MOSAIC
RECONNAISSANCE PHASE SURVEY
HACKENSACK RIVER STUDY AREA
NEW JERSEY

PROJECT MANAGER:	SURVEY DATE:	SCALE:
R.M. WALLACE	19-31 MARCH 2005	1" = 100'
DRAFTED BY: A.M. RIZZO	DATE: 2 MAY 2005	DRAWING NUMBER: 05ESO02.2





SHEET INDEX

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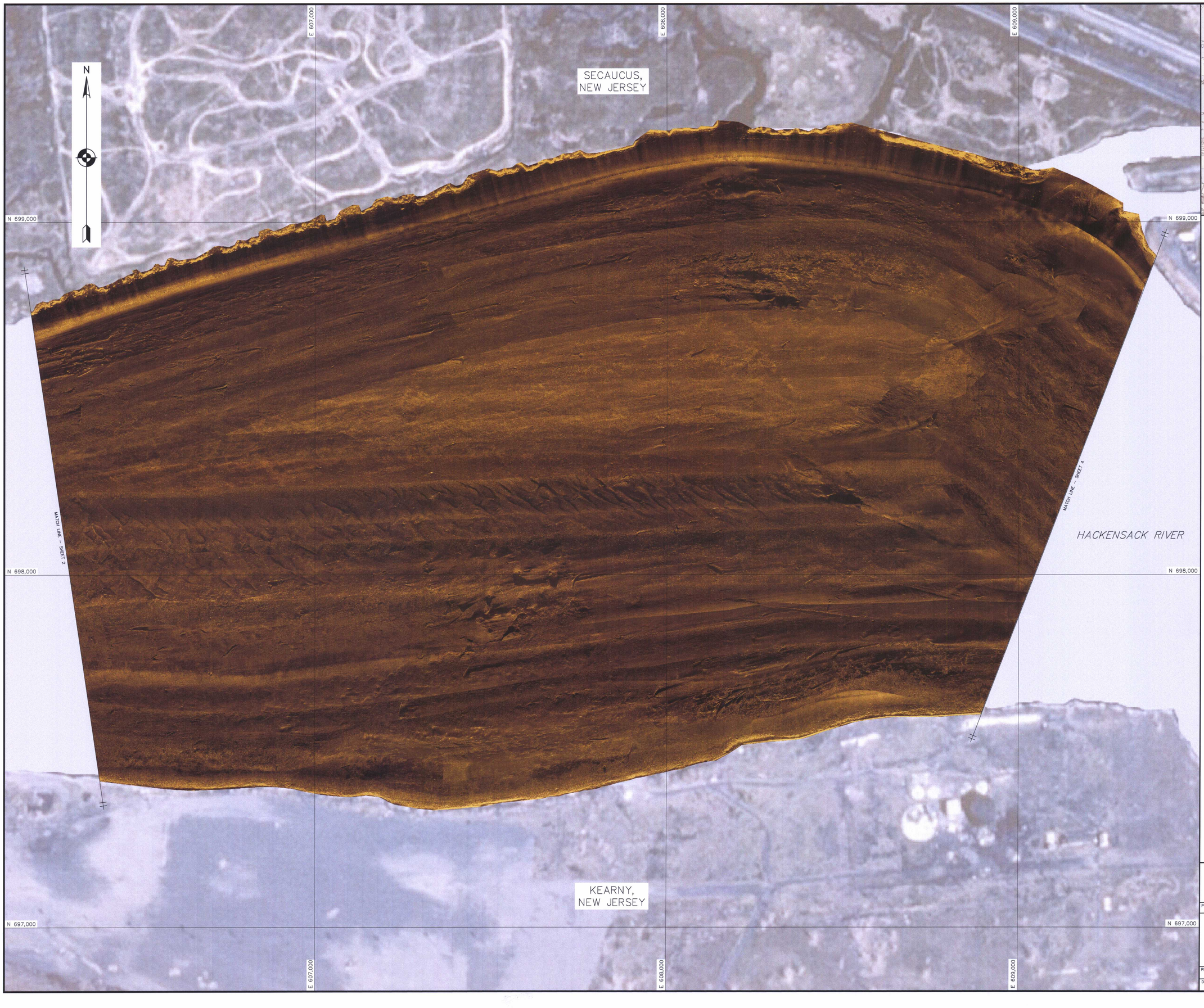
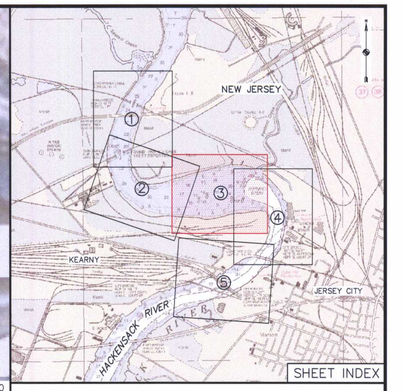
R.M. WALLACE	19–31 MARCH 2005	1" = 100'
DRAFTED BY: A.M. RIZZO	DATE: 2 MAY 2005	DRAWING NUMBER: 05ES002.2





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A.M. RIZZO	2 MAY 2005	05ES002.2

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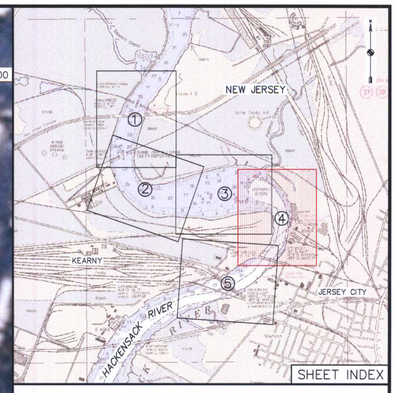
HACKENSACK RIVER

MATCH LINE - SHEET 3



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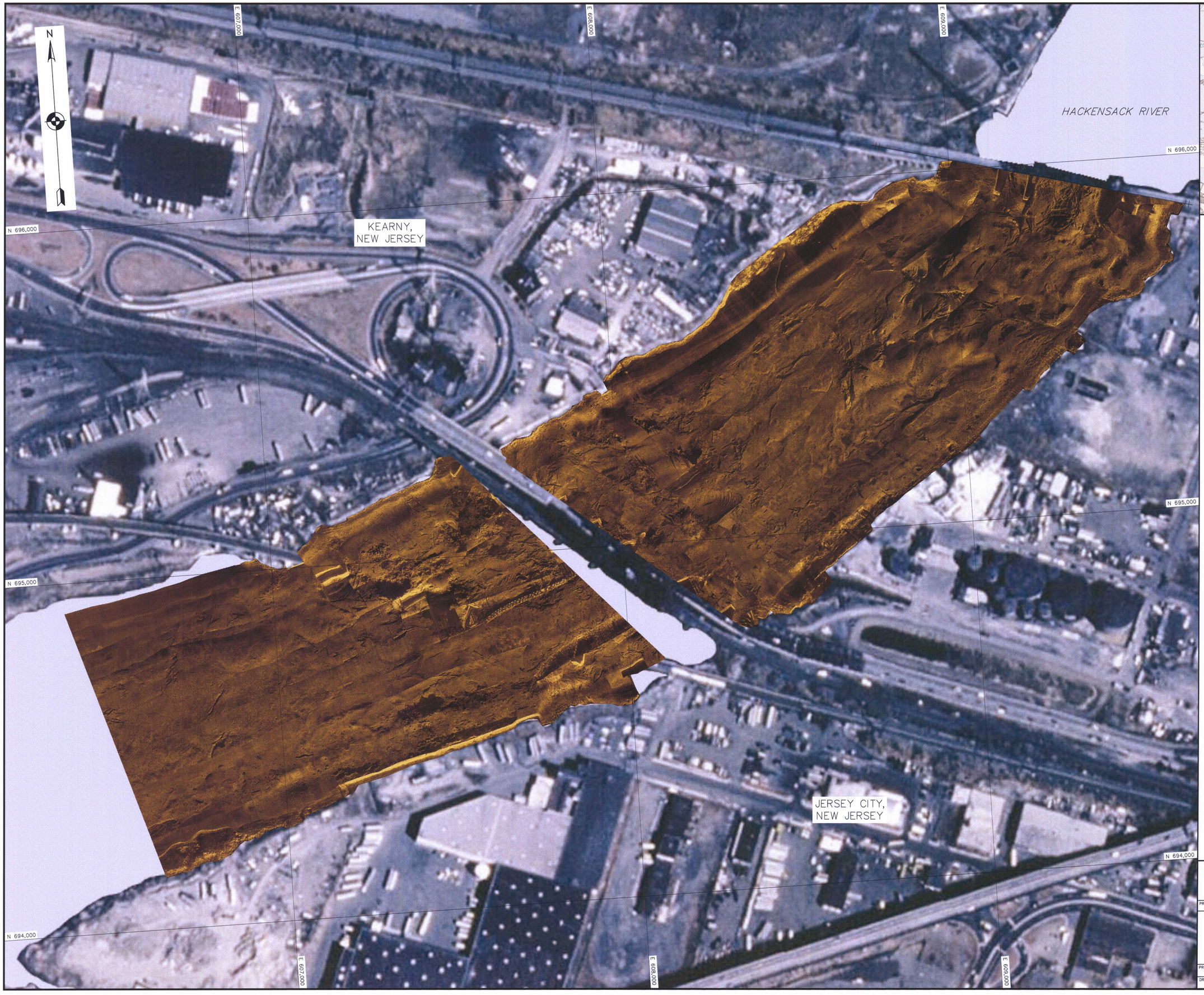

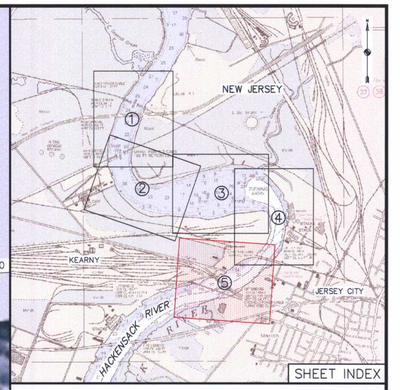

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DRAFTED BY: A.M. RIZZO	DATE: 2 MAY 2005	DRAWING NUMBER: 05ES002.2

Appendix E

Sediment Probing Field Information

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APPENDIX E

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR01-01	606316.44	694902.12	3/31/2005	9:15:00 AM	606314.80	694902.00	1.6	-1.8	2.1	13.7	silt over stiff silt	
HRTR01-02	606332.15	694854.65	3/31/2005	7:26:00 AM	606330.70	694855.40	1.6	-3.8	2.1	19.7	silt over stiff silt	
HRTR01-03	606347.86	694807.19	3/31/2005	7:31:00 AM	606347.90	694807.30	0.1	-13.2	11.5	13.3	silt over stiff silt	
HRTR01-04	606363.57	694759.72	3/31/2005	7:49:00 AM	606367.00	694759.10	3.5	-21.7	20.1	12.8	silt over stiff silt/clay	
HRTR01-05	606379.28	694712.25	3/31/2005	8:39:00 AM	606381.35	694713.11	2.2	-35.7	35.1	3.8	stiff silt and sand over moderate to stiff silt/clay	3/4" probe rob
HRTR01-06	606394.99	694664.78	3/31/2005	8:43:00 AM	606395.17	694664.02	0.8	-37.5	36.8	2.8	stiff silt and sand over moderate to stiff silt	3/4" probe rod
HRTR01-07	606410.70	694617.31	3/31/2005	8:05:00 AM	606410.74	694618.91	1.6	-36.5	35.5	2.6	sandy silt with some gravel over stiff silt/clay	3/4" probe rod
HRTR01-08	606426.41	694569.85	3/31/2005	8:45:00 AM	606422.11	694572.19	4.9	-38.7	38.0	3.2	stiff silt and sand with some fine gravel over stiff silt/clay	3/4" probe rod
HRTR01-09	606442.12	694522.38	3/31/2005	7:32:00 AM	606444.32	694522.79	2.2	-37.5	35.9	2.1	stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR01-10	606457.82	694474.91	3/31/2005	7:41:00 AM	606458.62	694474.42	0.9	-39.1	37.6	1.0	sandy silt over hard bottom/rock	3/4" probe rod
HRTR01-11	606473.53	694427.44	3/31/2005	7:48:00 AM	606473.89	694428.15	0.8	-39.2	37.8	2.1	stiff sandy silt over stiff silt	3/4" probe rod
HRTR01-12	606489.24	694379.97	3/31/2005	7:47:00 AM	606489.76	694382.61	2.7	-38.9	37.5	2.5	sandy silt over stiff silt/clay, 3/4" probe rod	3/4" probe rod
HRTR01-13	606504.95	694332.51	3/31/2005	7:57:00 AM	606503.79	694334.84	2.6	-37.5	36.3	1.9	stiff sandy silt over stiff silt with some fine sand	
HRTR01-14	606520.66	694285.04	3/31/2005	7:55:00 AM	606520.84	694286.08	1.1	-37.1	35.9	2.4	stiff sandy silt over stiff silt/clay with some fine sand	
HRTR01-15	606536.37	694237.57	3/31/2005	7:59:00 AM	606537.77	694239.31	2.2	-26.6	25.5	4.5	moderate to stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR01-16	606552.08	694190.10	3/31/2005	8:20:00 AM	606547.60	694189.40	4.5	-15.7	13.8	7.4	silt over stiff silt	
HRTR01-17	606567.79	694142.63	3/31/2005	8:02:00 AM	606567.60	694143.90	1.3	0.1	0.0	1.9	silt fine sand over clay	exposed sediment locations near shore
HRTR01-18	606570.69	694133.88	3/31/2005	8:04:00 AM	606570.70	694132.70	1.2	1.5	0.0	1.4	silt fine sand and gravel over rock	exposed sediment locations near shore
HRTR02-01	606809.52	695061.45	3/31/2005	9:24:00 AM	606802.80	695041.70	20.9	0.1	0.5	8.1	silt over moderate to stiff silt over stiff silt/clay	location moved to edge of water; original target location fell on shore
HRTR02-02	606823.41	695013.42	3/31/2005	8:42:00 AM	606823.60	695010.60	2.8	-1.5	1.2	14.0	silt over stiff silt	
HRTR02-03	606837.30	694965.39	3/31/2005	8:55:00 AM	606835.20	694965.80	2.1	-5.0	4.9	11.8	silt over stiff silt	
HRTR02-04	606851.18	694917.36	3/31/2005	8:57:00 AM	606850.30	694919.10	2.0	-19.0	19.0	12.3	silt over stiff silt	
HRTR02-05	606865.07	694869.33	3/31/2005	11:18:00 AM	606863.92	694868.85	1.2	-28.8	31.3	5.3	soft to moderate silt with some fine sand over stiff silt	3/4" probe rod
HRTR02-06	606878.96	694821.29	3/31/2005	11:20:00 AM	606880.52	694821.80	1.6	-30.3	32.8	4.6	soft to moderate silt trace sand over stiff silt	3/4" probe rod
HRTR02-07	606892.85	694773.26	3/31/2005	10:55:00 AM	606896.87	694772.00	4.2	-38.1	40.1	2.2	stiff sand some gravel over hard bottom	3/4" probe rod
HRTR02-08	606906.74	694725.23	3/31/2005	10:33:00 AM	606908.64	694727.50	3.0	-37.6	39.1	0.2	stiff sand over hard bottom	3/4" probe rod
HRTR02-09	606920.63	694677.20	3/31/2005	10:35:00 AM	606921.34	694673.43	3.8	-37.1	38.6	0.5	stiff sand and silt over hard bottom	3/4" probe rod
HRTR02-10	606934.52	694629.16	3/31/2005	10:01:00 AM	606938.07	694629.87	3.6	-38.9	40.1	0.3	stiff sand and gravel over stiff bottom	3/4" probe rod
HRTR02-11	606948.41	694581.13	3/31/2005	10:03:00 AM	606950.13	694583.38	2.8	-39.5	40.7	0.6	stiff sand and gravel over hard bottom	3/4" probe rod
HRTR02-12	606962.29	694533.10	3/31/2005	9:44:00 AM	606963.38	694533.46	1.1	-43.1	43.9	0.6	stiff sand with some fine gravel over stiff bottom	3/4" probe rod
HRTR02-13	606976.18	694485.07	3/31/2005	9:46:00 AM	606978.17	694486.46	2.4	-43.8	44.6	1.1	stiff sand and silt with some fine gravel over stiff bottom	3/4" probe rod
HRTR02-14	606990.07	694437.03	3/31/2005	9:23:00 AM	606991.47	694434.14	3.2	-46.2	47.0	1.0	stiff sand and gravel over hard bottom	3/4" probe rod
HRTR02-15	607003.96	694389.00	3/31/2005	9:12:00 AM	607005.51	694390.42	2.1	-34.9	35.0	0.3	sand and gravel over rock	
HRTR02-16	607017.85	694340.97	3/31/2005	9:14:00 AM	607018.22	694341.27	0.5	-33.1	33.7	1.7	sand and gravel over stiff silt/clay	3/4" probe rod
HRTR02-17	607031.74	694292.94	3/31/2005	8:29:00 AM	607028.30	694292.60	3.5	-1.9	1.2	0.0	gravel fine to course sand	
HRTR02-18	607036.85	694275.24	3/31/2005	8:37:00 AM	607028.30	694274.60	8.6	0.9	0.0	1.0	silt fine sand over gravel over rock	could not get within 5 ft due to debris on shore (razor wire); exposed sediment locations near shore
HRTR03-01	607221.65	695182.99	3/31/2005	10:00:00 AM	607221.65	695182.99	0.0	0.0	0.0	0.0		location falls on shore by approx 50 ft
HRTR03-02	607242.96	695137.76	3/31/2005	9:57:00 AM	607243.30	695135.30	2.5	0.6	0.5	0.0	rock location at edge of water	
HRTR03-03	607264.27	695092.53	3/31/2005	10:08:00 AM	607261.90	695092.70	2.4	-20.5	21.8	5.9	fine to coarse sand over silt	
HRTR03-04	607285.58	695047.30	4/1/2005	7:22:00 AM	607285.37	695050.52	3.2	-32.5	30.9	4.3	moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR03-05	607306.89	695002.07	4/1/2005	7:40:00 AM	607309.04	694999.29	3.5	-31.6	30.1	1.7	stiff sand some fine gravel over stiff silt/clay	3/4" probe rod
HRTR03-06	607328.20	694956.84	4/1/2005	7:39:00 AM	607328.87	694954.93	2.0	-30.0	28.6	1.8	fine to medium sand some gravel over rock	3/4" probe rod
HRTR03-07	607349.52	694911.61	4/1/2005	7:42:00 AM	607349.52	694911.60	0.0	0.0	0.0	0.0		under bridge
HRTR03-08	607370.83	694866.38	3/31/2005	1:48:00 PM	607371.00	694866.38	0.2	0.0	0.0	0.0		under bridge
HRTR03-09	607392.14	694821.15	3/31/2005	2:03:00 PM	607391.16	694817.16	4.1	-40.0	42.0	0.3	stiff sand with some fine gravel over hard bottom	3/4" probe rod
HRTR03-10	607413.45	694775.91	3/31/2005	2:11:00 PM	607412.91	694773.22	2.7	-37.6	39.1	2.3	silt with some fine sand over stiff silt/clay	3/4" probe rod
HRTR03-11	607434.76	694730.68	3/31/2005	2:59:00 PM	607433.30	694726.22	4.7	-36.3	37.8	1.8	moderate to stiff silt with some fine sand over stiff silt/clay	3/4" probe rod
HRTR03-12	607456.07	694685.45	4/1/2005	7:44:00 AM	607456.20	694685.79	0.4	-49.2	47.8	0.6	tight fine to coarse sand over stiff silt/clay	3/4" probe rod
HRTR03-13	607477.38	694640.22	4/1/2005	7:54:00 AM	607476.85	694639.27	1.1	-49.9	48.5	0.8	tight sand and gravel over stiff silt/clay	3/4" probe rod
HRTR03-14	607498.69	694594.99	3/31/2005	3:01:00 PM	607495.89	694593.01	3.4	-31.9	34.6	0.6	sand and gravel over stiff bottom/clay	3/4" probe rod
HRTR03-15	607520.00	694549.76	3/31/2005	12:54:00 PM	607521.73	694548.72	2.0	-36.3	39.1	2.1	soft to moderate sandy silt over stiff silt	3/4" probe rod
HRTR03-16	607541.31	694504.53	3/31/2005	12:56:00 PM	607542.70	694504.70	1.4	-36.0	38.8	3.3	soft to moderate sandy silt over stiff silt/clay	3/4" probe rod
HRTR03-17	607545.78	694495.05	3/31/2005	12:58:00 PM	607549.76	694494.62	4.0	-35.7	38.4	3.3	soft to moderate sandy silt over stiff silt	3/4" probe rod
HRTR04-01	607717.42	695303.86	4/5/2005	7:42:00 AM	607717.42	695303.86	0.0	0.0	0.0	0.0		location on shore 60' west at high tide
HRTR04-02	607756.56	695272.74	4/5/2005	9:38:00 AM	607755.18	695272.14	1.5	-23.1	23.4	12.8	fine to coarse sand over rock	3/4" probe rod
HRTR04-03	607795.69	695241.63	4/5/2005	9:43:00 AM	607797.43	695241.93	1.8	-24.0	24.2	9.1	fine to coarse sand over stiff silt over clay/rock	3/4" probe rod
HRTR04-04	607834.83	695210.51	4/1/2005	8:08:00 AM	607838.98	695211.37	4.2	-34.2	32.9	6.2	soft to moderate silt over stiff silt	3/4" probe rod
HRTR04-05	607873.96	695179.39	4/1/2005	8:16:00 AM	607870.63	695180.79	3.6	-31.7	30.5	4.1	soft to moderate silt over stiff silt	3/4" probe rod
HRTR04-06	607913.10	695148.27	4/1/2005	8:20:00 AM	607911.96	695145.23	3.2	-32.8	31.6	4.4	soft to moderate silt over stiff silt	3/4" probe rod
HRTR04-07	607952.24	695117.15	4/1/2005	8:23:00 AM	607953.50	695119.43	2.6	-32.5	31.4	3.4	fine to coarse sand over stiff silt/clay	3/4" probe rod
HRTR04-08	607991.37	695086.03	4/1/2005	8:28:00 AM	607991.44	695089.99	4.0	-30.4	29.3	4.7	sandy silt over stiff silt/clay, 3/4" probe rod	3/4" probe rod
HRTR04-09	608030.51	695054.91	4/1/2005	8:32:00 AM	608032.74	695056.05	2.5	-33.0	32.0	2.2	fine tight sand over coarse sand over stiff silt/clay	3/4" probe rod

APPENDIX E

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR04-10	608069.64	695023.79	4/1/2005	8:37:00 AM	608066.63	695027.22	4.6	-43.4	42.5	3.2	tight fine sand over coarse sand over stiff silt/clay	3/4" probe rod
HRTR04-11	608108.78	694992.67	4/1/2005	8:54:00 AM	608109.50	694996.47	3.9	-40.3	39.5	0.4	fine to coarse sand and gravel over rock	3/4" probe rod
HRTR04-12	608147.92	694961.56	4/1/2005	9:06:00 AM	608150.80	694963.53	3.5	-39.9	39.2	1.2	moderate silt/clay over stiff clay	3/4" probe rod
HRTR04-13	608187.05	694930.44	4/1/2005	9:17:00 AM	608190.89	694931.22	3.9	-38.0	37.6	1.8	coarse sand and gravel over clay	
HRTR04-14	608226.19	694899.32	4/1/2005	9:23:00 AM	608231.32	694904.07	7.0	-40.1	39.6	2.0	coarse sand and gravel over stiff clay	3/4" probe rod, moved +/- 7' due to piling
HRTR04-15	608265.32	694868.20	4/1/2005	9:57:00 AM	608268.52	694866.52	3.6	-23.4	23.6	5.3	sand and gravel over stiff silt	
HRTR04-16	608304.46	694837.08	4/1/2005	9:49:00 AM	608306.18	694834.45	3.1	-29.0	29.1	5.3	stiff sand and gravel over stiff silt over rock	
HRTR04-17	608343.59	694805.96	4/1/2005	9:39:00 AM	608347.67	694804.70	4.3	-8.3	8.2	10.4	fine to coarse sand and gravel over silt over rock	
HRTR04-18	608383.16	694774.51	4/1/2005	9:35:00 AM	608387.63	694774.50	4.5	-0.5	0.5	6.1	fine to coarse sand and gravel over stiff silt	
HRTR05-01	608146.95	695565.31	3/31/2005	10:34:00 AM	608143.30	695556.70	9.4	1.3	0.4	0.0	fine sand gravel rock	location moved to edge of water; target fell on steep rocky bank above water line at high tide
HRTR05-02	608168.27	695520.08	3/31/2005	10:37:00 AM	608169.50	695516.70	3.6	-5.3	6.9	20.0	silt over moderate to stiff silt	
HRTR05-03	608189.58	695474.85	3/31/2005	10:47:00 AM	608192.60	695474.00	3.1	-20.0	22.0	12.2	silt over stiff silt	
HRTR05-04	608210.89	695429.62	4/5/2005	7:44:00 AM	608208.83	695428.83	2.2	-28.7	31.5	7.5	soft to moderate silt over rock	3/4" probe rod
HRTR05-05	608232.20	695384.39	4/5/2005	7:57:00 AM	608231.07	695383.34	1.5	-34.9	37.5	3.1	fine to medium sandy silt over stiff clay/rock	3/4" probe rod
HRTR05-06	608253.51	695339.16	4/5/2005	7:55:00 AM	608253.89	695339.89	0.8	-35.7	38.3	3.5	fine to medium sand over rock/stiff clay	3/4" probe rod
HRTR05-07	608274.82	695293.93	4/5/2005	8:05:00 AM	608272.03	695290.83	4.2	-35.0	37.5	3.6	stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR05-08	608296.13	695248.69	4/5/2005	8:08:00 AM	608292.33	695247.89	3.9	-35.6	38.1	5.6	stiff sandy silt over stiff silt/clay	
HRTR05-09	608317.44	695203.46	4/5/2005	8:26:00 AM	608317.68	695206.49	3.0	-37.6	39.9	2.2	stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR05-10	608338.75	695158.23	4/5/2005	8:28:00 AM	608338.64	695161.95	3.7	-36.6	38.8	1.8	stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR05-11	608360.06	695113.00	4/5/2005	8:47:00 AM	608359.84	695111.15	1.9	-43.5	45.1	2.5	stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR05-12	608381.37	695067.77	4/5/2005	8:59:00 AM	608379.66	695064.44	3.8	-43.8	45.4	1.1	stiff sand with some fine gravel over clay	3/4" probe rod
HRTR05-13	608402.68	695022.54	4/12/2005	4:00:00 PM	608402.68	695022.54	0.0	0.0	0.0	0.0		barge on location
HRTR05-14	608424.00	694977.31	4/12/2005	4:00:00 PM	608424.00	694977.31	0.0	0.0	0.0	0.0		barge on location
HRTR05-15	608445.31	694932.08	4/12/2005	4:01:00 PM	608445.31	694932.08	0.0	0.0	0.0	0.0		barge on location
HRTR05-16	608466.62	694886.85	4/12/2005	4:01:00 PM	608466.62	694886.85	0.0	0.0	0.0	0.0		barge on location
HRTR05-17	608487.93	694841.62	4/12/2005	4:01:00 PM	608487.93	694841.62	0.0	0.0	0.0	0.0		barge on location
HRTR05-18	608504.87	694805.65	4/12/2005	4:01:00 PM	608504.87	694805.65	0.0	0.0	0.0	0.0		barge on location
HRTR06-01	608503.53	695807.72	3/31/2005	11:21:00 AM	608499.90	695805.80	4.1	-2.1	4.2	9.1	sand and gravel over silt	
HRTR06-02	608532.49	695766.95	3/31/2005	11:55:00 AM	608530.50	695768.60	2.6	-2.0	4.3	4.2	silt over rock	
HRTR06-03	608561.44	695726.19	3/31/2005	12:11:00 PM	608559.50	695728.30	2.9	-3.9	6.5	17.2	silt over stiff silt	
HRTR06-04	608590.39	695685.42	3/31/2005	12:14:00 PM	608590.60	695684.80	0.7	-18.1	20.7	10.1	silt over tight fine sand	
HRTR06-05	608619.35	695644.66	4/5/2005	9:10:00 AM	608624.00	695643.44	4.8	-15.9	25.0	5.5	fine sand over silt over stiff clay	
HRTR06-06	608648.30	695603.90	4/12/2005	4:02:00 PM	608648.30	695603.90	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-07	608677.25	695563.13	4/12/2005	4:03:00 PM	608677.25	695563.13	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-08	608706.21	695522.37	4/12/2005	4:03:00 PM	608706.21	695522.37	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-09	608735.16	695481.61	4/12/2005	4:03:00 PM	608735.16	695481.61	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-10	608764.11	695440.84	4/12/2005	4:04:00 PM	608764.11	695440.84	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-11	608793.07	695400.08	4/12/2005	4:04:00 PM	608793.07	695400.08	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-12	608822.02	695359.31	4/12/2005	4:04:00 PM	608822.02	695359.31	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-13	608850.98	695318.55	4/12/2005	4:05:00 PM	608850.98	695318.55	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-14	608879.93	695277.79	4/12/2005	4:05:00 PM	608879.93	695277.79	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-15	608908.88	695237.02	4/12/2005	4:05:00 PM	608908.88	695237.02	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-16	608937.84	695196.26	4/12/2005	4:06:00 PM	608937.84	695196.26	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR06-17	608942.63	695189.51	3/31/2005	12:31:00 PM	608945.40	695187.80	3.3	-3.7	6.2	0.0	coarse sand and gravel over rock	
HRTR07-01	608989.00	695987.67	3/31/2005	12:49:00 PM	608983.20	695987.00	5.8	-2.5	5.2	0.8	silt over rock	target close to bridge supports
HRTR07-02	609017.96	695946.91	4/12/2005	4:08:00 PM	609017.96	695946.91	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-03	609046.91	695906.14	4/12/2005	4:08:00 PM	609046.91	695906.14	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-04	609075.86	695865.38	4/12/2005	4:08:00 PM	609075.86	695865.38	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-05	609104.82	695824.62	4/12/2005	4:09:00 PM	609104.82	695824.62	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-06	609133.77	695783.85	4/12/2005	4:09:00 PM	609133.77	695783.85	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-07	609162.73	695743.09	4/12/2005	4:09:00 PM	609162.73	695743.09	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-08	609191.68	695702.32	4/12/2005	4:10:00 PM	609191.68	695702.32	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-09	609220.63	695661.56	4/12/2005	4:10:00 PM	609220.63	695661.56	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-10	609249.59	695620.80	4/12/2005	4:10:00 PM	609249.59	695620.80	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-11	609278.54	695580.03	4/12/2005	4:10:00 PM	609278.54	695580.03	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-12	609307.49	695539.27	4/12/2005	4:11:00 PM	609307.49	695539.27	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR07-13	609312.38	695532.39	4/12/2005	4:11:00 PM	609312.38	695532.39	0.0	0.0	0.0	0.0		gas pipeline crossing
HRTR08-01	609299.57	696280.32	4/5/2005	12:30:00 PM	609301.75	696281.04	2.3	-40.8	38.1	2.1	stiff fine to medium sand over moderate to stiff silt/clay	3/4" probe rod
HRTR08-02	609338.53	696248.98	4/5/2005	12:15:00 PM	609340.99	696249.47	2.5	-41.2	38.6	1.0	stiff fine to medium sand over stiff silt	3/4" probe rod
HRTR08-03	609377.49	696217.64	4/5/2005	12:07:00 PM	609375.99	696214.86	3.2	-39.9	38.6	3.0	stiff medium to coarse sand with some fine gravel over stiff silt/clay	3/4" probe rod
HRTR08-04	609416.45	696186.30	4/5/2005	11:15:00 AM	609415.54	696183.50	2.9	-50.0	48.8	0.3	stiff medium to coarse sand and gravel over clay/rock	3/4" probe rod

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR08-05	609455.41	696154.97	4/5/2005	11:06:00 AM	609452.96	696158.16	4.0	-51.9	50.8	0.2	stiff sand and gravel	3/4" probe rod; inaccurate probe depth due to high current (bending probe rod)
HRTR08-06	609494.37	696123.63	4/5/2005	11:00:00 AM	609492.00	696120.88	3.6	-49.6	48.6	0.8	stiff medium to coarse sand over stiff bottom/clay	3/4" probe rod; probe inaccurate due to high current (rod bending)
HRTR08-07	609533.33	696092.29	4/5/2005	10:55:00 AM	609534.35	696090.79	1.8	-44.4	43.5	1.1	stiff sand silt some fine gravel over stiff bottom/clay	3/4" probe rod; probe inaccurate due to high current, bending probe rod
HRTR08-08	609572.29	696060.95	4/5/2005	10:50:00 AM	609570.44	696057.66	3.8	-43.5	42.7	0.7	stiff fine to medium sand over stiff bottom	3/4" probe rod; probe depth inaccurate due tot high current (bending probe rod)
HRTR08-09	609611.25	696029.61	4/5/2005	10:45:00 AM	609611.56	696027.71	1.9	-42.0	42.8	0.7	stiff sand and silt over stiff bottom	3/4" probe rod; probe inaccurate due to high current (probe rod bending)
HRTR08-10	609650.21	695998.28	4/5/2005	10:24:00 AM	609648.72	695998.87	1.6	-39.9	39.5	5.2	stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR08-11	609689.17	695966.94	3/31/2005	2:13:00 PM	609692.60	695965.00	3.9	-10.8	12.2	9.6	silt over fine to medium sand over tight fine sand	
HRTR08-12	609715.78	695945.54	3/31/2005	1:49:00 PM	609715.20	695943.10	2.5	-2.1	4.1	0.0	coarse sand and gravel over rock	
HRTR09-01	609494.36	696618.16	4/5/2005	2:19:00 PM	609495.58	696620.16	2.3	-38.4	35.8	0.9	stiff medium to coarse sand over stiff silt/clay	3/4" probe rod
HRTR09-02	609542.13	696603.40	4/5/2005	2:16:00 PM	609542.59	696608.17	4.8	-45.9	43.1	0.4	stiff fine to medium sands over stiff silt/clay	3/4" probe rod
HRTR09-03	609589.90	696588.63	4/5/2005	2:11:00 PM	609590.68	696589.74	1.4	-44.9	42.1	1.3	stiff fine to medium sand over stiff silt/clay	3/4" probe rod
HRTR09-04	609637.67	696573.87	4/5/2005	2:01:00 PM	609638.27	696574.05	0.6	-50.1	47.1	0.3	tight fine to medium fine over hard bottom, clay/rock	3/4" probe rod
HRTR09-05	609685.44	696559.10	4/5/2005	2:03:00 PM	609687.29	696560.55	2.3	-50.2	47.2	0.5	stiff medium to coarse sand over stiff clay/rock	3/4" probe rod
HRTR09-06	609733.21	696544.34	4/5/2005	1:48:00 PM	609733.40	696543.88	0.5	-48.7	45.6	3.7	stiff sandy silt over moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR09-07	609780.98	696529.57	4/5/2005	1:41:00 PM	609779.27	696525.63	4.3	-46.7	43.5	0.9	stiff fine to medium sand over stiff silt/clay	3/4" probe rod
HRTR09-08	609828.75	696514.81	4/5/2005	1:35:00 PM	609826.26	696515.48	2.6	-41.7	38.5	1.8	medium to coarse sand over stiff silt over clay	3/4" probe rod
HRTR09-09	609876.52	696500.04	4/5/2005	1:40:00 PM	609873.78	696501.30	3.0	-38.8	35.6	3.4	medium to coarse sand over moderate to stiff silt over stiff silt/clay	
HRTR09-10	609924.29	696485.28	4/5/2005	1:18:00 PM	609924.85	696483.78	1.6	-24.1	20.9	9.1	fine to medium sands over soft to moderate silt	3/4" probe rod
HRTR09-11	609972.06	696470.51	3/31/2005	1:30:00 PM	609967.10	696467.80	5.7	-17.6	19.9	5.9	moderate to stiff silt over clay	
HRTR09-12	610024.18	696454.40	3/31/2005	1:40:00 PM	610021.40	696453.20	3.0	1.1	1.0	0.3	fine to coarse sand and gravel over rock	
HRTR10-01	609595.63	697009.98	4/5/2005	2:23:00 PM	609595.63	697009.98	0.0	0.0	0.0	0.0		location on break wall
HRTR10-02	609645.63	697010.87	4/5/2005	2:25:00 PM	609642.69	697014.31	4.5	-26.5	24.3	8.2	stiff sandy silt over moderate to stiff silt	
HRTR10-03	609695.62	697011.77	4/5/2005	2:33:00 PM	609695.77	697015.05	3.3	-34.3	32.0	5.2	stiff silty sand some fine gravel over moderate to stiff silt/clay	3/4" probe rod
HRTR10-04	609745.61	697012.66	4/5/2005	2:38:00 PM	609747.18	697015.14	2.9	-34.8	32.8	4.2	stiff medium to coarse sand and gravel over stiff sandy silt	3/4" probe rod
HRTR10-05	609795.60	697013.56	4/5/2005	2:45:00 PM	609797.08	697015.50	2.4	-42.8	41.0	3.9	stiff sandy silt over moderate to stiff silt/clay	3/4" probe rod
HRTR10-06	609845.59	697014.45	4/5/2005	3:22:00 PM	609843.69	697018.67	4.6	-45.4	44.9	2.3	stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR10-07	609895.59	697015.35	4/5/2005	3:15:00 PM	609896.10	697016.02	0.8	-46.9	46.1	1.2	stiff coarse sand over stiff sandy silt/clay	3/4" probe rod
HRTR10-08	609945.58	697016.24	4/5/2005	3:08:00 PM	609945.38	697020.11	3.9	-46.4	45.3	1.1	stiff coarse sand over stiff silt/clay	3/4" probe rod
HRTR10-09	609995.57	697017.14	4/5/2005	3:03:00 PM	609996.59	697017.58	1.1	-45.4	44.2	0.3	fine sand and gravel over rock	3/4" probe rod
HRTR10-10	610045.56	697018.03	4/5/2005	2:54:00 PM	610044.28	697021.10	3.3	-38.9	37.5	0.0	rock	3/4" probe rod
HRTR10-11	610095.55	697018.93	4/5/2005	2:51:00 PM	610095.55	697018.93	0.0	0.0	0.0	0.0		tug boat docked on location
HRTR10-12	610127.01	697019.49	4/5/2005	2:50:00 PM	610127.01	697019.49	0.0	0.0	0.0	0.0		tug boat docked on location; possible location on shore
HRTR11-01	609547.01	697450.69	3/30/2005	3:05:00 PM	609547.60	697452.50	1.9	-0.2	0.0	0.0	hardened black material (slag or creosol)	
HRTR11-02	609596.04	697460.50	3/30/2005	3:03:00 PM	609593.00	697464.50	5.0	-18.1	17.9	11.7	fine sand over fine sand and silt over stiff silt/clay	
HRTR11-03	609645.07	697470.30	4/6/2005	7:33:00 AM	609643.58	697471.20	1.7	-25.1	28.6	4.1	fine to coarse sand over stiff clay	3/4" probe rod
HRTR11-04	609694.10	697480.11	4/6/2005	7:47:00 AM	609693.30	697478.35	1.9	-34.3	37.8	3.8	fine silt and sand over stiff clay	3/4" probe rod
HRTR11-05	609743.13	697489.92	4/6/2005	7:51:00 AM	609741.91	697488.45	1.9	-40.6	44.0	4.7	fine sandy silt over stiff clay	3/4" probe rod
HRTR11-06	609792.16	697499.72	4/6/2005	7:56:00 AM	609792.88	697499.54	0.7	-42.1	45.5	2.4	stiff coarse sand over stiff silt/clay	3/4" probe rod
HRTR11-07	609841.19	697509.53	4/6/2005	8:01:00 AM	609842.12	697512.35	3.0	-43.6	47.1	1.5	stiff medium to coarse sand over stiff silt/clay	3/4" probe rod
HRTR11-08	609890.22	697519.33	4/6/2005	9:07:00 AM	609892.19	697516.29	3.6	-44.5	47.2	1.1	stiff coarse sand and gravel over stiff silt/clay	3/4" probe rod
HRTR11-09	609939.25	697529.14	4/6/2005	9:03:00 AM	609938.12	697527.48	2.0	-44.4	47.2	0.6	stiff coarse sand and gravel over rock	3/4" probe rod
HRTR11-10	609988.28	697538.94	4/6/2005	8:51:00 AM	609989.00	697539.21	0.8	-45.1	47.9	0.3	stiff coarse sand and gravel over clay. Rock	3/4" probe rod
HRTR11-11	610037.30	697548.75	4/6/2005	8:11:00 AM	610036.48	697550.75	2.2	-44.2	47.5	0.2	coarse sand and gravel over rock	3/4" probe rod
HRTR11-12	610086.33	697558.56	4/6/2005	8:09:00 AM	610086.33	697558.56	0.0	0.0	0.0	0.0		coal barge docked on location
HRTR11-13	610135.36	697568.36	4/6/2005	8:07:00 AM	610135.36	697568.36	0.0	0.0	0.0	0.0		on shore +/- 50' east
HRTR11-14	610184.39	697578.17	4/6/2005	8:06:00 AM	610184.39	697578.17	0.0	0.0	0.0	0.0		on shore +/- 90' east
HRTR11-15	610221.49	697585.59	4/6/2005	8:03:00 AM	610221.49	697585.59	0.0	0.0	0.0	0.0		on shore +/- 100' east
HRTR12-01	609280.80	697629.72	3/30/2005	2:27:00 PM	609280.80	697629.70	0.0	0.0	0.0	0.0		location behind sheet pile wall
HRTR12-02	609318.76	697662.26	3/30/2005	2:21:00 PM	609318.70	697662.40	0.2	-3.2	3.5	2.5	fine to coarse sand over silt over rock	
HRTR12-03	609356.73	697694.80	3/30/2005	2:19:00 PM	609357.60	697695.60	1.2	-4.9	5.4	1.4	fine to coarse sand over rock	
HRTR12-04	609394.69	697727.34	3/30/2005	2:42:00 PM	609397.30	697728.10	2.7	-14.1	14.1	2.8	silt over stiff silt/clay	
HRTR12-05	609432.65	697759.88	3/30/2005	2:48:00 PM	609434.40	697759.90	1.7	-20.9	20.9	3.8	silt over stiff clay	
HRTR12-06	609470.61	697792.41	4/6/2005	1:41:00 PM	609473.37	697790.62	3.3	-27.0	24.2	4.7	moderate to stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR12-07	609508.58	697824.95	4/6/2005	1:29:00 PM	609510.55	697824.08	2.2	-31.8	29.1	5.5	moderate to stiff sandy silt over stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR12-08	609546.54	697857.49	4/6/2005	1:22:00 PM	609548.13	697855.70	2.4	-35.8	33.3	6.7	moderate to stiff sandy silt over stiff sandy silt	3/4" probe rod
HRTR12-09	609584.50	697890.03	4/6/2005	1:08:00 PM	609584.04	697889.02	1.1	-40.1	37.7	1.0	coarse tight sand with some fine gravel over stiff clay/rock	3/4" probe rod

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR12-10	609622.47	697922.57	4/6/2005	12:56:00 PM	609626.99	697922.72	4.5	-42.0	39.9	0.4	coarse sand and gravel over rock	3/4" probe rod
HRTR12-11	609660.43	697955.11	4/6/2005	12:50:00 PM	609661.80	697956.27	1.8	-46.1	44.1	0.7	stiff medium to coarse sand over stiff silt/clay	3/4" probe rod
HRTR12-12	609698.39	697987.65	4/6/2005	12:37:00 PM	609699.69	697985.69	2.3	-46.2	44.5	0.5	tight medium to coarse sand over stiff sandy clay/rock	3/4" probe rod
HRTR12-13	609736.35	698020.19	4/6/2005	12:31:00 PM	609737.59	698018.34	2.2	-46.1	44.4	0.4	stiff fine to medium sand over stiff bottom, clay/rock	3/4" probe rod
HRTR12-14	609774.32	698052.73	4/6/2005	9:30:00 AM	609780.07	698051.35	5.9	-46.0	48.3	1.9	tight coarse sand over stiff silt/clay	3/4" probe rod
HRTR12-15	609812.28	698085.27	4/6/2005	9:27:00 AM	609814.31	698086.28	2.3	-43.7	46.0	3.2	stiff medium to coarse sand some fine gravel, over stiff silt/clay	3/4" probe rod
HRTR12-16	609850.24	698117.81	4/6/2005	9:20:00 AM	609853.05	698115.49	3.6	-34.7	37.2	2.3	medium to coarse sand over silty clay over stiff clay	3/4" probe rod
HRTR12-17	609888.21	698150.35	4/6/2005	9:10:00 AM	609885.47	698150.21	2.7	-20.4	23.1	5.9	medium to coarse sand over stiff medium to coarse sand	3/4" probe rod
HRTR12-18	609926.17	698182.89	3/30/2005	2:08:00 PM	609924.20	698183.80	2.2	-7.0	7.8	4.6	fine to coarse sand over clay	
HRTR12-19	609964.13	698215.43	3/30/2005	1:45:00 PM	609961.20	698215.40	2.9	3.2	4.4	0.3	gravel, coarse sand over hard bottom	
HRTR12-20	610002.09	698247.97	3/30/2005	1:51:00 PM	610002.09	698247.96	0.0	0.0	0.0	0.0		location on shore during high tide (PSEG property)
HRTR12-21	610017.18	698260.90	3/30/2005	1:53:00 PM	610017.17	698260.89	0.0	0.0	0.0	0.0		location on shore during high tide (PSEG property)
HRTR13-01	609139.24	697618.95	4/4/2005	6:08:00 PM	609139.24	697618.95	0.0	0.0	0.0	0.0		location on shore at high tide +/- 30'
HRTR13-02	609148.89	697668.01	3/24/2005	10:16:00 AM	609144.50	697667.77	4.4	-4.5	6.9	1.5	sand and gravel	
HRTR13-03	609158.54	697717.06	3/24/2005	10:18:00 AM	609158.11	697716.74	0.5	-9.0	11.4	10.5	moderate to stiff silt over stiff silt	
HRTR13-04	609168.20	697766.12	3/24/2005	10:32:00 AM	609168.84	697762.66	3.5	-17.1	19.3	4.0	moderate to stiff silt over stiff silt/clay	
HRTR13-05	609177.85	697815.18	3/24/2005	10:37:00 AM	609180.37	697815.02	2.5	-15.3	17.3	7.1	moderate sandy silt over stiff sandy silt	
HRTR13-06	609187.50	697864.24	3/24/2005	10:45:00 AM	609189.71	697861.98	3.2	-17.3	19.2	7.2	moderate to stiff sandy silt over stiff sandy silt	
HRTR13-07	609197.16	697913.30	3/24/2005	12:29:00 PM	609197.94	697908.83	4.5	-22.7	22.2	5.5	moderate to stiff silt over stiff silt	
HRTR13-08	609206.81	697962.36	3/30/2005	3:23:00 PM	609209.37	697960.74	3.0	-26.2	26.1	9.5	soft to moderate silt over stiff silt	
HRTR13-09	609216.46	698011.42	4/6/2005	10:20:00 AM	609217.31	698013.28	2.0	-28.9	30.1	4.9	stiff medium to coarse sand over stiff silt over clay	3/4" probe rod
HRTR13-10	609226.12	698060.48	4/6/2005	10:37:00 AM	609228.98	698058.53	3.5	-31.3	32.1	3.3	stiff medium to coarse sand over stiff silt/clay	3/4" probe rod
HRTR13-11	609235.77	698109.54	4/6/2005	10:49:00 AM	609238.27	698108.95	2.6	-31.2	32.0	2.9	stiff fine to medium sand over tight sand/clay	3/4" probe rod
HRTR13-12	609245.42	698158.60	4/6/2005	10:56:00 AM	609244.81	698157.53	1.2	-32.3	32.7	1.8	stiff medium to fine sand over sandy silt/clay	3/4" probe rod
HRTR13-13	609255.08	698207.66	4/6/2005	11:00:00 AM	609257.92	698210.08	3.7	-35.0	35.3	1.9	stiff fine to medium sand over silty sand over stiff silt/clay	3/4" probe rod
HRTR13-14	609264.73	698256.72	4/6/2005	11:02:00 AM	609267.41	698255.81	2.8	-36.0	36.0	2.8	moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR13-15	609274.38	698305.78	4/6/2005	11:14:00 AM	609277.30	698309.87	5.0	-36.5	36.4	2.2	moderate to stiff silt over stiff silt/clay some fine sand	3/4" probe rod
HRTR13-16	609284.04	698354.84	4/6/2005	12:07:00 PM	609286.31	698351.24	4.3	-35.4	35.3	1.2	moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR13-17	609293.69	698403.89	4/6/2005	12:23:00 PM	609295.15	698405.96	2.5	-37.6	36.2	2.1	moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR13-18	609303.34	698452.95	4/6/2005	12:30:00 PM	609305.71	698453.41	2.4	-37.7	36.2	4.1	moderate to stiff silt over stiff silty clay over stiff clay	3/4" probe rod
HRTR13-19	609312.99	698502.01	4/6/2005	10:18:00 AM	609315.68	698499.92	3.4	-38.5	39.9	3.2	stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR13-20	609322.65	698551.07	4/6/2005	10:10:00 AM	609324.07	698553.24	2.6	-36.8	38.3	4.1	stiff medium to coarse sand over sandy silt over stiff silt/clay	3/4" probe rod
HRTR13-21	609332.30	698600.13	4/6/2005	10:06:00 AM	609335.71	698599.70	3.4	-36.2	38.2	5.7	stiff coarse sand over sandy silt over stiff silt/clay	3/4" probe rod
HRTR13-22	609341.95	698649.19	4/6/2005	9:49:00 AM	609344.18	698648.83	2.3	-30.6	32.5	5.4	stiff coarse sand over silty sand over stiff silt/clay	3/4" probe rod
HRTR13-23	609351.61	698698.25	4/6/2005	9:38:00 AM	609351.97	698698.19	0.4	-24.4	26.6	8.1	medium to coarse sand over sandy silt over stiff silt/clay	3/4" probe rod
HRTR13-24	609361.26	698747.31	3/24/2005	11:47:00 AM	609363.14	698744.63	3.3	-16.6	17.9	4.3	sandy silt over stiff sandy silt/clay	
HRTR13-25	609370.91	698796.37	3/24/2005	11:08:00 AM	609373.35	698792.04	5.0	-7.0	8.4	5.6	sand and gravel over stiff silt/clay	
HRTR13-26	609380.57	698845.43	3/24/2005	11:02:00 AM	609380.68	698843.78	1.7	-3.8	5.3	0.2	sand and gravel over rock	
HRTR13-27	609390.22	698894.49	3/30/2005	1:16:00 PM	609393.00	698893.10	3.1	0.7	2.5	0.0	rock, cobbles, brick debris, trace coarse sand and gravel	
HRTR13-28	609396.25	698925.13	3/30/2005	1:25:00 PM	609396.20	698925.10	0.1	0.0	0.0	0.0		location on shore during high tide
HRTR14-01	608688.98	697556.76	4/4/2005	6:09:00 PM	608688.98	697556.76	0.0	0.0	0.0	0.0		location on shore at high tide +/- 100'
HRTR14-02	608694.21	697606.48	3/24/2005	8:05:00 AM	608692.93	697611.58	5.3	0.1	3.8	0.0	brick, cobbles	
HRTR14-03	608699.45	697656.21	3/24/2005	8:09:00 AM	608700.45	697652.03	4.3	-4.4	8.4	0.1	sand and gravel with cobbles and brick	
HRTR14-04	608704.68	697705.93	3/24/2005	8:12:00 AM	608702.06	697705.38	2.7	-8.7	12.5	8.7	hard sandy silt over stiff to moderate sand and gravel	
HRTR14-05	608709.92	697755.66	3/24/2005	8:20:00 AM	608704.72	697751.72	6.5	-13.3	17.1	8.6	stiff sand and silt over moderate to stiff silt	
HRTR14-06	608715.15	697805.38	3/24/2005	8:26:00 AM	608713.90	697803.20	2.5	-14.2	18.0	7.9	moderate to stiff silt over stiff silt	
HRTR14-07	608720.39	697855.11	3/24/2005	8:30:00 AM	608719.16	697854.13	1.6	-14.4	18.2	9.1	moderate to stiff silt over stiff silt	
HRTR14-08	608725.62	697904.83	3/24/2005	8:36:00 AM	608726.91	697905.57	1.5	-14.5	18.3	9.3	stiff sand and silt over moderate to stiff silt	
HRTR14-09	608730.85	697954.56	3/24/2005	8:41:00 AM	608734.12	697954.99	3.3	-16.5	20.3	6.8	moderate to stiff silt over stiff silt	
HRTR14-10	608736.09	698004.28	3/23/2005	2:44:00 PM	608734.49	698000.95	3.7	-16.1	15.1	7.7	moderate to stiff silt over stiff silt	
HRTR14-11	608741.32	698054.01	3/23/2005	2:52:00 PM	608739.01	698053.92	2.3	-20.0	18.8	14.3	moderate to stiff silt over stiff silt	
HRTR14-12	608746.56	698103.74	3/23/2005	2:56:00 PM	608743.88	698107.69	4.8	-19.8	19.2	12.5	moderate to stiff silt with some fine sand over stiff silt	
HRTR14-13	608751.79	698153.46	3/23/2005	3:10:00 PM	608747.49	698152.27	4.5	-20.6	20.0	7.9	stiff sand and silt over moderate to stiff silt over stiff silt\clay	
HRTR14-14	608757.02	698203.19	3/24/2005	10:01:00 AM	608759.01	698199.24	4.4	-24.5	27.2	7.8	moderate to stiff silt over stiff silt	
HRTR14-15	608762.26	698252.91	4/6/2005	1:59:00 PM	608761.47	698254.40	1.7	-25.2	22.1	11.2	tight sand over tight sandy silt/clay	3/4" probe rod
HRTR14-16	608767.49	698302.64	4/6/2005	2:24:00 PM	608766.13	698301.34	1.9	-26.8	23.5	11.0	loose sand over tight sand over stiff silt/clay	3/4" probe rod
HRTR14-17	608772.73	698352.36	4/6/2005	2:26:00 PM	608773.27	698350.75	1.7	-27.4	24.1	9.2	loose sand over tight sand over moderate to stiff silt over clay	3/4" probe rod
HRTR14-18	608777.96	698402.09	4/6/2005	2:33:00 PM	608778.58	698402.25	0.6	-32.7	29.5	8.5	loose sand over tight sand and silt over stiff silt	3/4" probe rod
HRTR14-19	608783.20	698451.81	4/6/2005	2:38:00 PM	608785.05	698449.57	2.9	-33.3	30.1	6.3	fine sand over moderate to stiff silt over stiff clay	3/4" probe rod
HRTR14-20	608788.43	698501.54	4/6/2005	2:53:00 PM	608790.22	698499.64	2.6	-33.7	30.8	6.1	fine sand over moderate to stiff silt over stiff clay	3/4" probe rod
HRTR14-21	608793.66	698551.26	3/24/2005	12:04:00 PM	608795.96	698551.98	2.4	-34.6	34.6	7.8	moderate to stiff silt over stiff silt	
HRTR14-22	608798.90	698600.99	3/23/2005	2:03:00 PM	608798.41	698599.27	1.8	-32.9	30.6	6.4	stiff sandy silt	
HRTR14-23	608804.13	698650.71	3/23/2005	1:46:00 PM	608802.25	698648.35	3.0	-32.2	29.9	10.4	moderate to stiff silt over stiff silt	

APPENDIX E

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR14-24	608809.37	698700.44	3/23/2005	1:30:00 PM	608808.70	698699.94	0.8	-34.1	31.8	8.1	stiff sandy silt over moderate to stiff silt over stiff silt	
HRTR14-25	608814.60	698750.16	3/23/2005	12:40:00 PM	608810.95	698748.54	4.0	-32.6	30.5	8.2	moderate to stiff silt over stiff silt	
HRTR14-26	608819.84	698799.89	3/23/2005	12:57:00 PM	608819.22	698801.19	1.4	-28.0	25.7	8.8	moderate to stiff silt	
HRTR14-27	608825.07	698849.61	3/23/2005	1:05:00 PM	608826.58	698846.57	3.4	-25.2	23.0	10.0	moderate to stiff silt	
HRTR14-28	608830.30	698899.34	3/23/2005	1:18:00 PM	608832.04	698900.90	2.3	-24.0	21.5	11.3	moderate to stiff silt over stiff silt	
HRTR14-29	608835.54	698949.06	3/24/2005	9:38:00 AM	608838.11	698945.63	4.3	-23.0	25.9	6.6	stiff silt over moderate to stiff silt over stiff silt	
HRTR14-30	608840.77	698998.79	3/24/2005	9:30:00 AM	608842.01	698995.40	3.6	-20.0	23.2	2.3	stiff silt/clay	
HRTR14-31	608846.01	699048.52	3/24/2005	9:21:00 AM	608846.14	699045.31	3.2	-15.1	18.3	1.6	stiff silt over stiff silt	
HRTR14-32	608851.24	699098.24	3/24/2005	9:14:00 AM	608851.71	699096.67	1.6	-5.8	9.2	7.0	moderate to stiff silt over stiff silt/clay	
HRTR14-33	608856.48	699147.97	3/24/2005	9:05:00 AM	608857.15	699143.88	4.1	-3.8	7.3	7.3	moderate to soft silt over stiff silt	
HRTR14-34	608861.71	699197.69	3/24/2005	9:00:00 AM	608861.42	699196.15	1.6	2.3	1.4	11.2	soft to moderate silt over stiff silt	
HRTR14-35	608862.31	699203.40	3/24/2005	8:55:00 AM	608858.21	699204.65	4.3	2.4	1.3	10.0	soft to moderate silt over stiff silt	
HRTR15-01	608244.95	697522.04	4/4/2005	6:10:00 PM	608244.95	697522.04	0.0	0.0	0.0	0.0		location on shore at high tide +/- 30' south
HRTR15-02	608246.56	697572.01	3/23/2005	9:30:00 AM	608247.19	697572.72	0.9	-5.5	6.2	6.7	stiff sandy silt over stiff silt/clay	
HRTR15-03	608248.17	697621.99	3/23/2005	9:35:00 AM	608245.60	697622.81	2.7	-8.3	9.0	7.5	stiff sandy silt over stiff silt/clay	
HRTR15-04	608249.78	697671.96	3/23/2005	9:38:00 AM	608251.25	697669.95	2.5	-11.3	11.9	10.1	moderately stiff silt over stiff silt	
HRTR15-05	608251.39	697721.93	3/23/2005	9:42:00 AM	608251.29	697722.67	0.7	-11.6	12.2	10.9	moderately stiff silt over stiff silt	
HRTR15-06	608253.01	697771.91	3/23/2005	9:48:00 AM	608255.37	697769.72	3.2	-12.0	12.4	8.4	moderately stiff silt over stiff silt	
HRTR15-07	608254.62	697821.88	3/23/2005	9:57:00 AM	608254.63	697819.39	2.5	-12.4	12.7	9.7	moderately stiff silt over stiff silt	
HRTR15-08	608256.23	697871.86	3/23/2005	10:04:00 AM	608253.44	697875.13	4.3	-13.7	14.0	9.1	stiff sandy silt over moderate stiff silt over stiff silt	
HRTR15-09	608257.84	697921.83	3/23/2005	10:11:00 AM	608257.36	697925.75	3.9	-15.9	15.9	7.2	moderate stiff silt over stiff silt	
HRTR15-10	608259.45	697971.80	3/23/2005	10:18:00 AM	608255.65	697974.51	4.7	-17.2	17.3	5.0	moderate stiff silt over stiff silt	
HRTR15-11	608261.07	698021.78	3/23/2005	10:25:00 AM	608264.79	698020.01	4.1	-18.3	18.1	9.1	moderate stiff silt over stiff silt	
HRTR15-12	608262.68	698071.75	3/23/2005	10:29:00 AM	608265.33	698071.35	2.7	-18.1	17.8	9.5	moderate stiff silt over stiff silt	
HRTR15-13	608264.29	698121.73	3/23/2005	10:31:00 AM	608264.09	698120.71	1.0	-18.0	17.7	9.5	moderate stiff silt over stiff silt	
HRTR15-14	608265.90	698171.70	3/23/2005	10:38:00 AM	608263.13	698172.48	2.9	-17.3	16.8	7.1	moderate stiff silt over stiff silt	
HRTR15-15	608267.51	698221.67	3/23/2005	10:44:00 AM	608270.95	698223.59	3.9	-17.4	16.8	7.2	stiff sand and silt over moderate stiff silt over stiff silt	
HRTR15-16	608269.13	698271.65	3/23/2005	9:14:00 AM	608272.96	698270.50	4.0	-17.4	18.5	8.6	stiff sandy silt over moderately stiff silt over stiff silt	
HRTR15-17	608270.74	698321.62	3/23/2005	10:53:00 AM	608270.97	698325.43	3.8	-18.6	18.0	10.5	stiff sandy silt over moderate stiff silt over stiff silt	
HRTR15-18	608272.35	698371.60	3/23/2005	11:31:00 AM	608275.05	698373.06	3.1	-24.1	22.8	9.7	stiff sandy silt over moderate stiff silt over stiff silt	
HRTR15-19	608273.96	698421.57	3/23/2005	11:41:00 AM	608273.67	698420.29	1.3	-23.6	22.3	10.7	moderate stiff silt over stiff silt	
HRTR15-20	608275.58	698471.54	3/23/2005	11:48:00 AM	608273.47	698469.54	2.9	-23.6	22.2	10.3	stiff sandy silt over moderate stiff silt over stiff silt	
HRTR15-21	608277.19	698521.52	3/23/2005	11:55:00 AM	608278.46	698520.20	1.8	-25.2	23.8	7.7	moderate stiff silt over stiff silt	
HRTR15-22	608278.80	698571.49	3/23/2005	12:07:00 PM	608277.81	698568.36	3.3	-24.2	23.0	10.0	moderate stiff silt over stiff silt	
HRTR15-23	608280.41	698621.47	3/23/2005	12:14:00 PM	608279.94	698619.88	1.7	-24.9	23.2	8.1	moderate stiff silt over stiff silt	
HRTR15-24	608282.02	698671.44	3/23/2005	12:24:00 PM	608286.18	698671.14	4.2	-24.6	22.9	8.3	moderate stiff silt over stiff silt	
HRTR15-25	608283.64	698721.41	3/23/2005	9:04:00 AM	608284.58	698724.71	3.4	-24.5	25.8	7.5	moderately stiff silt over stiff silt	
HRTR15-26	608285.25	698771.39	3/23/2005	8:53:00 AM	608289.30	698773.31	4.5	-22.8	24.3	10.7	moderately stiff silt over stiff silt	
HRTR15-27	608286.86	698821.36	3/23/2005	8:40:00 AM	608289.70	698821.31	2.8	-18.3	19.9	32.4	moderately stiff silt over stiff silt	
HRTR15-28	608288.47	698871.34	3/23/2005	8:26:00 AM	608284.70	698872.91	4.1	-18.9	20.5	10.8	moderate silt over stiff silt	
HRTR15-29	608290.08	698921.31	3/22/2005	3:08:00 PM	608292.39	698918.94	3.3	-18.2	18.1	15.2	moderately silt over stiff silt	
HRTR15-30	608291.70	698971.28	3/22/2005	2:47:00 PM	608290.57	698971.85	1.3	-16.4	16.1	10.4	moderate to stiff silt (8ft) over stiff silty clay	
HRTR15-31	608293.31	699021.26	3/22/2005	2:25:00 PM	608291.24	699023.29	2.9	-14.8	13.7	6.3	moderate to stiff silt (4.5ft.) over stiff silt	
HRTR15-32	608294.92	699071.23	3/22/2005	2:18:00 PM	608296.39	699067.33	4.2	-13.3	12.2	6.0	moderate silt (4') over stiff silty clay	
HRTR15-33	608296.53	699121.21	3/22/2005	2:13:00 PM	608291.03	699114.37	8.8	-10.3	8.8	6.5	moderate silt over clay	
HRTR15-34	608298.14	699171.18	3/22/2005	2:09:00 PM	608301.12	699175.00	4.8	-5.2	3.8	10.6	soft over moderate to stiff silt/clay	
HRTR15-35	608299.76	699221.15	3/30/2005	12:55:00 PM	608298.70	699221.40	1.1	-3.6	5.6	8.2	silt over moderate to stiff silt over stiff silt/clay	
HRTR15-36	608301.42	699272.82	3/30/2005	12:58:00 PM	608293.60	699249.80	24.3	2.0	0.1	8.2	silt over moderate to stiff silt over stiff silt/clay	location moved to edge of water during high tide; original location was on shore
HRTR16-01	607932.13	697424.63	4/4/2005	6:10:00 PM	607932.13	697424.63	0.0	0.0	0.0	0.0		location on shore
HRTR16-02	607923.76	697473.93	3/22/2005	10:11:00 AM	607924.87	697475.97	2.3	-4.0	3.6	7.3	hard sands over soft sandy silt	
HRTR16-03	607915.39	697523.22	3/22/2005	10:17:00 AM	607917.90	697523.66	2.5	-6.0	5.4	5.8	soft silt over stiff bottom	
HRTR16-04	607907.02	697572.52	3/22/2005	10:24:00 AM	607905.99	697568.61	4.0	-8.7	8.0	2.9	soft silt over stiff bottom	
HRTR16-05	607898.66	697621.81	3/22/2005	10:28:00 AM	607900.72	697622.16	2.1	-10.0	9.4	1.6	sandy silt over stiff bottom	
HRTR16-06	607890.29	697671.10	3/22/2005	10:31:00 AM	607891.52	697669.90	1.7	-11.1	10.2	2.3	sandy silt over stiff bottom	
HRTR16-07	607881.92	697720.40	3/22/2005	10:36:00 AM	607882.65	697719.29	1.3	-11.8	10.8	0.4	sandy silt over stiff bottom	
HRTR16-08	607873.55	697769.69	3/22/2005	10:43:00 AM	607874.55	697770.92	1.6	-12.1	11.1	7.0	silty sand over stiff bottom	
HRTR16-09	607865.18	697818.99	3/22/2005	10:49:00 AM	607866.70	697814.38	4.9	-13.6	12.4	8.1	silt sand over stiff clay	
HRTR16-10	607856.81	697868.28	3/22/2005	10:54:00 AM	607856.65	697869.96	1.7	-15.3	14.0	9.8	soft sandy silt over stiff clay	
HRTR16-11	607848.44	697917.58	3/22/2005	11:05:00 AM	607850.76	697919.16	2.8	-17.2	15.8	9.4	soft silt over stiff silt over clay	

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FOR THE HACKENSACK RIVER STUDY AREA

SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR16-12	607840.08	697966.87	3/22/2005	11:10:00 AM	607836.51	697966.96	3.6	-17.7	16.4	9.1	soft silt over stiff silt	
HRTR16-13	607831.71	698016.17	3/22/2005	11:16:00 AM	607834.66	698017.90	3.4	-18.7	17.1	9.3	soft silt over stiff silt	
HRTR16-14	607823.34	698065.46	3/22/2005	11:23:00 AM	607826.23	698068.84	4.4	-18.8	17.1	8.2	soft silt over stiff silt	
HRTR16-15	607814.97	698114.76	3/22/2005	11:29:00 AM	607812.15	698111.39	4.4	-18.0	16.3	9.2	soft silt over stiff silt	
HRTR16-16	607806.60	698164.05	3/22/2005	11:34:00 AM	607806.65	698162.12	1.9	-17.1	15.2	9.0	soft silt over stiff silt	
HRTR16-17	607798.23	698213.35	3/22/2005	11:40:00 AM	607800.20	698211.34	2.8	-17.6	15.8	7.2	soft silt over stiff silt	
HRTR16-18	607789.87	698262.64	3/22/2005	11:46:00 AM	607790.72	698261.81	1.2	-18.2	16.2	8.0	stiff crusty silt over soft silt over stiff silt	
HRTR16-19	607781.50	698311.94	3/22/2005	12:12:00 PM	607783.86	698311.95	2.4	-18.9	16.9	8.7	soft sandy silt over soft silt over stiff silt	
HRTR16-20	607773.13	698361.23	3/22/2005	12:26:00 PM	607771.89	698362.84	2.0	-21.2	18.9	10.4	medium sand over moderate to stiff silt over stiff silt	
HRTR16-21	607764.76	698410.53	3/22/2005	12:31:00 PM	607765.62	698413.71	3.3	-20.8	18.4	13.6	medium to coarse sand over moderate to stiff silt, some fine sand	
HRTR16-22	607756.39	698459.82	3/22/2005	12:41:00 PM	607758.31	698461.48	2.5	-22.4	20.2	13.1	medium sands (0.5'), over moderately stiff silt with fine sand	
HRTR16-23	607748.02	698509.11	3/22/2005	12:48:00 PM	607752.82	698508.53	4.8	-23.4	20.9	12.1	medium sands over moderately stiff silt	
HRTR16-24	607739.66	698558.41	3/22/2005	12:53:00 PM	607741.03	698557.05	1.9	-23.7	21.3	14.7	medium sands over moderately stiff silt	
HRTR16-25	607731.29	698607.70	3/22/2005	1:01:00 PM	607731.39	698609.29	1.6	-23.9	21.5	12.5	moderate over stiff silt with some fine sand	
HRTR16-26	607722.92	698657.00	3/22/2005	1:06:00 PM	607724.14	698661.22	4.4	-22.8	20.5	13.7	moderate silt over stiff silt	
HRTR16-27	607714.55	698706.29	3/22/2005	1:11:00 PM	607714.91	698708.94	2.7	-23.9	19.6	11.9	moderate to stiff silt over stiff silt	
HRTR16-28	607706.18	698755.59	3/22/2005	1:18:00 PM	607702.49	698755.20	3.7	-21.0	18.7	12.1	moderate silt over stiff silt	
HRTR16-29	607697.81	698804.88	3/22/2005	1:23:00 PM	607696.66	698806.11	1.7	-19.2	17.0	13.8	moderate over stiff silt	
HRTR16-30	607689.44	698854.18	3/22/2005	1:27:00 PM	607685.20	698856.10	4.7	-16.8	14.7	15.2	moderate silt over stiff silt	
HRTR16-31	607681.08	698903.47	3/22/2005	1:31:00 PM	607682.07	698904.52	1.4	-16.1	14.0	14.5	moderate to stiff silt	
HRTR16-32	607672.71	698952.77	3/22/2005	1:35:00 PM	607670.11	698952.23	2.7	-14.6	12.6	14.5	moderate to stiff silt	
HRTR16-33	607664.34	699002.06	3/22/2005	1:41:00 PM	607666.92	698999.67	3.5	-13.4	11.5	11.9	moderate over stiff silt	
HRTR16-34	607655.97	699051.36	3/22/2005	1:45:00 PM	607651.41	699048.98	5.1	-9.4	7.5	14.4	moderate to stiff silt	
HRTR16-35	607647.60	699100.65	3/22/2005	1:52:00 PM	607647.00	699104.22	3.6	-4.8	3.0	15.4	soft over moderate to stiff silt	
HRTR16-36	607638.50	699154.26	3/30/2005	12:43:00 PM	607638.20	699155.50	1.3	-2.4	4.5	10.0	silt over stiff silt/clay	
HRTR17-01	607484.22	697336.03	3/22/2005	2:24:00 PM	607484.20	697336.00	0.0	0.0	0.0	0.0		location on shore during high tide
HRTR17-02	607473.60	697384.89	3/22/2005	2:20:00 PM	607472.00	697384.60	1.6	-3.4	2.3	6.6	fine silt gravel with silt over stiff silt/clay	
HRTR17-03	607462.98	697433.75	3/22/2005	2:15:00 PM	607462.60	697433.10	0.8	-5.2	4.0	5.1	silt over stiff silt/clay	
HRTR17-04	607452.36	697482.61	3/22/2005	2:10:00 PM	607450.70	697484.40	2.4	-7.6	6.3	1.7	silt over stiff silt/clay	
HRTR17-05	607441.73	697531.47	3/22/2005	2:04:00 PM	607444.60	697533.00	3.2	-8.5	7.1	0.6	fine sand silt over stiff silt/clay	
HRTR17-06	607431.11	697580.33	3/22/2005	1:56:00 PM	607427.40	697581.70	4.0	9.1	7.5	1.2	fine sand over stiff silt/clay	
HRTR17-07	607420.49	697629.19	3/22/2005	1:51:00 PM	607421.70	697626.40	3.0	-10.9	9.1	2.0	fine sand over stiff silt/sand	
HRTR17-08	607409.87	697678.05	3/22/2005	1:37:00 PM	607410.00	697679.30	1.3	-12.1	10.2	2.5	fine sand over stiff silt/clay	
HRTR17-09	607399.25	697726.90	3/22/2005	1:33:00 PM	607397.00	697728.70	2.9	-12.2	10.1	1.0	stiff sandy silt over stiff silt/clay	
HRTR17-10	607388.63	697775.76	3/22/2005	1:28:00 PM	607389.90	697778.50	3.0	-13.2	11.1	0.1	stiff clay	
HRTR17-11	607378.00	697824.62	3/22/2005	1:27:00 PM	607376.90	697827.60	3.2	-18.7	16.5	0.9	stiff silt over stiff silt/clay	
HRTR17-12	607367.38	697873.48	3/22/2005	1:13:00 PM	607361.90	697875.30	5.8	-19.7	17.5	1.4	stiff silt over stiff silt/clay	
HRTR17-13	607356.76	697922.34	3/22/2005	1:08:00 PM	607355.50	697923.50	1.7	-19.5	17.5	2.2	stiff silt over stiff silt/clay	
HRTR17-14	607346.14	697971.20	3/22/2005	1:02:00 PM	607347.90	697974.80	4.0	-22.3	19.8	2.3	stiff silt over stiff silt/clay	
HRTR17-15	607335.52	698020.06	3/22/2005	12:56:00 PM	607335.60	698020.90	0.8	-21.0	18.6	2.8	fine sand over stiff silt/clay	
HRTR17-16	607324.90	698068.92	3/22/2005	12:52:00 PM	607324.80	698068.70	0.2	-17.6	17.2	2.6	fine sand over stiff silt/clay	
HRTR17-17	607314.28	698117.78	3/22/2005	12:45:00 PM	607314.20	698119.10	1.3	-18.4	16.0	2.1	fine silt over stiff silt/clay	
HRTR17-18	607303.65	698166.63	3/22/2005	12:43:00 PM	607300.30	698166.50	3.4	-18.8	16.3	2.0	fine sand over stiff silt/clay	
HRTR17-19	607293.03	698215.49	3/22/2005	12:37:00 PM	607294.80	698217.10	2.4	-18.1	15.6	3.5	fine sand over moderate to stiff silt over stiff silt/clay	
HRTR17-20	607282.41	698264.35	3/22/2005	12:34:00 PM	607283.90	698264.30	1.5	-19.3	16.8	4.1	fine sand over moderate to stiff silt over stiff silt	
HRTR17-21	607271.79	698313.21	3/22/2005	12:30:00 PM	607271.79	698312.40	0.8	-20.3	17.9	4.8	medium to coarse sand over moderate to stiff silt over stiff silt/clay	
HRTR17-22	607261.17	698362.07	3/22/2005	12:24:00 PM	607261.10	698366.40	4.3	21.2	18.9	5.6	moderate to stiff silt over stiff silt/clay	
HRTR17-23	607250.55	698410.93	3/22/2005	11:51:00 AM	607252.00	698411.90	1.7	-21.9	19.8	8.5	medium to coarse sand over a moderate to stiff silt	
HRTR17-24	607239.93	698459.79	3/22/2005	11:44:00 AM	607242.50	698461.00	2.8	-21.2	19.3	9.6	medium to coarse sand over moderate to stiff silt w/fine sand over stiff silt/clay	
HRTR17-25	607229.30	698508.65	3/22/2005	11:36:00 AM	607228.40	698510.60	2.2	-23.8	22.0	12.6	moderate to stiff silt trace fine sand over stiff silt/clay	
HRTR17-26	607218.68	698557.50	3/22/2005	11:26:00 AM	607222.70	698558.70	4.2	-22.8	21.2	9.8	moderate to stiff silt over a stiff silt or clay	
HRTR17-27	607208.06	698606.36	3/22/2005	11:17:00 AM	607212.30	698607.40	4.4	-22.6	20.9	9.5	moderate to stiff silt trace fine sand	
HRTR17-28	607197.44	698655.22	3/22/2005	11:10:00 AM	607201.60	698657.20	4.6	-20.7	19.1	10.2	moderate to stiff silt trace fine sand	
HRTR17-29	607186.82	698704.08	3/22/2005	11:01:00 AM	607189.00	698707.20	3.8	-18.9	17.5	11.9	moderate to stiff silt trace sand	
HRTR17-30	607176.20	698752.94	3/22/2005	10:50:00 AM	607176.50	698757.40	4.5	-17.5	15.9	7.4	moderate to stiff silt trace sand	
HRTR17-31	607165.58	698801.80	3/22/2005	10:46:00 AM	607166.00	698803.10	1.4	-15.8	14.6	14.4	moderate over stiff silt	
HRTR17-32	607154.95	698850.66	3/22/2005	10:28:00 AM	607159.50	698851.70	4.7	-14.3	13.5	12.9	moderate over stiff silt	
HRTR17-33	607144.33	698899.52	3/22/2005	10:18:00 AM	607147.30	698901.10	3.4	-11.9	11.3	10.9	moderate over stiff silt	
HRTR17-34	607133.71	698948.37	3/22/2005	10:12:00 AM	607132.30	698948.50	1.4	-5.0	4.3	13.6	moderate to stiff silt	
HRTR17-35	607123.09	698997.23	3/22/2005	10:09:00 AM	607125.20	698997.70	2.2	-1.9	1.2	11.2	soft silts over stiff silt trace sand	
HRTR17-36	607116.15	699029.14	3/29/2005	10:03:00 AM	607114.20	699028.70	2.0	1.3	3.3	6.7	silt over moderate to stiff silt over stiff silt/clay	

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SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR18-01	606947.93	697387.81	3/22/2005	2:41:00 PM	606947.93	697387.81	0.0	0.0	0.0	0.0		location on shore during high tide
HRTR18-02	606938.13	697436.84	3/22/2005	2:31:00 PM	606936.50	697438.90	2.6	-4.9	4.0	4.0	medium to coarse sand and gravel over silt, fine sand over stiff silt/clay	
HRTR18-03	606928.32	697485.87	3/22/2005	2:41:00 PM	606924.10	697487.90	4.7	-6.1	6.7	1.7	medium to coarse sand over moderate to stiff silt over stiff silt/clay	
HRTR18-04	606918.51	697534.90	3/22/2005	2:45:00 PM	606917.20	697534.60	1.3	-10.5	10.1	1.0	fine to medium sand over stiff silt/clay	
HRTR18-05	606908.71	697583.92	3/22/2005	2:51:00 PM	606907.50	697585.70	2.1	-11.4	10.9	0.7	fine to medium sand over tight fine sand	
HRTR18-06	606898.90	697632.95	3/22/2005	2:56:00 PM	606899.20	697634.80	1.9	-12.0	11.9	1.2	fine sand over stiff silt/clay	
HRTR18-07	606889.10	697681.98	3/22/2005	3:06:00 PM	606886.80	697685.10	3.9	-14.2	14.3	1.4	moderate to stiff silt over stiff silt/clay	
HRTR18-08	606879.29	697731.01	3/22/2005	3:27:00 PM	606876.40	697733.40	3.8	-18.1	18.5	1.4	stiff silt over stiff silt/clay	
HRTR18-09	606869.49	697780.04	3/23/2005	8:38:00 AM	606870.90	697779.00	1.8	-20.7	22.4	3.5	moderate to stiff silt over stiff silt/clay	
HRTR18-10	606859.68	697829.07	3/23/2005	8:55:00 AM	606866.00	697829.80	6.4	-21.9	23.2	4.0	moderate silt over stiff silt/clay	
HRTR18-11	606849.87	697878.10	3/23/2005	8:56:00 AM	606842.50	697876.60	7.5	-22.2	23.4	3.1	moderate to stiff silt over stiff silt/clay	
HRTR18-12	606840.07	697927.13	3/23/2005	12:37:00 PM	606837.60	697924.70	3.5	-21.7	19.4	20.5	fine sand over stiff silt/clay	
HRTR18-13	606830.26	697976.16	3/23/2005	12:32:00 PM	606827.50	697975.80	2.8	-22.2	20.2	1.9	fine sand over stiff silt/clay	
HRTR18-14	606820.46	698025.19	3/23/2005	12:15:00 PM	606822.60	698024.80	2.2	-20.5	18.4	1.5	fine to medium sand over stiff silt/clay	
HRTR18-15	606810.65	698074.21	3/23/2005	12:13:00 PM	606809.50	698074.80	1.3	-20.1	18.3	2.4	fine sand over stiff silt/clay	
HRTR18-16	606800.84	698123.24	3/23/2005	12:03:00 PM	606797.40	698121.80	3.7	-19.2	17.5	1.3	fine sand over stiff silt/clay	
HRTR18-17	606791.04	698172.27	3/23/2005	11:43:00 AM	606794.30	698171.10	3.5	-19.5	17.9	3.4	fine sand over stiff silt/clay	
HRTR18-18	606781.23	698221.30	3/23/2005	11:36:00 AM	606785.10	698221.00	3.9	-20.0	18.6	23.8	fine sand over moderately stiff silt over stiff silt/clay	
HRTR18-19	606771.43	698270.33	3/23/2005	11:29:00 AM	606774.80	698270.00	3.4	-20.6	19.4	9.8	fine medium sand over moderate to stiff silt over stiff silt/clay	
HRTR18-20	606761.62	698319.36	3/23/2005	11:22:00 AM	606762.80	698322.60	3.4	-21.7	20.5	9.9	silt over sand crust over moderately stiff silt over stiff silt/clay	
HRTR18-21	606751.82	698368.39	3/23/2005	11:18:00 AM	606753.00	698367.70	1.4	-20.2	21.2	11.8	silt over moderate to stiff silt over stiff silt/clay	
HRTR18-22	606742.01	698417.42	3/23/2005	10:59:00 AM	606744.70	698419.00	3.1	-21.1	22.0	7.8	silt over moderate to stiff silt over stiff silt/clay	
HRTR18-23	606732.20	698466.45	3/23/2005	10:34:00 AM	606731.90	698467.10	0.7	-22.0	22.4	9.6	silt over moderately stiff silt over stiff silt/clay	
HRTR18-24	606722.40	698515.48	3/23/2005	10:27:00 AM	606721.60	698517.90	2.6	-22.8	22.3	7.2	moderate to stiff silt over stiff silt/clay	
HRTR18-25	606712.59	698564.51	3/23/2005	10:20:00 AM	606710.30	698563.50	2.5	-20.1	19.8	8.0	silt over moderately stiff silt over stiff silt/clay	
HRTR18-26	606702.79	698613.53	3/23/2005	9:16:00 AM	606699.20	698611.10	4.3	-19.0	20.0	10.5	silt over moderate to stiff silt	
HRTR18-27	606692.98	698662.56	3/23/2005	9:22:00 AM	606691.80	698667.20	4.8	-16.0	17.1	11.4	silt over moderate to stiff silt over stiff silt/clay	
HRTR18-28	606683.18	698711.59	3/23/2005	9:24:00 AM	606682.70	698715.00	3.4	-14.7	14.9	9.5	moderate to stiff silt trace fine sand over stiff silt/clay	
HRTR18-29	606673.37	698760.62	3/23/2005	9:42:00 AM	606672.50	698761.10	1.0	-10.4	10.7	13.5	silt moderately stiff silt over stiff silt/clay	
HRTR18-30	606663.56	698809.65	3/23/2005	10:08:00 AM	606670.90	698807.80	7.6	-4.1	4.8	13.2	silt over moderately stiff silt	
HRTR18-31	606653.76	698858.68	3/23/2005	10:10:00 AM	606654.20	698860.50	1.9	-1.7	1.6	11.8	silt over moderately stiff silt over stiff silt/clay	
HRTR18-32	606645.64	698899.26	3/29/2005	10:13:00 AM	606645.90	698900.60	1.4	-0.6	2.2	10.3	silt over moderate to stiff silt over stiff silt	
HRTR19-01	606314.25	697427.76	3/29/2005	11:37:00 AM	606314.20	697427.70	0.1	0.0	0.0	0.0		behind sheet pile wall
HRTR19-02	606313.12	697477.75	3/23/2005	12:51:00 PM	606317.50	697475.70	4.8	-4.7	2.3	5.7	medium sand over silt over stiff silt/clay	
HRTR19-03	606311.98	697527.74	3/23/2005	1:01:00 PM	606310.80	697529.10	1.8	-9.2	6.8	1.0	fine to medium sand over stiff silt/clay	
HRTR19-04	606310.84	697577.72	3/23/2005	1:09:00 PM	606312.80	697572.80	5.3	-12.7	10.2	1.6	fine sand over tight sand	
HRTR19-05	606309.71	697627.71	3/23/2005	1:23:00 PM	606309.30	697625.90	1.9	-14.6	12.2	1.1	stiff silt over stiff silt/clay	
HRTR19-06	606308.57	697677.70	3/23/2005	1:32:00 PM	606307.80	697673.10	4.7	14.8	12.4	1.5	tight fine sand	
HRTR19-07	606307.44	697727.68	3/23/2005	1:34:00 PM	606307.70	697725.10	2.6	-19.5	17.0	1.8	fine sand over tight fine sand trace silt	
HRTR19-08	606306.30	697777.67	3/23/2005	1:51:00 PM	606303.90	697774.70	3.8	-24.2	21.6	2.7	fine sand over stiff silt/clay	
HRTR19-09	606305.16	697827.66	3/28/2005	1:34:00 PM	606309.10	697827.50	3.9	-25.9	26.2	1.6	silt over stiff silt	
HRTR19-10	606304.03	697877.65	3/28/2005	1:38:00 PM	606308.10	697878.10	4.1	-26.2	26.3	1.5	gravel fine sand over clay	
HRTR19-11	606302.89	697927.63	3/28/2005	1:57:00 PM	606307.10	697932.40	6.4	-26.0	26.0	1.7	silt over stiff clay	strong current in river, very difficult to get within 5' of target
HRTR19-12	606301.76	697977.62	3/24/2005	1:25:00 PM	606304.30	697977.60	2.5	-24.0	23.0	2.1	silt over stiff silt/clay	
HRTR19-13	606300.62	698027.61	3/24/2005	1:02:00 PM	606304.10	698030.80	4.7	-24.1	23.1	3.0	fine sand over stiff silt/clay	
HRTR19-14	606299.48	698077.59	3/24/2005	12:54:00 PM	606301.30	698075.50	2.8	-23.3	21.5	1.8	fine sand over stiff clay	
HRTR19-15	606298.35	698127.58	3/24/2005	12:48:00 PM	606300.10	698128.10	1.8	-22.7	22.0	1.4	fine sand over stiff clay	
HRTR19-16	606297.21	698177.57	3/24/2005	12:42:00 PM	606301.20	698175.80	4.4	-23.2	22.5	3.7	silt over stiff silt/clay	
HRTR19-17	606296.08	698227.55	3/24/2005	12:34:00 PM	606297.00	698229.30	2.0	-20.8	20.3	11.0	tight fine sand over silt over stiff silt/clay	
HRTR19-18	606294.94	698277.54	3/24/2005	12:26:00 PM	606295.70	698275.90	1.8	-21.4	21.0	7.7	tight fine sand over silt over stiff silt/clay	
HRTR19-19	606293.80	698327.53	3/24/2005	11:52:00 AM	606297.30	698328.60	3.7	-22.3	22.5	7.0	silt over stiff silt/clay	
HRTR19-20	606292.67	698377.52	3/23/2005	2:05:00 PM	606290.70	698378.90	2.4	-22.3	19.9	11.4	silt over moderate to stiff silt over stiff silt/clay	
HRTR19-21	606291.53	698427.50	3/23/2005	2:14:00 PM	606290.70	698423.20	4.4	-23.0	19.9	12.6	silt over moderate to stiff silt over stiff silt/clay	
HRTR19-22	606290.40	698477.49	3/23/2005	2:17:00 PM	606289.10	698473.10	4.6	-21.4	19.3	9.7	silt over moderate to stiff silt over stiff silt/clay	
HRTR19-23	606289.26	698527.48	3/23/2005	2:35:00 PM	606286.30	698527.70	3.0	-21.7	19.9	10.6	silt over moderate to stiff silt over stiff silt/clay	
HRTR19-24	606288.12	698577.46	3/23/2005	2:43:00 PM	606284.10	698577.50	4.0	16.8	15.7	11.0	silt over moderate to stiff silt over stiff silt/clay	
HRTR19-25	606286.99	698627.45	3/24/2005	4:20:00 PM	606287.80	698627.00	0.9	-11.8	15.7	13.6	silt over moderate to stiff silt over stiff silt/clay	
HRTR19-26	606285.85	698677.44	3/24/2005	4:23:00 PM	606285.40	698676.10	1.4	-7.2	10.9	16.6	silt over moderate to stiff silt over stiff silt/clay	
HRTR19-27	606284.72	698727.43	3/24/2005	4:24:00 PM	606285.50	698727.30	0.8	-2.2	6.0	15.8	silt over moderate to stiff silt over stiff silt/clay	
HRTR19-28	606283.58	698777.41	3/24/2005	4:27:00 PM	606280.40	698777.70	3.2	0.1	3.6	11.9	silt over moderate to stiff silt over stiff silt/clay	
HRTR19-29	606282.95	698805.13	3/24/2005	8:30:00 AM	606283.80	698806.00	1.2	0.9	2.9	15.3	silt over moderate to stiff silt over stiff silt/clay	

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR20-01	605774.22	697445.31	3/29/2005	11:32:00 AM	605774.20	697445.30	0.0	0.0	0.0	0.0		behind sheet pile wall
HRTR20-02	605776.14	697495.28	3/24/2005	10:46:00 AM	605774.60	697492.60	3.1	-4.4	5.9	5.1	stiff silt over stiff silt/clay	
HRTR20-03	605778.07	697545.24	3/24/2005	10:24:00 AM	605778.30	697543.50	1.8	-7.9	10.0	0.5	tight fine sand over stiff clay	
HRTR20-04	605779.99	697595.20	3/24/2005	10:16:00 AM	605780.70	697594.60	0.9	-13.7	16.0	0.8	tight fine sand	
HRTR20-05	605781.91	697645.17	3/24/2005	10:10:00 AM	605784.50	697644.30	2.7	-12.9	15.2	1.0	tight fine sand	
HRTR20-06	605783.83	697695.13	3/24/2005	10:00:00 AM	605783.90	697695.70	0.6	-17.5	19.0	1.1	stiff silt over clay	
HRTR20-07	605785.75	697745.09	3/24/2005	11:10:00 AM	605790.30	697743.90	4.7	-20.6	21.8	1.1	stiff clay	
HRTR20-08	605787.67	697795.06	3/24/2005	1:42:00 PM	605791.70	697794.40	4.1	-25.3	23.9	1.7	silt over stiff silt/clay	
HRTR20-09	605789.60	697845.02	3/28/2005	2:20:00 PM	605794.30	697847.00	5.1	-27.4	26.6	2.0	medium to coarse sand over stiff silt/clay	
HRTR20-10	605791.52	697894.98	3/28/2005	2:32:00 PM	605791.40	697893.70	1.3	-28.0	27.4	1.0	clay	
HRTR20-11	605793.44	697944.95	3/28/2005	2:44:00 PM	605793.50	697946.30	1.4	-29.2	28.7	1.5	fine sand over clay	
HRTR20-12	605795.36	697994.91	3/28/2005	2:52:00 PM	605797.90	697996.60	3.1	-28.9	27.9	1.3	fine to medium sand over stiff silt/clay	
HRTR20-13	605797.28	698044.87	3/28/2005	3:25:00 PM	605797.36	698041.70	3.2	-28.6	26.7	2.0	fine to medium sand over clay	
HRTR20-14	605799.20	698094.83	3/28/2005	3:26:00 PM	605799.40	698094.70	0.2	-25.7	24.5	3.5	fine to medium sand over tight fine sand	
HRTR20-15	605801.13	698144.80	3/29/2005	10:46:00 AM	605797.70	698147.10	4.1	-32.4	29.5	2.6	silt over stiff clay	
HRTR20-16	605803.05	698194.76	3/29/2005	10:40:00 AM	605801.50	698196.40	2.3	-30.7	27.7	4.6	fine sand over silt over stiff silt/clay	
HRTR20-17	605804.97	698244.72	3/29/2005	10:22:00 AM	605802.50	698242.90	3.1	-30.3	27.4	6.3	silt over stiff clay	
HRTR20-18	605806.89	698294.69	3/24/2005	11:39:00 AM	605814.30	698295.20	7.4	-20.6	20.8	2.8	fine sand over stiff silt/clay	
HRTR20-19	605808.81	698344.65	3/24/2005	9:44:00 AM	605811.60	698346.20	3.2	-18.7	22.5	10.9	fine sand over silt over stiff silt/clay	
HRTR20-20	605810.73	698394.61	3/24/2005	9:23:00 AM	605814.20	698396.00	3.7	-18.8	21.9	10.7	fine sand over silt over stiff silt/clay	
HRTR20-21	605812.66	698444.58	3/24/2005	9:12:00 AM	605815.50	698446.40	3.4	-18.7	22.0	11.9	silt over moderate to stiff silt over stiff silt/clay	
HRTR20-22	605814.58	698494.54	3/24/2005	9:04:00 AM	605812.20	698497.30	3.6	-14.0	17.4	12.8	silt over moderate to stiff silt over stiff silt/clay	
HRTR20-23	605816.50	698544.50	3/24/2005	9:01:00 AM	605816.50	698544.00	0.5	6.6	11.0	15.7	silt over moderate to stiff silt over stiff silt/clay	
HRTR20-24	605818.42	698594.46	3/24/2005	4:37:00 PM	605816.20	698590.50	4.5	-3.0	6.5	13.0	silt over moderate to stiff silt over stiff silt/clay	
HRTR20-25	605820.08	698637.51	3/24/2005	8:40:00 AM	605820.60	698637.60	0.5	0.3	3.3	11.3	silt over moderate to stiff silt over stiff silt/clay	
HRTR21-01	605117.63	697501.03	3/29/2005	11:35:00 AM	605117.60	697501.00	0.0	0.0	0.0	0.0		behind sheet pile wall
HRTR21-02	605131.74	697549.00	3/25/2005	7:50:00 AM	605133.90	697548.00	2.4	1.0	2.1	9.3	sand over silt over stiff clay	
HRTR21-03	605145.85	697596.97	3/25/2005	7:56:00 AM	605149.00	697597.10	3.2	-3.0	6.1	5.4	silt over moderate to stiff silt over stiff silt/clay	
HRTR21-04	605159.96	697644.93	3/25/2005	8:02:00 AM	605159.40	697642.60	2.4	-4.5	7.6	3.5	silt over moderate to stiff silt over stiff silt/clay	
HRTR21-05	605174.07	697692.90	3/25/2005	8:08:00 AM	605173.30	697696.90	4.1	-7.7	10.9	1.0	silt over tight fine sand	
HRTR21-06	605188.17	697740.87	3/25/2005	8:18:00 AM	605188.30	697749.80	8.9	-8.5	12.7	0.3	fine sand over stiff clay	
HRTR21-07	605202.28	697788.84	3/25/2005	9:39:00 AM	605205.80	697785.90	4.6	-12.9	15.5	1.5	fine sand over stiff clay	
HRTR21-08	605216.39	697836.81	3/24/2005	2:48:00 PM	605213.50	697833.60	4.3	-20.3	19.0	0.5	stiff clay	
HRTR21-09	605230.50	697884.78	3/24/2005	2:53:00 PM	605234.10	697882.20	4.4	-25.2	23.9	2.8	silt over stiff silt/clay	
HRTR21-10	605244.61	697932.74	3/29/2005	1:21:00 PM	605245.20	697929.50	3.3	-30.2	31.5	1.7	silt over stiff silt/clay	
HRTR21-11	605258.72	697980.71	3/29/2005	1:15:00 PM	605261.90	697980.90	3.2	-33.1	34.5	1.6	fine sand over silt over stiff silt/clay	
HRTR21-12	605272.82	698028.68	3/29/2005	12:54:00 PM	605272.90	698024.90	3.8	-33.6	35.1	2.3	silt over stiff silt/clay	
HRTR21-13	605286.93	698076.65	3/29/2005	12:49:00 PM	605287.50	698075.10	1.6	-37.3	39.2	1.1	silt fine sand over stiff clay	
HRTR21-14	605301.04	698124.62	3/29/2005	12:42:00 PM	605303.20	698124.00	2.2	-38.0	42.0	0.8	stiff clay	
HRTR21-15	605315.15	698172.59	3/29/2005	12:37:00 PM	605315.80	698169.80	2.9	-38.5	40.6	0.9	silt fine sand over stiff clay	
HRTR21-16	605329.26	698220.55	3/29/2005	12:29:00 PM	605331.90	698218.30	3.5	-39.0	35.7	1.6	fine sand over stiff clay	
HRTR21-17	605343.37	698268.52	3/29/2005	12:28:00 PM	605343.80	698265.50	3.1	-31.9	29.5	0.4	fine sand over stiff clay	
HRTR21-18	605357.47	698316.49	3/24/2005	2:36:00 PM	605354.10	698317.40	3.5	-19.4	17.8	11.4	fine sand over tight fine sand over stiff silt/clay	
HRTR21-19	605371.58	698364.46	3/24/2005	2:29:00 PM	605371.30	698362.80	1.7	-17.5	16.0	12.1	fine sand over silt over stiff silt clay	
HRTR21-20	605385.69	698412.43	3/24/2005	2:24:00 PM	605386.60	698413.10	1.1	-15.7	14.2	11.1	fine sand over silt over stiff silt clay	
HRTR21-21	605399.80	698460.40	3/24/2005	2:20:00 PM	605398.40	698458.20	2.6	-11.4	9.8	11.7	silt over stiff silt/clay	
HRTR21-22	605413.91	698508.36	3/24/2005	2:14:00 PM	605414.20	698506.10	2.3	-5.2	3.8	11.4	silt over stiff silt/clay	
HRTR21-23	605428.02	698556.33	3/24/2005	2:09:00 PM	605429.00	698552.00	4.4	-0.5	0.0	6.0	silt over stiff silt/clay	exposed sediment locations near shore
HRTR21-24	605435.63	698582.23	3/29/2005	10:00:00 AM	605435.60	698582.20	0.0	0.0	0.0	0.0		location on shore during high tide
HRTR22-01	604596.87	697874.02	3/29/2005	11:33:00 AM	604596.80	697874.00	0.1	0.0	0.0	0.0		behind sheet pile wall
HRTR22-02	604620.96	697917.83	3/29/2005	3:00:00 PM	604621.20	697920.70	2.9	-0.9	0.4	0.2	sandy silt over stiff clay	
HRTR22-03	604645.06	697961.65	3/29/2005	8:56:00 AM	604647.90	697958.40	4.3	-3.5	5.8	4.2	loose silt over moderate stiff silt over stiff silt/clay	
HRTR22-04	604669.16	698005.46	3/29/2005	9:01:00 AM	604670.30	698007.90	2.7	-11.6	13.9	0.5	tight fine sand	
HRTR22-05	604693.25	698049.27	3/29/2005	9:05:00 AM	604690.80	698050.60	2.8	-21.9	19.7	0.4	stiff clay	
HRTR22-06	604717.35	698093.08	3/29/2005	9:19:00 AM	604718.30	698092.90	1.0	-25.8	23.4	1.7	stiff silt over stiff clay	
HRTR22-07	604741.44	698136.89	3/29/2005	10:55:00 AM	604741.70	698132.80	4.1	-32.3	29.3	2.8	silt over moderate to stiff silt over stiff silt/clay	
HRTR22-08	604765.54	698180.70	4/12/2005	8:04:00 AM	604762.63	698181.02	2.9	-30.5	29.8	3.4	soft to moderate silt over stiff silt/clay	3/4" probe rod
HRTR22-09	604789.64	698224.51	4/6/2005	3:08:00 PM	604789.65	698225.81	1.3	-44.9	42.1	3.2	moderate to stiff silt over stiff clay	3/4" probe rod
HRTR22-10	604813.73	698268.32	4/6/2005	3:26:00 PM	604812.00	698269.71	2.2	-54.2	52.1	2.1	moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR22-11	604837.83	698312.13	4/6/2005	3:30:00 PM	604836.60	698312.83	1.4	-55.2	53.0	0.9	stiff silt over clay	3/4" probe rod
HRTR22-12	604861.92	698355.94	4/6/2005	3:32:00 PM	604859.78	698358.15	3.1	-53.3	51.4	2.1	stiff silt over clay	3/4" probe rod
HRTR22-13	604886.02	698399.75	4/6/2005	3:36:00 PM	604881.26	698398.02	5.1	-45.6	43.7	4.1	moderate to stiff silt over stiff silt over clay	3/4" probe rod
HRTR22-14	604910.12	698443.56	4/6/2005	3:49:00 PM	604909.55	698444.65	1.2	-43.0	41.2	1.7	moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR22-15	604934.21	698487.37	3/29/2005	11:29:00 AM	604933.80	698485.10	2.3	-28.7	25.8	7.7	silt over moderate to stiff silt over stiff silt/clay	

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR22-16	604958.31	698531.19	3/25/2005	10:04:00 AM	604959.70	698529.30	2.3	-7.5	9.6	8.0	silt over moderate to stiff silt over stiff silt/clay	
HRTR22-17	604982.40	698575.00	3/25/2005	10:03:00 AM	604978.50	698578.50	5.2	-3.4	4.9	11.7	silt over stiff silt/clay	
HRTR22-18	605002.73	698611.95	3/29/2005	9:29:00 AM	605002.70	698611.90	0.1	0.0	0.0	0.0		location on shore during high tide
HRTR23-01	604112.06	698491.80	3/25/2005	9:08:00 AM	604113.86	698504.09	12.4	2.1	1.1	0.0	gravel, rip rap	
HRTR23-02	604157.27	698513.15	3/25/2005	9:14:00 AM	604154.57	698513.91	2.8	-4.2	7.2	3.5	stiff silt over stiff silt/clay	
HRTR23-03	604202.48	698534.50	3/25/2005	9:19:00 AM	604202.86	698528.26	6.3	-12.4	15.4	2.1	stiff silt/clay	
HRTR23-04	604247.70	698555.85	3/25/2005	9:44:00 AM	604247.44	698554.95	0.9	-23.5	26.1	3.2	silt silt/clay	
HRTR23-05	604292.91	698577.20	3/28/2005	1:39:00 PM	604296.27	698580.70	4.9	-33.9	34.5	1.2	sandy silt with some fine gravel over clay	
HRTR23-06	604338.12	698598.55	3/29/2005	7:26:00 AM	604337.09	698597.38	1.6	-41.8	42.5	1.3	stiff silt over clay	3/4" probe rod
HRTR23-07	604383.33	698619.90	3/29/2005	7:45:00 AM	604383.29	698620.36	0.5	-43.8	44.8	0.2	stiff sandy silt over clay	
HRTR23-08	604428.55	698641.25	3/29/2005	8:52:00 AM	604430.82	698639.89	2.6	-43.8	45.8	0.3	clay	3/4" probe rod
HRTR23-09	604473.76	698662.59	3/29/2005	11:49:00 AM	604471.95	698659.51	3.6	-41.3	43.7	0.6	silt over clay	
HRTR23-10	604518.97	698683.94	3/29/2005	4:07:00 PM	604519.08	698682.48	1.5	-33.2	32.1	0.9	silt over clay	3/4" probe rod
HRTR23-11	604564.19	698705.29	4/12/2005	8:12:00 AM	604565.10	698709.26	4.1	-33.1	32.4	3.6	fine sand over stiff silt/clay	3/4" probe rod
HRTR23-12	604609.40	698726.64	3/29/2005	11:51:00 AM	604609.24	698724.06	2.6	-35.9	38.5	0.7	silt over clay	
HRTR23-13	604654.61	698747.99	3/25/2005	8:59:00 AM	604653.93	698752.49	4.5	-22.7	25.8	3.1	moderate to stiff silt over stiff silt/clay	
HRTR23-14	604699.82	698769.34	3/25/2005	8:27:00 AM	604701.98	698772.98	4.2	-18.8	22.0	7.0	soft to moderate silt over stiff silt/clay	
HRTR23-15	604745.04	698790.69	3/25/2005	8:17:00 AM	604746.51	698791.72	1.8	-14.5	17.7	8.6	moderate to soft silt over stiff silt	
HRTR23-16	604790.25	698812.04	3/25/2005	8:12:00 AM	604788.68	698806.54	5.7	0.6	2.6	11.8	soft silt over stiff silt	
HRTR23-17	604814.59	698823.53	4/4/2005	6:12:00 PM	604814.59	698823.53	0.0	0.0	0.0	0.0		location on shore at high tide +/- 100' east
HRTR24-01	603909.19	699055.34	4/4/2005	6:12:00 PM	603909.19	699055.34	0.0	0.0	0.0	0.0		location on shore at high tide
HRTR24-02	603958.15	699065.47	3/24/2005	1:25:00 PM	603958.23	699064.90	0.6	-13.5	12.3	6.0	soft silt over moderate to stiff silt over stiff silt	
HRTR24-03	604007.11	699075.60	3/24/2005	1:33:00 PM	604009.23	699077.60	2.9	-25.9	24.7	4.4	stiff sand and silt	
HRTR24-04	604056.08	699085.73	3/24/2005	1:42:00 PM	604060.93	699085.83	4.9	-30.0	28.8	3.0	stiff sand and silt over stiff silt/clay	
HRTR24-05	604105.04	699095.86	3/24/2005	1:49:00 PM	604104.92	699093.79	2.1	-31.2	29.9	5.6	silt and sand over stiff silt	
HRTR24-06	604154.00	699105.99	3/24/2005	2:15:00 PM	604156.42	699107.90	3.1	-34.7	33.3	4.1	silt and sand with some fine gravel over stiff silt	
HRTR24-07	604202.97	699116.12	3/24/2005	2:24:00 PM	604202.35	699113.40	2.8	-36.5	34.9	4.3	stiff silt and sand over moderate to stiff silt over stiff silt/clay	
HRTR24-08	604251.93	699126.25	3/28/2005	2:54:00 PM	604248.49	699123.49	4.4	-38.9	38.0	1.2	soft silt over clay	
HRTR24-09	604300.89	699136.38	3/29/2005	3:16:00 PM	604304.08	699132.69	4.9	-39.2	38.9	1.2	silt and sand over clay	3/4" probe rod
HRTR24-10	604349.86	699146.51	3/29/2005	3:37:00 PM	604350.41	699147.14	0.8	-39.7	38.8	1.1	soft silt and sand over stiff silt over clay	
HRTR24-11	604398.82	699156.64	3/29/2005	3:40:00 PM	604397.46	699153.54	3.4	-39.4	38.6	0.9	silt with some sand over clay	3/4" probe rod
HRTR24-12	604447.78	699166.77	3/29/2005	9:47:00 AM	604447.46	699171.52	4.8	-38.0	40.9	4.3	sandy silt over stiff silt over clay, 3/4" probe rod	3/4" probe rod
HRTR24-13	604496.74	699176.90	3/24/2005	2:39:00 PM	604497.09	699175.22	1.7	-33.2	31.7	7.0	silt and sand some fine gravel over stiff silt/clay	
HRTR24-14	604545.71	699187.03	3/24/2005	2:48:00 PM	604542.38	699183.71	4.7	-29.5	28.1	8.5	silt and sand with some fine gravel over stiff silt/clay	
HRTR24-15	604594.67	699197.16	3/24/2005	2:57:00 PM	604593.13	699201.17	4.3	-18.0	16.7	4.3	moderate to stiff silt over stiff silt/clay	
HRTR24-16	604643.63	699207.29	3/25/2005	7:49:00 AM	604641.22	699204.07	4.0	-0.3	3.4	8.3	soft silt over stiff silt	
HRTR24-17	604692.60	699217.42	3/25/2005	7:43:00 AM	604690.93	699218.01	1.8	0.6	2.6	8.6	soft silt over stiff silt	
HRTR24-18	604705.82	699220.16	3/25/2005	7:32:00 AM	604708.98	699221.18	3.3	-4.2	7.2	12.0	soft silt over stiff silt	
HRTR25-01	603833.15	699867.46	3/30/2005	10:10:00 AM	603836.00	699867.20	2.9	0.1	1.8	0.2	coarse sand and gravel over rock	
HRTR25-02	603882.95	699871.92	3/30/2005	7:23:00 AM	603881.30	699870.30	2.3	-13.1	11.6	1.3	coarse sand and gravel over moderate to stiff silt over clay	
HRTR25-03	603932.75	699876.38	4/12/2005	1:05:00 PM	603933.65	699874.15	2.4	-26.1	28.0	2.4	moderate to stiff silt some fine sand over stiff clay	3/4" probe rod
HRTR25-04	603982.56	699880.84	4/12/2005	12:59:00 PM	603982.15	699880.70	0.4	-28.7	30.8	2.8	tight fine to medium sand and gravel over moderate silt over stiff clay	3/4" probe rod
HRTR25-05	604032.36	699885.30	4/12/2005	12:54:00 PM	604032.65	699883.24	2.1	-33.2	35.2	3.2	stiff fine to medium sand over stiff clay	3/4" probe rod
HRTR25-06	604082.16	699889.76	4/12/2005	12:48:00 PM	604081.63	699890.79	1.2	-33.1	35.1	3.8	stiff fine to medium sand over stiff clay	3/4" probe rod
HRTR25-07	604131.96	699894.22	4/12/2005	12:43:00 PM	604134.66	699895.60	3.0	-32.1	34.2	3.3	stiff fine to medium sand over clay	3/4" probe rod
HRTR25-08	604181.76	699898.68	4/12/2005	12:42:00 PM	604177.47	699900.10	4.5	-33.3	35.4	4.5	stiff fine to medium sand over stiff clay	3/4" probe rod
HRTR25-09	604231.56	699903.14	4/12/2005	12:36:00 PM	604229.20	699900.06	3.9	-27.9	30.0	4.6	stiff medium to coarse sand over stiff silt/clay	3/4" probe rod
HRTR25-10	604281.36	699907.59	4/12/2005	12:33:00 PM	604280.98	699906.42	1.2	-31.2	33.4	6.6	stiff medium to coarse sand and gravel over stiff clay	3/4" probe rod
HRTR25-11	604331.16	699912.05	4/12/2005	12:26:00 PM	604330.89	699915.85	3.8	-32.4	34.7	5.1	stiff fine to medium sand over moderate to stiff silt/clay	3/4" probe rod
HRTR25-12	604380.96	699916.51	4/12/2005	12:18:00 PM	604382.62	699914.06	3.0	-31.0	33.2	6.8	stiff fine to medium sand over moderate silt over stiff silt/clay	3/4" probe rod
HRTR25-13	604430.76	699920.97	4/12/2005	12:08:00 PM	604429.30	699922.60	2.2	-31.8	34.0	3.5	fine to medium sand over stiff clay	3/4" probe rod
HRTR25-14	604480.56	699925.43	4/12/2005	11:59:00 AM	604479.31	699929.62	4.4	-28.7	31.0	2.9	tight sand and some fine gravel over stiff silt/clay	3/4" probe rod
HRTR25-15	604530.36	699929.89	4/12/2005	11:56:00 AM	604529.98	699930.44	0.7	-29.7	31.9	5.1	fine to medium sand over tight fine to medium sand	3/4" probe rod
HRTR25-16	604580.16	699934.35	4/12/2005	1:21:00 PM	604580.20	699931.81	2.5	-14.4	16.1	8.4	moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR25-17	604629.96	699938.81	3/30/2005	7:51:00 AM	604624.60	699936.70	5.8	-8.8	8.8	14.0	silt over moderate to stiff silt over stiff silt/clay	
HRTR25-18	604679.77	699943.27	3/30/2005	7:49:00 AM	604677.90	699940.70	3.2	-1.4	0.8	5.4	gravel rock over moderate to stiff silt over stiff silt	
HRTR25-19	604729.57	699947.73	3/30/2005	7:50:00 AM	604729.50	699947.70	0.1	0.0	0.0	0.0		location on shore at high tide
HRTR25-20	604735.08	699948.23	4/12/2005	11:52:00 AM	604735.08	699948.23	0.0	0.0	0.0	0.0		location on shore at high tide
HRTR26-01	603879.49	700221.64	3/30/2005	9:48:00 AM	603883.00	700220.60	3.7	0.4	1.0	0.5	moderate to stiff silt over coarse sand and gravel over rock	
HRTR26-02	603928.22	700210.47	3/30/2005	9:42:00 AM	603929.60	700211.60	1.8	-11.6	12.8	1.0	coarse sand and gravel over rock	
HRTR26-03	603976.96	700199.30	4/12/2005	8:45:00 AM	603974.45	700199.54	2.5	-20.8	20.7	0.2	medium to coarse sand over clay	3/4" probe rod
HRTR26-04	604025.70	700188.13	4/12/2005	8:57:00 AM	604026.84	700190.07	2.2	-26.2	26.4	0.8	medium to coarse sand some fine gravel over clay	3/4" probe rod
HRTR26-05	604074.43	700176.97	4/12/2005	9:24:00 AM	604076.64	700180.39	4.1	-31.4	32.1	0.4	medium to coarse sand over stiff clay	3/4" probe rod

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SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR26-06	604123.17	700165.80	4/12/2005	9:30:00 AM	604121.15	700169.57	4.3	-28.9	29.6	0.8	medium to coarse sand over stiff clay	3/4" probe rod
HRTR26-07	604171.91	700154.63	4/12/2005	10:42:00 AM	604171.96	700157.67	3.0	-29.7	31.2	1.2	stiff medium to coarse sand over clay	3/4" probe rod
HRTR26-08	604220.64	700143.46	4/12/2005	10:40:00 AM	604218.65	700147.07	4.1	-31.1	32.5	2.9	stiff medium to coarse sand over stiff silty clay	3/4" probe rod
HRTR26-09	604269.38	700132.29	4/12/2005	10:18:00 AM	604268.16	700129.79	2.8	-32.4	33.8	3.2	medium to coarse sand over stiff silty clay	3/4" probe rod
HRTR26-10	604318.12	700121.12	4/12/2005	10:15:00 AM	604316.00	700123.26	3.0	-31.4	32.7	3.7	medium to coarse sand over stiff silty clay	3/4" probe rod
HRTR26-11	604366.85	700109.95	4/12/2005	10:04:00 AM	604369.12	700111.33	2.6	-30.5	31.8	4.1	medium to coarse sand over stiff silty clay	3/4" probe rod
HRTR26-12	604415.59	700098.78	4/12/2005	10:02:00 AM	604415.02	700098.90	0.6	-28.7	29.8	4.6	medium to coarse sand over stiff silty clay	3/4" probe rod
HRTR26-13	604464.33	700087.62	4/12/2005	9:49:00 AM	604465.92	700091.91	4.6	-26.4	27.4	4.8	medium to coarse sand over stiff silty clay	3/4" probe rod
HRTR26-14	604513.06	700076.45	4/12/2005	9:39:00 AM	604516.76	700075.98	3.7	-21.7	22.7	6.0	medium to coarse sand over moderate to stiff silty clay	3/4" probe rod
HRTR26-15	604561.80	700065.28	3/30/2005	9:35:00 AM	604563.40	700061.50	4.1	-5.7	6.7	0.8	coarse sand and gravel	
HRTR26-16	604610.54	700054.11	3/30/2005	9:21:00 AM	604612.10	700058.40	4.6	-11.7	12.4	12.1	coarse sand and gravel over silt	
HRTR26-17	604659.27	700042.94	3/30/2005	9:14:00 AM	604661.70	700040.50	3.4	-8.4	9.0	12.7	silt over stiff silt	
HRTR26-18	604708.01	700031.77	3/30/2005	9:09:00 AM	604708.80	700035.40	3.7	-1.4	2.0	6.8	silt over stiff silt	
HRTR26-19	604756.75	700020.60	3/30/2005	9:11:00 AM	604756.70	700020.60	0.0	0.0	0.0	0.0		location on shore at high tide
HRTR26-20	604766.14	700018.45	3/30/2005	9:12:00 AM	604766.10	700018.40	0.1	0.0	0.0	0.0		location on shore at high tide
HRTR27-01	604048.18	700745.67	3/30/2005	10:03:00 AM	604047.20	700745.10	1.1	-4.2	5.5	5.2	coarse sand and gravel over silt over stiff clay	
HRTR27-02	604094.96	700728.03	4/12/2005	10:38:00 AM	604096.55	700730.51	2.9	-24.6	26.2	2.5	medium to coarse sand over stiff silty clay	3/4" probe rod
HRTR27-03	604141.75	700710.39	4/12/2005	10:43:00 AM	604138.61	700707.88	4.0	-27.3	29.2	3.1	stiff fine to medium sand over moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR27-04	604188.53	700692.75	4/12/2005	10:48:00 AM	604192.24	700691.06	4.1	-29.7	31.6	4.1	tight fine to medium sand over stiff silt/clay	3/4" probe rod
HRTR27-05	604235.32	700675.11	4/12/2005	10:50:00 AM	604236.77	700675.60	1.5	-27.8	29.6	3.6	tight fine to medium sand over stiff silt/clay	3/4" probe rod
HRTR27-06	604282.10	700657.47	3/29/2005	2:49:00 PM	604283.44	700653.22	4.4	-27.7	27.9	4.2	soft to moderate silt over stiff silt over clay	3/4" probe rod
HRTR27-07	604328.89	700639.83	3/29/2005	2:13:00 PM	604330.11	700636.64	3.4	-34.0	34.8	4.2	soft to moderate silt with some fine gravel over stiff silt over clay	3/4" probe rod
HRTR27-08	604375.67	700622.19	3/29/2005	12:18:00 PM	604376.13	700627.04	4.9	-35.2	38.3	0.8	sandy silt with some fine gravel over clay	3/4" probe rod
HRTR27-09	604422.46	700604.55	3/29/2005	12:22:00 PM	604422.98	700607.99	3.5	-34.0	37.0	0.3	silt over clay	3/4" probe rod
HRTR27-10	604469.24	700586.91	3/29/2005	12:48:00 PM	604471.64	700584.44	3.4	-32.1	34.5	0.2	sand and gravel over clay	3/4" probe rod
HRTR27-11	604516.03	700569.26	3/29/2005	1:26:00 PM	604515.86	700567.95	1.3	-33.2	35.2	0.3	sand and gravel over clay	
HRTR27-12	604562.81	700551.62	3/29/2005	1:34:00 PM	604560.42	700550.42	2.7	-32.0	33.1	0.4	sand and silt over clay	
HRTR27-13	604609.60	700533.98	3/29/2005	1:55:00 PM	604610.98	700533.58	1.4	-29.0	30.1	2.8	soft to moderate silt over stiff silt over clay	3/4" probe rod
HRTR27-14	604656.38	700516.34	3/29/2005	2:09:00 PM	604657.83	700514.97	2.0	-28.9	29.8	3.6	soft to moderate stiff silt over stiff silt over clay	3/4" probe rod
HRTR27-15	604703.17	700498.70	4/12/2005	10:57:00 AM	604705.10	700497.37	2.3	-26.0	27.8	30.6	moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR27-16	604749.95	700481.06	3/29/2005	3:43:00 PM	604749.60	700478.60	2.5	-14.9	13.9	11.5	silt over stiff silt	
HRTR27-17	604796.74	700463.42	3/29/2005	3:45:00 PM	604796.10	700467.40	4.0	-10.4	9.3	13.0	silt over stiff silt	
HRTR27-18	604843.52	700445.78	3/29/2005	3:51:00 PM	604840.20	700443.00	4.3	-4.8	3.5	3.8	silt over stiff silt	
HRTR27-19	604861.68	700438.94	3/29/2005	3:59:00 PM	604861.60	700438.90	0.1	0.0	0.0	0.0		location on shore at high tide
HRTR28-01	604133.79	700953.35	4/4/2005	3:29:00 PM	604142.06	700853.56	100.1	-21.1	18.9	2.8	stiff fine to medium sand over stiff silt/clay	moved due to bridge
HRTR28-02	604183.74	700955.77	4/4/2005	1:53:00 PM	604194.66	700891.18	65.5	-26.5	24.4	2.3	medium to coarse sand and gravel over silt over clay	moved 70' south due to bridge
HRTR28-03	604233.68	700958.18	4/4/2005	1:56:00 PM	604290.28	700897.76	82.8	-23.7	21.6	2.1	stiff sand and some fine gravel over silt/clay	moved south due to bridge
HRTR28-04	604283.62	700960.59	4/4/2005	2:01:00 PM	604329.92	700873.56	98.6	-25.4	23.4	1.8	stiff fine sand over stiff clay	moved south due to bridge
HRTR28-05	604333.56	700963.01	4/4/2005	2:03:00 PM	604330.80	700876.27	86.8	-23.7	21.9	2.4	fine stiff sand some fine gravel over stiff silt/clay	moved due to bridge
HRTR28-06	604383.50	700965.42	4/4/2005	2:12:00 PM	604403.18	700879.48	88.2	-37.4	35.6	1.2	moderate to stiff silt over clay	moved due to bridge, 3/4" probe rod
HRTR28-07	604433.44	700967.83	4/4/2005	2:15:00 PM	604459.56	700855.22	115.6	-37.5	36.8	1.3	stiff sand over stiff silt/clay	moved due to bridge, 3/4" probe rod
HRTR28-08	604483.39	700970.24	4/4/2005	2:53:00 PM	604460.73	700815.60	156.3	-35.2	34.8	2.1	stiff sand over moderate to stiff silt over clay	moved due to bridge, 3/4" probe rod
HRTR28-09	604533.33	700972.66	4/4/2005	3:31:00 PM	604490.65	700833.08	146.0	-35.1	35.6	0.9	stiff fine sand over stiff silt/clay	moved due to bridge, 3/4" probe rod
HRTR28-10	604583.27	700975.07	4/4/2005	3:35:00 PM	604555.27	700818.07	159.5	-34.7	35.3	0.9	stiff sand and fine gravel over stiff silt/clay	moved due to bridge
HRTR28-11	604633.21	700977.48	4/4/2005	3:40:00 PM	604583.17	700850.08	136.9	-35.2	35.9	1.4	stiff fine to medium sands and gravel over stiff silt/clay	moved due to bridge
HRTR28-12	604683.15	700979.89	4/4/2005	3:43:00 PM	604647.39	700851.79	133.0	-35.0	35.7	2.1	stiff sand over stiff silt/clay	moved due to bridge
HRTR28-13	604733.10	700982.31	4/4/2005	3:46:00 PM	604678.64	700862.54	131.6	-32.0	32.9	0.7	stiff sand and gravel over clay, moved due to bridge	3/4" probe rod
HRTR28-14	604783.04	700984.72	4/4/2005	3:53:00 PM	604704.52	700883.67	128.0	-29.6	30.5	0.9	stiff sandy silt over stiff silt/clay	moved due to bridge , 3/4" probe rod
HRTR28-15	604832.98	700987.13	4/4/2005	3:24:00 PM	604760.95	700847.75	156.9	-36.2	36.4	2.2	stiff sand and gravel over stiff silt/clay	moved due to bridge , 3/4" probe rod
HRTR28-16	604882.92	700989.54	4/4/2005	3:20:00 PM	604810.61	700845.14	161.5	-29.8	29.9	3.1	stiff sand with some fine gravel over stiff to moderate silt	moved due to bridge , 3/4" probe rod
HRTR28-17	604932.86	700991.96	4/4/2005	3:17:00 PM	604829.35	700825.55	196.0	-28.2	28.2	5.1	moderate to stiff silt over stiff silt	moved due to bridge
HRTR28-18	604982.80	700994.37	4/4/2005	3:11:00 PM	604935.93	700898.51	106.7	-11.6	11.6	5.1	stiff sand over soft to moderate silt over silt	moved due to bridge
HRTR28-19	605032.75	700996.78	4/4/2005	3:08:00 PM	604916.01	700873.76	169.6	-9.0	8.5	6.9	fine sand over soft silt over moderate to stiff silt	moved due to bridge
HRTR28-20	605062.64	700998.23	4/4/2005	2:57:00 PM	604968.32	700860.10	167.3	-4.0	3.5	7.7	stiff fine sand over soft silt over moderate to stiff silt	moved due to bridge
HRTR29-01	604618.41	701819.38	3/30/2005	2:58:00 PM	604620.93	701821.29	3.2	-30.1	30.4	1.5	stiff sand with some fine gravel over stiff silt	3/4" probe rod
HRTR29-02	604662.62	701796.02	3/30/2005	3:00:00 PM	604664.28	701795.18	1.9	-34.6	34.9	1.2	stiff silt/clay	3/4" probe rod
HRTR29-03	604706.82	701772.66	3/30/2005	2:24:00 PM	604704.12	701771.30	3.0	-33.6	34.6	1.2	sand and some fine gravel over stiff silt/clay	3/4" probe rod
HRTR29-04	604751.03	701749.30	3/30/2005	2:47:00 PM	604750.97	701746.33	3.0	-40.5	41.5	0.9	sand with some fine gravel over stiff silt/clay	3/4" probe rod
HRTR29-05	604795.24	701725.93	3/30/2005	1:46:00 PM	604792.66	701724.68	2.9	-42.2	44.0	2.1	soft to moderate stiff silt over stiff silt/clay	3/4" probe rod
HRTR29-06	604839.44	701702.57	3/30/2005	8:34:00 AM	604838.89	701706.76	4.2	-40.0	40.1	2.1	stiff sandy silt over stiff silt/clay	3/4" probe rod
HRTR29-07	604883.65	701679.21	3/30/2005	8:11:00 AM	604883.79	701680.75	1.5	-40.2	39.5	2.3	stiff sandy silt with some fine gravel over stiff silt	3/4" probe rob
HRTR29-08	604927.86	701655.85	3/30/2005	7:36:00 AM	604927.13	701656.90	1.3	-41.2	39.9	3.1	soft to moderate stiff sandy silt over stiff silt	3/4" probe rod

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SEDIMENT PROBING FIELD INFORMATION

Station ID	Target Easting	Target Northing	Date Collected	Time Collected	Actual Easting	Actual Northing	Approximate Distance From Target (ft)	Bed Elevation (ft-NAVD88)	Water Depth (ft)	Sediment Depth (ft)	General Sediment Description (see Note 1)	Comments
HRTR29-09	604972.06	701632.49	3/30/2005	9:53:00 AM	604973.83	701635.02	3.1	-37.8	38.7	1.6	stiff sandy silt over stiff silt	
HRTR29-10	605016.27	701609.13	3/30/2005	1:20:00 PM	605012.12	701606.14	5.1	-31.1	33.4	3.4	moderate to stiff silt over stiff silt/clay	3/4" probe rod
HRTR29-11	605060.48	701585.77	3/30/2005	2:05:00 PM	605059.18	701584.09	2.1	-31.4	33.1	3.4	sandy silt with some fine gravel over stiff silt/clay	3/4" probe rod
HRTR29-12	605104.68	701562.40	3/30/2005	2:07:00 PM	605106.04	701560.32	2.5	-27.9	29.6	2.8	sand and gravel some cobbles over stiff silt/clay	3/4" probe rod
HRTR29-13	605148.89	701539.04	3/30/2005	11:10:00 AM	605146.90	701540.60	2.5	-21.9	23.0	2.1	coarse sand and gravel over moderate to stiff silt over stiff clay	
HRTR29-14	605193.10	701515.68	3/30/2005	11:01:00 AM	605193.90	701516.10	0.9	-1.0	3.1	0.0	rock and gravel no sediment	
HRTR29-15	605237.30	701492.32	3/30/2005	11:08:00 AM	605237.30	701492.30	0.0	0.0	0.0	0.0		location on shore during high tide; possibly on access road for RR location
HRTR29-16	605251.60	701484.76	3/30/2005	11:09:00 AM	605251.60	701484.76	0.0	0.0	0.0	0.0		location on shore during high tide; possibly on access road for RR location
HRTR30-01	604881.55	702275.85	3/30/2005	11:26:00 AM	604880.50	702276.90	1.5	-5.1	7.3	5.7	silt over stiff silt/clay	
HRTR30-02	604923.44	702248.54	3/30/2005	11:27:00 AM	604921.90	702249.30	1.7	-16.6	18.8	0.2	stiff clay	
HRTR30-03	604965.33	702221.24	3/30/2005	11:23:00 AM	604961.54	702223.46	4.4	-30.8	33.5	2.3	stiff sand and silt with some fine gravel over stiff silt/clay	3/4" probe rod
HRTR30-04	605007.22	702193.94	3/30/2005	11:05:00 AM	605009.81	702195.00	2.8	-35.5	37.8	1.8	stiff sand and silt some fine gravel over stiff silt/clay	3/4" probe rod
HRTR30-05	605049.10	702166.64	3/30/2005	11:07:00 AM	605047.98	702166.21	1.2	-36.9	39.2	2.2	stiff sand and silt with some fine gravel over stiff silt/clay	3/4" probe rod
HRTR30-06	605090.99	702139.33	3/30/2005	10:43:00 AM	605094.61	702137.22	4.2	-34.3	36.4	2.3	stiff sandy silt over stiff silt/clay	
HRTR30-07	605132.88	702112.03	3/30/2005	10:15:00 AM	605134.49	702108.64	3.8	-35.0	36.9	2.3	stiff sandy silt over stiff silt	3/4" probe rod
HRTR30-08	605174.77	702084.73	3/30/2005	9:45:00 AM	605170.28	702085.76	4.6	-34.1	36.0	2.8	stiff sandy silt over stiff silt	3/4" probe rod
HRTR30-09	605216.66	702057.43	3/30/2005	12:31:00 PM	605219.00	702061.40	4.6	-31.8	34.5	3.5	stiff sandy silt over stiff silt	3/4" probe rod
HRTR30-10	605258.54	702030.12	3/30/2005	12:42:00 PM	605257.75	702032.40	2.4	-29.9	32.5	3.0	stiff sandy silt with some gravel over stiff silt	3/4" probe rob
HRTR30-11	605300.43	702002.82	3/30/2005	12:57:00 PM	605299.89	702002.38	0.7	-31.6	34.3	2.4	stiff silt and sand with some gravel over stiff silt	3/4" probe rod
HRTR30-12	605342.32	701975.52	3/30/2005	1:15:00 PM	605341.32	701972.48	3.2	-28.2	30.6	2.7	stiff sand and gravel over stiff silt	3/4" probe rod
HRTR30-13	605384.21	701948.22	3/30/2005	1:12:00 PM	605384.80	701946.96	1.4	-25.7	28.1	2.0	sandy silt with some fine gravel over stiff silt	3/4" probe rod
HRTR30-14	605426.09	701920.91	3/30/2005	1:17:00 PM	605424.82	701919.32	2.0	-23.8	26.2	2.9	stiff sand with some fine gravel over stiff silt/clay	3/4" probe rod
HRTR30-15	605467.98	701893.61	3/30/2005	12:21:00 PM	605469.20	701892.70	1.5	-17.1	19.4	1.4	coarse sand gravel over moderate to stiff silt over stiff silt/clay	
HRTR30-16	605500.24	701872.59	3/30/2005	12:03:00 PM	605499.90	701875.10	2.5	-3.9	6.2	0.0	coarse sand gravel and rock no sediment	

Notes:
NAVD88 = North American Vertical Datum of 1988
ft = feet

1. During probing operations, the depth of refusal was interpreted as the interface between softer sediments and hard/stiff clay or rock. Because sediment cores were not collected as part of this task (for purposes of visual observations), sediment types are to be considered "best estimates".

Appendix F

Sediment Grab Sampling Field Information

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APPENDIX F

PENINSULA RESTORATION GROUP
RECONNAISSANCE INVESTIGATION REPORT
FOR THE HACKENSACK RIVER STUDY AREA

SEDIMENT GRAB SAMPLING FIELD INFORMATION

Station ID	Sample Northing	Sample Easting	Sample Distance From Target (ft)	Date Collected	Time Collected	Geographic Description	Water Depth (ft)	Wind Speed/ Direction	Temperature (degress Farenheit)	Precipitation	Cloud Cover	Sea State	Sediment Collection Method	Final Disposition	Comments
HRFRSED001A	694538.092	606432.192	2.4	4/13/2005	12:39:00 PM	Middle of River, navigation channel, south of Amtrak bridge	39.6	South, 5-10mph	50	None	Clear sky	Small chop, water level rising	Ponar dredge	Retained for Processing	
HRFRSED002A	695092.807	607257.176	3.8	4/13/2005	12:57:00 PM	North bank of River, between Amtrak bridge and triple bridges	28.7	South, 5-10mph	50	None	Clear sky	Small chop, water level rising	Ponar dredge	Retained for Processing	
HRFRSED003A	695194.506	608327.627	1.6	4/13/2005	1:27:00 PM	Middle of River, northeast of triple bridges	48.2	South, 5-10mph	50	None	Clear sky	Small chop, water level decreasing	Ponar dredge	Retained for Processing	
HRFRSED004A	N/A	N/A	N/A	N/A	N/A	Both east and west bank of river are gravel and cobble, actual location is approx. 80' east under barge.	N/A	South, 5-10mph	50	None	Clear sky	Small chop, water level decreasing	Ponar dredge	Rejected	Attempted collection on 4/13/05 at 4:25pm - actual location under barge, tried north and south of barge, no material except rocks. Also tried opposite bank of River and also no material present except rocks.
HRFRSED005A	696518.905	609764.936	10.9	4/13/2005	4:12:00 PM	Middle of channel, west of PSEG property	47.1	South, 5-10mph	50	None	Clear sky	Small chop, water level decreasing	Ponar dredge	Retained for Processing	Enough volume was obtained for grain size analysis, not TOC, many attempts made, no material present.
HRFRSED006A	697456.036	609582.508	5.4	4/13/2005	3:27:00 PM	West bank of River, east of sheetpile wall, at transect 11	12.2	South, 5-10mph	50	None	Clear sky	Small chop, water level decreasing	Ponar dredge	Retained for Processing	
HRFRSED007A	698267.636	609268.129	1.5	4/13/2005	3:05:00 PM	Middle of river at transect 13, located in middle of bend in river	34.2	South, 5-10mph	50	None	Clear sky	Small chop, water level decreasing	Ponar dredge	Retained for Processing	
HRFRSED008A	699077.646	608292.301	2.7	4/13/2005	2:39:00 PM	North bank of River at Transect 15	20.1	South, 5-10mph	50	None	Clear sky	Small chop, water level decreasing	Ponar dredge	Retained for Processing	
HRFRSED009A	698162.628	607307.438	4.3	4/13/2005	2:22:00 PM	Middle of River, just west of channel marker 15	24.1	South, 5-10mph	50	None	Clear sky	Small chop, water level decreasing	Ponar dredge	Retained for Processing	
HRFRSED010A	697476.351	606313.015	1.2	4/13/2005	10:34:00 AM	Sub-tidal flats, south bank of River, north of sheetpile wall	6.0	South, 5-10mph	50	None	Clear sky	Small chop, water level rising	Ponar dredge	Retained for Processing	
HRFRSED011A	698086.644	605297.607	1.6	4/13/2005	1:54:00 PM	Middle of River, south of Amtrak portal	38.6	South, 5-10mph	50	None	Clear sky	Small chop, water level decreasing	Ponar dredge	Retained for Processing	
HRFRSED012A	698773.284	604747.163	4	4/13/2005	8:30:00 AM	Sub-tidal flat, on east bank of River	14.1	South, 5-10mph	50	None	Clear sky	Small chop	Ponar dredge	Retained for Processing	
HRFRSED013A	699913.016	604253.118	2.9	4/14/2005	8:08:00 AM	North of Amtrak portal bridge pier, middle of River	25.7	South 5-7mph	45-50	None	Clear sky	Calm, water level rising	Ponar dredge	Retained for Processing	
HRFRSED014A	700715.967	604142.433	1.8	4/14/2005	7:41:00 AM	Between Amtrak portal and Route 7 bridge, east bank of River	22.1	South 5-7mph	45-50	None	Clear sky	Calm, water level rising	Ponar dredge	Retained for Processing	
HRFRSED015A	701671.451	604912.077	1.8	4/14/2005	7:17:00 AM	Middle of River, north of Amtrak swing bridge, Laurel Hill	34.2	South 5-7mph	45-50	None	Clear sky	Calm, water level rising	Ponar dredge	Retained for Processing	
HRFRSED016A	697958.68	609207.92	4.5	4/13/2005	3:18:00 PM	Middle of bend in River at Transect 13	32.6	South, 5-10mph	50	None	Clear sky	Small chop, water level decreasing	Ponar dredge	Retained for Processing	
HRFRSED017A	697632.164	607895.28	4.8	4/13/2005	11:25:00 AM	South bank of River, south of navigation channel, north of sheetpile wall	11.8	South, 5-10mph	50	None	Clear sky	Small chop, water level rising	Ponar dredge	Retained for Processing	
HRFRSED018A	698854.837	606663.067	4.7	4/13/2005	10:57:00 AM	North bank of River, south slope of small hill	3.4	South, 5-10mph	50	None	Clear sky	Small chop, water level rising	Ponar dredge	Retained for Processing	
HRFRSED019A	697598.461	605144.111	4.7	4/13/2005	9:33:00 AM	Sub-tidal flat, west bank of River, close to sheetpile wall	3.1	South, 5-10mph	50	None	Clear sky	Small chop, water level rising	Ponar dredge	Retained for Processing	
HRFRSED020A	698510.132	604128.29	4.3	4/13/2005	9:10:00 AM	Sub-tidal flat, west bank of River, by chlorine chemical site	1.9	South, 5-10mph	50	None	Clear sky	Small chop, water level rising	Ponar dredge	Retained for Processing	
HRFRSED021A	698595.127	605820.43	N/A	4/14/2005	8:38:00 AM	North bank of River, south slope of small hill	1.9	South 5-7mph	45-50	None	Clear sky	Calm, water level rising	Ponar dredge	Retained for Processing	Added sample location after sample HRFRSED004A could not be collected.

Notes:
ft = feet
mph = miles per hour
N/A = Not Applicable
PSEG = Public Service Enterprise Group Former West End Manufactured Gas Plant Site
TOC = Total Organic Carbon

Appendix G

Sediment Grab Sampling Photographs

BLASLAND, BOUCK & LEE, INC.
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HRFRSED001A-01
13 12:48 PM

HRFRSED002A-01
13 1:05 PM

HRFRSED003A-1
13 1:34 PM

HRFRSED006A-01
13 3:38 PM

HRFRSED007A-1
13 3:13 PM

HRFRSED008A-1
13 2:50 PM

HRFRSED009A-1
13 2:30 PM

HRFRSED010A-01
13 10:47 AM

HRFRSED011A-1
13 2:17 PM

HRFRSED012A-01
13 8:46 AM

HRFRSED013A-1
14 8:17 AM

HRFRSED014A-1
14 8:00 AM

HRFRSED015A-1
14 7:36 AM

HRFRSED016A-1
13 3:26 PM

HRFRSED019A-01
13 9:46 AM

HRFRSED020A-01
13 9:23 AM

HRFRSED021A-1
14 8:43 AM

Appendix H

Grain Size and TOC Laboratory Data Packages

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Data Package

Type I Data Package

Analytical Data Report Package
for
Blasland, Bouck & Lee, Inc.

Hackensack River, NJ
Sediment Samples
Collected on 04/13/05-04/14/05
Sample No. 4504547-4504568

SDG# HRN01

PA Cert. # 36-037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521

Prepared by Carolyn A Schwarz

Quality Assurance Review [signature]

Date 5/9/05

Lancaster Laboratories
Where quality is a science.

Lancaster Laboratories, Inc. * 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 * 717-656-2300 Fax: 717-656-2681

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Sample Reference List for SDG Number HRN01 with a Data Package Type of I

03074 - Blasland, Bouck & Lee, Inc.
Hackensack River, NJ

Lab Sample Number	Lab Sample Code	Client Sample Description
4504547	12A01	HRFRSED0012A-01 Grab Sediment Sample
4504548	20A01	HRFRSED0020A-01 Grab Sediment Sample
4504549	19A01	HRFRSED019A-01 Grab Sediment Sample
4504550	10A01	HRFRSED010A-01 Grab Sediment Sample
4504551	18A01	HRFRSED018A-01 Grab Sediment Sample
4504552	17A01	HRFRSED017A-01 Grab Sediment Sample
4504553	-1A01	HRFRSED001A-01 Grab Sediment Sample
4504554	-2A01	HRFRSED002A-01 Unspiked Grab Sediment Sample
4504555	-2A01	HRFRSED002A-01 Matrix Spike Grab Sediment Sample
4504556	-2A01	HRFRSED002A-01 Duplicate Grab Sediment Sample
4504557	03A01	HRFRSED003A-01 Grab Sediment Sample
4504558	11-01	HRFRSED011A-01 Grab Sediment Sample
4504559	09A01	HRFRSED009A-01 Grab Sediment Sample
4504560	08A01	HRFRSED008A-01 Grab Sediment Sample
4504561	07A01	HRFRSED007A-01 Grab Sediment Sample
4504562	16A01	HRFRSED016A-01 Grab Sediment Sample
4504563	-6A01	HRFRSED006A-01 Grab Sediment Sample
4504564	-5A01	HRFRSED005A-01 Grab Sediment Sample
4504565	1-DP1	HRFRSEDDUP1-1 Grab Sediment Sample
4504566	1-DP2	HRFRSEDDUP2-1 Grab Sediment Sample
4504567	15A01	HRFRSED015A-01 Grab Sediment Sample
4504568	14A01	HRFRSED014A-01 Grab Sediment Sample

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504547

HRFRSED0012A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 08:30 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

12A01 SDG#: HRN01-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	46.2	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	22,000.	2,300.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.5	0.50	% Passing	1
07139	3.35 mm	n.a.	98.0	0.50	% Passing	1
07140	2.36 mm	n.a.	92.9	0.50	% Passing	1
07141	1.18 mm	n.a.	67.7	0.50	% Passing	1
07142	0.6 mm	n.a.	50.0	0.50	% Passing	1
07143	0.3 mm	n.a.	37.9	0.50	% Passing	1
07144	0.15 mm	n.a.	21.0	0.50	% Passing	1
07145	0.075 mm	n.a.	5.1	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 15:12	Kyle W Eckenroad	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504548

HRFRSED0020A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 09:10 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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20A01 SDG#: HRN01-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	57.2	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	44,000.	2,700.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	83.9	0.50	% Passing	1
07139	3.35 mm	n.a.	76.9	0.50	% Passing	1
07140	2.36 mm	n.a.	65.7	0.50	% Passing	1
07141	1.18 mm	n.a.	47.8	0.50	% Passing	1
07142	0.6 mm	n.a.	32.5	0.50	% Passing	1
07143	0.3 mm	n.a.	17.0	0.50	% Passing	1
07144	0.15 mm	n.a.	4.0	0.50	% Passing	1
07145	0.075 mm	n.a.	1.5	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 15:20	Kyle W Eckenroad	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504549

HRFRSED019A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 09:33 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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19A01 SDG#: HRN01-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	54.4	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	28,000.	2,500.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.8	0.50	% Passing	1
07139	3.35 mm	n.a.	98.7	0.50	% Passing	1
07140	2.36 mm	n.a.	95.7	0.50	% Passing	1
07141	1.18 mm	n.a.	68.2	0.50	% Passing	1
07142	0.6 mm	n.a.	48.5	0.50	% Passing	1
07143	0.3 mm	n.a.	29.3	0.50	% Passing	1
07144	0.15 mm	n.a.	13.7	0.50	% Passing	1
07145	0.075 mm	n.a.	4.8	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 15:28	Kyle W Eckenroad	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504550

HRFRSED010A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 10:34 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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10A01 SDG#: HRN01-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	38.4	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	15,000.	1,200.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	80.7	0.50	% Passing	1
07139	3.35 mm	n.a.	70.6	0.50	% Passing	1
07140	2.36 mm	n.a.	61.0	0.50	% Passing	1
07141	1.18 mm	n.a.	46.2	0.50	% Passing	1
07142	0.6 mm	n.a.	28.7	0.50	% Passing	1
07143	0.3 mm	n.a.	13.2	0.50	% Passing	1
07144	0.15 mm	n.a.	4.7	0.50	% Passing	1
07145	0.075 mm	n.a.	2.0	0.50	% Passing	1

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 19:14	Kyle W Eckenroad	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504551

HRFRSED018A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 10:57 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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18A01 SDG#: HRN01-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	53.8	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	28,000.	2,600.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.8	0.50	% Passing	1
07139	3.35 mm	n.a.	99.2	0.50	% Passing	1
07140	2.36 mm	n.a.	97.0	0.50	% Passing	1
07141	1.18 mm	n.a.	72.6	0.50	% Passing	1
07142	0.6 mm	n.a.	54.4	0.50	% Passing	1
07143	0.3 mm	n.a.	41.2	0.50	% Passing	1
07144	0.15 mm	n.a.	26.2	0.50	% Passing	1
07145	0.075 mm	n.a.	12.3	0.50	% Passing	1

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 15:44	Kyle W Eckenroad	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504552

HRFRSED017A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 11:25 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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17A01 SDG#: HRN01-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	27.8		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	6,300.		600.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	100.		0.50	% Passing	1
07138	4.75 mm	n.a.	99.9		0.50	% Passing	1
07139	3.35 mm	n.a.	99.4		0.50	% Passing	1
07140	2.36 mm	n.a.	94.0		0.50	% Passing	1
07141	1.18 mm	n.a.	65.1		0.50	% Passing	1
07142	0.6 mm	n.a.	42.4		0.50	% Passing	1
07143	0.3 mm	n.a.	27.9		0.50	% Passing	1
07144	0.15 mm	n.a.	9.5		0.50	% Passing	1
07145	0.075 mm	n.a.	0.90	J	0.50	% Passing	1

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 15:40	Kyle W Eckenroad	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504553

HRFRSED001A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 12:39 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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-1A01 SDG#: HRN01-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	27.6		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	6,100.		680.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	97.2		0.50	% Passing	1
07138	4.75 mm	n.a.	80.3		0.50	% Passing	1
07139	3.35 mm	n.a.	75.8		0.50	% Passing	1
07140	2.36 mm	n.a.	70.2		0.50	% Passing	1
07141	1.18 mm	n.a.	61.4		0.50	% Passing	1
07142	0.6 mm	n.a.	51.3		0.50	% Passing	1
07143	0.3 mm	n.a.	30.0		0.50	% Passing	1
07144	0.15 mm	n.a.	4.5		0.50	% Passing	1
07145	0.075 mm	n.a.	0.90	J	0.50	% Passing	1

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 15:59	Kyle W Eckenroad	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504554

HRFRSED002A-01 Unspiked Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 12:57 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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-2A01 SDG#: HRN01-08BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	36.8	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	16,000.	1,700.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	88.5	0.50	% Passing	1
07139	3.35 mm	n.a.	81.5	0.50	% Passing	1
07140	2.36 mm	n.a.	74.8	0.50	% Passing	1
07141	1.18 mm	n.a.	64.4	0.50	% Passing	1
07142	0.6 mm	n.a.	55.3	0.50	% Passing	1
07143	0.3 mm	n.a.	44.5	0.50	% Passing	1
07144	0.15 mm	n.a.	26.1	0.50	% Passing	1
07145	0.075 mm	n.a.	6.6	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 16:07	Kyle W Eckenroad	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504557

HRFRSED003A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 13:27 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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03A01 SDG#: HRN01-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	17.6		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	15,000.		250.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	43.0		0.50	% Passing	1
07138	4.75 mm	n.a.	10.3		0.50	% Passing	1
07139	3.35 mm	n.a.	8.8		0.50	% Passing	1
07140	2.36 mm	n.a.	7.4		0.50	% Passing	1
07141	1.18 mm	n.a.	5.4		0.50	% Passing	1
07142	0.6 mm	n.a.	3.6		0.50	% Passing	1
07143	0.3 mm	n.a.	1.4		0.50	% Passing	1
07144	0.15 mm	n.a.	0.50	J	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.		0.50	% Passing	1

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/21/2005 14:35	Kyle W Eckenroad	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504558

HRFRSED011A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 13:54 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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11-01 SDG#: HRN01-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	37.7	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	2,300.	270.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	93.2	0.50	% Passing	1
07139	3.35 mm	n.a.	84.9	0.50	% Passing	1
07140	2.36 mm	n.a.	73.5	0.50	% Passing	1
07141	1.18 mm	n.a.	52.0	0.50	% Passing	1
07142	0.6 mm	n.a.	32.2	0.50	% Passing	1
07143	0.3 mm	n.a.	13.6	0.50	% Passing	1
07144	0.15 mm	n.a.	2.9	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 15:48	Kyle W Eckenroad	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504559

HRFRSED009A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 14:22 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

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09A01 SDG#: HRN01-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	36.3	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	12,000.	1,200.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	90.0	0.50	% Passing	1
07139	3.35 mm	n.a.	82.4	0.50	% Passing	1
07140	2.36 mm	n.a.	76.4	0.50	% Passing	1
07141	1.18 mm	n.a.	68.3	0.50	% Passing	1
07142	0.6 mm	n.a.	56.5	0.50	% Passing	1
07143	0.3 mm	n.a.	33.1	0.50	% Passing	1
07144	0.15 mm	n.a.	9.3	0.50	% Passing	1
07145	0.075 mm	n.a.	2.4	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 20:06	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504560

HRFRSED008A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 14:39 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

08A01 SDG#: HRN01-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	48.9	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	18,000.	2,100.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.9	0.50	% Passing	1
07139	3.35 mm	n.a.	99.0	0.50	% Passing	1
07140	2.36 mm	n.a.	95.5	0.50	% Passing	1
07141	1.18 mm	n.a.	64.9	0.50	% Passing	1
07142	0.6 mm	n.a.	40.1	0.50	% Passing	1
07143	0.3 mm	n.a.	23.6	0.50	% Passing	1
07144	0.15 mm	n.a.	11.9	0.50	% Passing	1
07145	0.075 mm	n.a.	3.5	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 19:58	Kyle W Eckenroad	1

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504561

HRFRSED007A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 15:05 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

07A01 SDG#: HRN01-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	24.8		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	75,000.		930.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	88.3		0.50	% Passing	1
07138	4.75 mm	n.a.	32.2		0.50	% Passing	1
07139	3.35 mm	n.a.	24.5		0.50	% Passing	1
07140	2.36 mm	n.a.	19.4		0.50	% Passing	1
07141	1.18 mm	n.a.	14.9		0.50	% Passing	1
07142	0.6 mm	n.a.	10.6		0.50	% Passing	1
07143	0.3 mm	n.a.	3.3		0.50	% Passing	1
07144	0.15 mm	n.a.	1.2		0.50	% Passing	1
07145	0.075 mm	n.a.	0.50	J	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 16:03	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504562

HRFRSED016A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 15:18 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

16A01 SDG#: HRN01-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	27.5	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	13,000.	890.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	95.2	0.50	% Passing	1
07139	3.35 mm	n.a.	93.7	0.50	% Passing	1
07140	2.36 mm	n.a.	92.1	0.50	% Passing	1
07141	1.18 mm	n.a.	82.7	0.50	% Passing	1
07142	0.6 mm	n.a.	31.4	0.50	% Passing	1
07143	0.3 mm	n.a.	6.5	0.50	% Passing	1
07144	0.15 mm	n.a.	N.D.	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 16:16	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504563

HRFRSED006A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 15:27 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

-6A01 SDG#: HRN01-15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	49.7	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	33,000.	2,600.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.9	0.50	% Passing	1
07139	3.35 mm	n.a.	99.7	0.50	% Passing	1
07140	2.36 mm	n.a.	98.4	0.50	% Passing	1
07141	1.18 mm	n.a.	93.4	0.50	% Passing	1
07142	0.6 mm	n.a.	59.5	0.50	% Passing	1
07143	0.3 mm	n.a.	38.6	0.50	% Passing	1
07144	0.15 mm	n.a.	10.7	0.50	% Passing	1
07145	0.075 mm	n.a.	1.7	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 13:55	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504564

HRFRSED005A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 16:00 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

-5A01 SDG#: HRN01-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	87.0	0.50	% Passing	1
07137	19 mm	n.a.	71.1	0.50	% Passing	1
07138	4.75 mm	n.a.	47.0	0.50	% Passing	1
07139	3.35 mm	n.a.	41.8	0.50	% Passing	1
07140	2.36 mm	n.a.	34.6	0.50	% Passing	1
07141	1.18 mm	n.a.	24.4	0.50	% Passing	1
07142	0.6 mm	n.a.	15.1	0.50	% Passing	1
07143	0.3 mm	n.a.	5.8	0.50	% Passing	1
07144	0.15 mm	n.a.	2.0	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07104	Grain Size to 75 um	ASTM D-422	1	05/02/2005 12:00	Catherine L Cammauf	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504565

HRFRSEDDUP1-1 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

1-DP1 SDG#: HRN01-17FD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	36.2	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	15,000.	2,100.	mg/kg	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 14:03	Kyle W Eckenroad	1

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PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504566

HRFRSEDDUP2-1 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

1-DP2 SDG#: HRN01-18FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.6	0.50	% Passing	1
07139	3.35 mm	n.a.	98.3	0.50	% Passing	1
07140	2.36 mm	n.a.	95.2	0.50	% Passing	1
07141	1.18 mm	n.a.	67.2	0.50	% Passing	1
07142	0.6 mm	n.a.	42.9	0.50	% Passing	1
07143	0.3 mm	n.a.	23.6	0.50	% Passing	1
07144	0.15 mm	n.a.	9.4	0.50	% Passing	1
07145	0.075 mm	n.a.	3.0	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07104	Grain Size to 75 um	ASTM D-422	1	04/28/2005 12:00	Catherine L Cammauf	1

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504567

HRFRSED015A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/14/2005 07:17 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

15A01 SDG#: HRN01-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	16.1		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	5,500.		110.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	58.1		0.50	% Passing	1
07138	4.75 mm	n.a.	13.7		0.50	% Passing	1
07139	3.35 mm	n.a.	10.5		0.50	% Passing	1
07140	2.36 mm	n.a.	8.5		0.50	% Passing	1
07141	1.18 mm	n.a.	5.5		0.50	% Passing	1
07142	0.6 mm	n.a.	2.8		0.50	% Passing	1
07143	0.3 mm	n.a.	1.3		0.50	% Passing	1
07144	0.15 mm	n.a.	0.50	J	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.		0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 14:11	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504568

HRFRSED014A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/14/2005 07:41 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

14A01 SDG#: HRN01-20*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	31.9	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	4,100.	1,000.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	97.2	0.50	% Passing	1
07138	4.75 mm	n.a.	88.6	0.50	% Passing	1
07139	3.35 mm	n.a.	79.3	0.50	% Passing	1
07140	2.36 mm	n.a.	72.3	0.50	% Passing	1
07141	1.18 mm	n.a.	49.8	0.50	% Passing	1
07142	0.6 mm	n.a.	27.5	0.50	% Passing	1
07143	0.3 mm	n.a.	10.0	0.50	% Passing	1
07144	0.15 mm	n.a.	2.1	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 20:23	Kyle W Eckenroad	1

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Lancaster Laboratories, Inc.
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Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 3074 Group# 939680 Sample # 4504547-68

COC # 0080178

temp 2.1-3.5°C

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: Blasland Bouck & Lee Acct. #:
Project Name/#: Hackensack River PWSID #:
Project Manager: P.O.#:
Sampler: Jason Gutkowski Quote #:
Name of state where samples were collected: NJ

(2) (3) (4) (5)

For Lab Use Only
FSC:
SCR #:

(6)

Sample	Date	Time								TOC	Grain Size	TOC MS/MSD							Remarks
HRFRSED0012A-01	4-13-05	0830	X				X	2	X	X									
HRFRSED0020A-01	↓	0910	↓					2	X	X									
HRFRSED0019A-01		0933						2	X	X									
HRFRSED010A-01		1034						2	X	X									
HRFRSED018A-01		1057						2	X	X									
HRFRSED017A-01		1125						2	X	X									
HRFRSED001A-01		1239						2	X	X									
HRFRSED002A-01		1257						2	X	X									
HRFRSED003A-01		1327						3	X	X	X								
HRFRSED011A-01		1354						2	X	X									

(7) Turnaround Time Requested (TAT) (please circle): Normal (circled) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) Data Package Options (please circle if required)

QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes (circled) No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
Jason Gutkowski	4/14/05	1600			
			Jess Zook	4/15/05	0915

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102 Rev. 10/27/02

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 3074 Group# 939680 Sample # 4504547-68

COC # 0080180

temp 2.1-3.5°C

(1) Please print. Instructions on reverse side correspond with circled numbers.

Client: Blasland Bouck & Lee   Acct. #:
Project Name/#: Hackensack River   PWSID #:
Project Manager: P.O.#:
Sampler: Jason Gutkowski   Quote #:
Name of state where samples were collected: NJ

For Lab Use Only
FSC:
SCR #: 1202250

(2) Sample Identification	Date Collected	Time Collected	(3)	(4)	Total # of Containers	(5) TOC	Grain Size	(6) Remarks
HRFRSED009A-01	4-13-05	1422	X	X	2	X	X	
HRFRSED008A-01	↓	1439	↓	↓	2	X	X	
HRFRSED007A-01	↓	1505	↓	↓	2	X	X	
HRFRSED016A-01	↓	1518	↓	↓	2	X	X	
HRFRSED006A-01	↓	1527	↓	↓	2	X	X	
HRFRSED005A-01	↓	1600	↓	↓	2	X	X	
HRFRSEDDUP1-1	↓	—	↓	↓	1		X	
HRFRSEDDUP2-1	↓	—	↓	↓	1	X		
HRFRSED015A-01	4-14-05	0717	↓	↓	1		X	
HRFRSED014A-01	↓	0741	↓	↓	2	X	X	

(7) Turnaround Time Requested (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) Data Package Options (please circle if required)
QC Summary
Type I (Tier I)
Type II (Tier II)
Type III (NJ Red. Del.)
Type IV (CLP)
Type VI (Raw Data)
GLP
Other

SDG Complete? (Yes) No
Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	4/14/05	1600	[signature]	4/13/05	0800
[signature]	4/14/05	1600			
			Jess Zook	4/15/05	0905

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Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102 Rev. 10/27/02

Lancaster Laboratories

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METHODOLOGY SUMMARY/REFERENCE

0383 TOC by Lloyd Kahn Method

Total organic carbon is determined by acidifying a sample aliquot and heating it to remove any inorganic carbon. The sample is then heated to 900°C for combustion of the remaining organic carbon. The resulting carbon dioxide from the organic carbon is detected by a nondispersive infrared detector that has been calibrated to directly display the mass of carbon dioxide detected. The mass is proportional to the mass of total organic carbon in the sample.

Reference: Lloyd Kahn

****

7104 Particle Size Distribution of Soils and Solids

A thoroughly dried soil is ground using a rubber pestle to break the aggregations. The ground soil is then sieved to determine percentage of particles passing sizes in the range 7 - 2.36 mm. Particles finer than 2.36 mm are soaked in a dispersing agent for 16 hours with particle sizes smaller than 0.075 mm determined by a sedimentation process using a hydrometer. The soil from the hydrometer test is dried and then sieved to determine percentage of particles passing sizes in the range 1.18 - 0.075 mm.

Reference: ASTM D422, Standard Test Method for Particle-Size Analysis of Soil

****

0111 Moisture (solid)

A well mixed sample is placed in a tared container and dried to constant weight in an oven at 103-105C. The decrease in weight is the total moisture.

Reference: Methods for Chemical Analysis of Water and Wastes USEPA 600/4-79-020, Method 160.3 (modified)

0884

0118 Moisture (solid)

This value reflects the background moisture value. It is used to calculate dry weight reports for matrix spike and matrix spike duplicate samples.

Reference: See background sample moisture method reference

****

0121 Moisture Duplicate (solid)

This analysis is required to check the precision of the moisture analysis. The value is not used in report calculations.

Reference: See background sample moisture method reference

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Instrumental Analysis Data

Case Narrative
Conformance/Nonconformance
Summary

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Where quality is a science.

CLIENT: Blasland, Bouck & Lee, Inc.
SDG: HRN01

LANCASTER LABORATORIES

INSTRUMENTAL WET CHEMISTRY

SAMPLE NUMBERS:

Sample #	Sample Code	Comments
4504547	12A01	
4504548	20A01	
4504549	19A01	
4504550	10A01	
4504551	18A01	
4504552	17A01	
4504553	-1A01	
4504554	-2A01	Background
4504555	-2A01	Spike
4504556	-2A01	Duplicate
4504557	03A01	
4504558	11-01	
4504559	09A01	
4504560	08A01	
4504561	07A01	
4504562	16A01	
4504563	-6A01	
4504565	1-DP1	
4504567	15A01	
4504568	14A01	

ANALYSIS:
No problems were encountered during analysis.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:
QC was within specification.

DATA INTERPRETATION:
No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Sandra J. Miller Date: 4-28-05
Sandra J. Miller
Specialist

0818

Lancaster Laboratories

Quality Control Summary

Client Name: Blasland, Bouck & Lee, Inc.
Reported: 05/04/05 at 02:40 PM

Group Number: 939680

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 05108820008A	Sample number(s): 4504547-4504558							
Moisture				100		99-101		
Moisture				100		99-101		
Moisture Duplicate				100		99-101		
Batch number: 05108820008B	Sample number(s): 4504559-4504563,4504565,4504567-4504568							
Moisture				100		99-101		
Batch number: 05109062131A	Sample number(s): 4504547-4504556							
TOC by Lloyd Kahn	N.D.	60.	mg/kg	80		56-144		
Batch number: 05109062131B	Sample number(s): 4504557-4504563,4504565,4504567-4504568							
TOC by Lloyd Kahn	N.D.	60.	mg/kg	80		56-144		

Sample Matrix Quality Control

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 05108820008A	Sample number(s): 4504547-4504558								
Moisture						36.8	36.3	1	15
Moisture						36.8	36.3	1	15
Moisture Duplicate						36.8	36.3	1	15
Batch number: 05108820008B	Sample number(s): 4504559-4504563,4504565,4504567-4504568								
Moisture						48.9	48.6	1	15
Batch number: 05109062131A	Sample number(s): 4504547-4504556								
TOC by Lloyd Kahn	87		71-136			10,000.	6,400.	46* (1)	14
Batch number: 05109062131B	Sample number(s): 4504557-4504563,4504565,4504567-4504568								
TOC by Lloyd Kahn	95		71-136			7,500.	5,900.	24* (1)	14

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

QC Summary

Lancaster Laboratories

Client Name: Blasland, Bouck & Lee, Inc.
SDG: HRN01

Analyte	Batch Number	Sample Number
TOC	05109062131A	4504547
Combustion		4504548
		4504549
		4504550
		4504551
		4504552
		4504553
		4504554 U
		4504555 R
		4504556 D
		LCSS
		PBS
	05109062131B	4504557
		4504558
		4504559 U,R,D
		4504560
		4504561
		4504562
		4504563
		4504565
		4504567
		4504568

Lancaster Laboratories

Quality Control Summary
Method Blank
Instrumental Water Quality
SDG: HRN01
Matrix: SOIL

Analyte	Analysis Date	Method	Batch Number	Blank Results	Units	MDL	LOQ
TOC Combustion	4/19/05	TOC	05109062131	ND	mg/kg	60	170

Comments: The blank is acceptable when the result is less than the limit of quantitation.

ABBREVIATION KEY

IC = Ion Chromatography	
TOC = Total Organic Carbon	ND = Not Detected
TOX = Total Organic Halogen	J = Estimated Value < LOQ
TKN = Total Kjeldahl Nitrogen	MDL = Method Detection Limit
AK = Alpkem	LOQ = Limit of Quantitation
DOC = Dissolved Organic Carbon	NA = Not Applicable

Lancaster Laboratories

Quality Control Summary
Matrix Spike (MS)
Matrix Spike Duplicate (MSD)
SDG: HRN01
Matrix: SOIL

Sample Number	Sample Code	Analyte	Analysis Date	ME	Batch #	Sample Result	MS Spike Added	MSD Spike Added	MS Result	MSD Result	Units	MS Rec (%)	MSD Rec (%)	Acceptance Window (%)	RPD (%)	% RPD Limits
4504555	-2A01	TOC Combustion	4/19/05	TOC	05109062131A	10197	211260	NA	193873	NA	mg/kg	87	NA	71 - 136	NA	NA
4504559	09A01	TOC Combustion	4/21/05	TOC	05109062131B	7546	300000	NA	291500	NA	mg/kg	95	NA	71 - 136	NA	NA

Comments:

If the background and/or matrix spike/matrix spike duplicate result is less than five times the limit of quantitation, the RPD is not considered applicable and is program deleted. recovery is program deleted.

ABBREVIATION KEY

IC = Ion Chromatography	RA = Rapid Analyzer
TOC = Total Organic Carbon	ND = Not Detected
TOX = Total Organic Halogen	ME = Method
TKN = Total Kjeldahl Nitrogen	LOQ = Limit of Quantitation
AK = Alpkem	* = Out of Specification
DOC = Dissolved Organic Carbon	NA = Not Applicable
R = Spike	M = Spike Duplicate
J = Estimated Value < LOQ	

Lancaster Laboratories

Quality Control Summary
Duplicate Sample Analysis
Instrumental Water Quality
SDG: HRN01
Matrix: SOIL

Sample Number	Sample Code	Analyte	Analysis Date	ME	Batch #	Sample Result	Duplicate Result	Units	RPD (%)	Control Limits %
4504556	-2A01	TOC Combustion	4/20/05	TOC	05109062131A	10197	6385	mg/kg	NA 4.92%	NA
4504559	09A01	TOC Combustion	4/20/05	TOC	05109062131B	7546	5947	mg/kg	NA 23.7	NA

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

If the background and/or the duplicate result is less than five times the limit of quantitation, the RPD is not considered applicable and is program deleted.

ABBREVIATION KEY	
IC = Ion Chromatography	RA = Rapid Analyzer
TOC = Total Organic Carbon	ND = Not Detected
TOX = Total Organic Halogen	ME = Method
TKN = Total Kjeldahl Nitrogen	LOQ = Limit of Quantitation
AK = Alpkem	* = Out of Specification
DOC = Dissolved Organic Carbon	NA = Not Applicable
J = Estimated Value < LOQ	D = Duplicate

Lancaster Laboratories

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate (LCSD)
Instrumental Water Quality
SDG: HRN01
Matrix: SOIL

Batch Numbers	Analyte	Analysis Date	Method	TRUE LCS/LCSD Value	LCS Results	LCSD Results	Units	Acceptance Range	% RPD Results	% RPD Acceptance </=
05109062131	TOC Combustion	4/19/05	TOC	5370	4308	NA	mg/kg	3030 - 7710	NA	NA

ABBREVIATION KEY

IC = Ion Chromatography	
TOC = Total Organic Carbon	ND = Not Detected
TOX = Total Organic Halogen	ME = Method
AK = Alpkem	* = Out of Specification
DOC = Dissolved Organic Carbon	NA = Not Applicable
TKN = Total Kjeldahl Nitrogen	RA = Rapid Analyzer

Lancaster Laboratories

Quality Control Summary
Initial Calibration & Linearity Check
Instrumental Analysis
Total Organic Carbon Combustion
Instrument Identification: 8610
Calibration Date: 4/13/05
MATRIX: SOIL
SDG: HRN01

Correlation Coefficient: 0.9959

Batch Number	STD. 0.09 mg C	STD. 0.45 mg C	STD. 1.8 mg C	STD. 6.00 mg C
05109062131A 05109062131B	357	1338	4306	12694

UNITS=
CTS

Continuing Calibration Verification	TRUE Value	Result (mgC)	% Recovery
CCV	3.0	3.142	105
CCV	4.5	4.743	105
CCV	3.0	3.142	105
CCV	3.0	3.069	102
CCV	1.5	1.637	109
CCV	3.0	3.027	101
CCV	4.5	4.520	100
CCV	3.0	3.000	100

Continuing Calibration Dates: 4/19/05, 4/20/05

	True Value (mg C)	Acceptance Range
CCV	Varies	+/- 10%

* = Out of Specifications

Lancaster Laboratories

Quality Control Summary
Initial Calibration & Linearity Check
Instrumental Analysis
Total Organic Carbon Combustion
Instrument Identification: 8610
Calibration Date: 4/21/05
MATRIX: SOIL
SDG: HRN01

Correlation Coefficient: 0.9966

Batch Number	STD. 0.09 mg C	STD. 0.45 mg C	STD. 1.8 mg C	STD. 6.00 mg C
05109062131B	374	1236	4442	12722

UNITS=
CTS

Continuing Calibration Verification	TRUE Value	Result (mgC)	% Recovery
CCV	4.5	4.695	104
CCV	3.0	3.024	101

Continuing Calibration Date: 4/21/05

	True Value (mg C)	Acceptance Range
CCV	Varies	+/- 10%

* = Out of Specifications

Lancaster Laboratories

Dept.27 MDL/LOQ Values

Date Printed: 11/03/04

Analysis Number	Analysis Name	Method	True MDL	True LOQ	Units
0217	Total Kjeldahl Nitrogen	AK	0.5	1	mg/l
0219	Nitrite Nitrogen	AK	0.015	0.05	mg/l
0220/7882	Nitrate Nitrogen	AK	0.04	0.1	mg/l
0224	Chloride	IC	0.3	0.4	mg/l
0227/0345*	Total Phosphorus	AK	.08	.10	mg/l
0228	Sulfate	IC	0.3	1	mg/l
0237	Total Cyanide, EPA	AK	.005	.010	mg/l
0241	Free Cyanide	AK	0.004	0.005	mg/l
0273/0354	TOC (Water)	TOC	0.5	2	mg/l
0332/1506	Nitrite-Nitrogen	IC	0.08	0.1	mg/l
0368	Nitrate-Nitrogen	IC	0.08	0.1	mg/l
0371	Nitrocellulose, SW	AK	60	180	mg/kg
0434	Phenol (Water), EPA	AK	0.012	0.04	mg/l
0574/0555	TOX (Water)	TOX	7	20	ug/l
1123	Reactive Cyanide	AK	100	100	mg/kg
1503	TOX (Solid)	TOX	90	250	mg/kg
1504	Fluoride	IC	0.08	0.1	mg/l
1505	Bromide	IC	0.4	0.5	mg/l
1511	Total Kjeldahl Nitrogen	AK	100	300	mg/kg
1546	Soluble Phosphorus	AK	0.1	0.2	mg/l
1549	Amenable Cyanide, Waters	AK	.005	.010	mg/l
1550	Total Carbon	TC	0.6	2	mg/l
2079/0383	TOC Combustion	TOC	60	170	mg/kg
2109	Titrimetric Cyanide	NA	0.6	2	mg/l
2111/2118/2121/7	Moisture	RA	1	1	%
2353	CLP Moisture	RA	1	1	%

LEGEND

AK = Alpkem
IC = Ion Chromotagraphy
TOC = Total Organic Carbon
TOX = Total Organic Halogens
TC = Total Carbon
RA = Rapid Analyzer

*Note: The MDL and LOQ for moisture are the same to avoid inconsistencies between reporting types

**Note: To obtain values for Total phosphorus as PO4(#345,5894), multiply above values by 3.07

Reported MDL's are based on calculated MDLs for most compounds. Some reported MDLs are set higher based on our experience with specific compounds.

Lancaster Laboratories

Dept.27 MDL/LOQ Values

Date Printed: 11/03/04

Analysis Number	Analysis Name	Method	True MDL	True LOQ	Units
2393	Phenol (Water), SW-846	AK	0.009	0.03	mg/l
3343	CLP Cyanide (Water)	AK	4	10	ug/l
5892	Hexavalent Chromium (Sol	IC	0.2	1	mg/kg
5893/5894	Total Phosphorus (Solid)	AK	10	20	mg/kg
5895	Total CN (Solid)	AK	0.18	0.5	mg/kg
5898	Amenable Cyanide, Solids	AK	0.18	0.5	mg/kg
5910	CLP Cyanide (Solid)	AK	0.2	0.5	mg/kg
5912	Phenol (Solid)	AK	1.2	3.5	mg/kg
5991	Nitrite-Nitrogen (solid)	AK	0.2	0.6	mg/kg
5992	Nitrate-Nitrogen (solid)	AK	0.6	1.7	mg/kg
6019	Perchlorate	IC	0.7	4.0	ug/l
6467	Hexavalent Chromium (Wat	IC	5	10	ug/l
7332	Fluoride, Solid	IC	0.8	1	mg/kg
7333	Chloride, Solid	IC	3	4	mg/kg
7334	Nitrite, Solid	IC	0.8	1	mg/kg
7335	Bromide, Solid	IC	4	5	mg/kg
7336	Nitrate, Solid	IC	0.8	1.5	mg/kg
7338	Sulfate, Solid	IC	3	10	mg/kg
7547	Dissolved Organic Carbon	TOC	0.6	2	mg/l
8255	Total Cyanide, SW-846	AK	.005	.010	mg/l

LEGEND

AK = Alpkem
IC = Ion Chromotagraphy
TOC = Total Organic Carbon
TOX = Total Organic Halogens
TC = Total Carbon
RA = Rapid Analyzer

*Note: The MDL and LOQ for moisture are the same to avoid inconsistencies between reporting types

**Note: To obtain values for Total phosphorus as PO4(#345,5894), multiply above values by 3.07

Reported MDL's are based on calculated MDLs for most compounds. Some reported MDLs are set higher based on our experience with specific compounds.

Lancaster Laboratories
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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 4/19/05

Instrument #: 8610

R^2: 0.9959

Analyst: [illegible] / KWE7505

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 3 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
71	4501838	0.660	629.3	1049	1.59	270.	1426	05109062132A		
72	PBS	-0.095	0	0.00	1	170	1434	05109062131A	<LOQ IS	
73	LCSS	0.844	195.9	4308	5.10	868.	1441		tv=5370, rec=85%	
74	CCV 4.5	4.743	15, µl	IS			1451		rec=105% IS	
75	CCB	-0.095	0.00				1459		<LOQ	
76	4504547	0.572	48.4	11818	20.7	3512	1512	05109062131A		HRN01-01
77	4548	0.973	51.9	18748	19.3	3276	1520			-02
78	4549	0.673	52.5	12819	19.1	3238	1528			-03
79	4550	6.201	~~902.3~~ 903.1	6866	1.11	188	1536		OR-REPEAT	-04
80	4551	0.661	50.4	13115	19.8	3373	1544			-05
81	4552	0.146	56.7	~~2557~~	17.6	2998	1551		<LOQ-REPEAT	-06
82	4553	0.539	121.8	4425	8.21	1396	1559			-07
83	4554-U	0.570	55.9	10197	17.9	3041	1607			-08
84	4555-R	2.753	14.2	193873	70.4	11972	1617		SA=211260mg/kg % Rec=87% IS	-08

Verified by: [illegible] 609

Date: 4/21/05

1941.02

055460 3

Raw Data

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Raw Data Notebook
Total Organic Carbon Solids Module

Date: 4/13/05

Instrument #: 8610

R^2: 0.9959

Analyst: ~~[illegible]~~ 521 / KWE1505

Sucrose Soln Lot #: 042504

Run #: 0 5 1 0 3 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
1	Blank	-0.101	0				1300			
2	0.09 Std	357 cts	0.3 µl				1308			
3	0.45	1338	1.5				1317			
4	1.80	4306	6.0				1325			
5	6.00	12694.	20.0				1333			
6	CCV 3.0	3.206	10. µl				1344		rec=107% (IS)	
7	CCB	-0.095	0				1351			
8	FBS	-0.095	0	0	1	170	1359	05102150532A	CLOQ (IS)	
9	LCSS	0.939	192.9	4868	5.18	881.	1408		tr=5370. rec=91%	
10	CCV 1.5	1.573	5. µl	(IS)			1420		rec= 105%	
11	CCB	-0.095	0.00				1428			
12	4494753	0.447	42.6	10493	23.5	3991	1437	05102150532A	14596	TGE31-09
13		0.966	53.5 ~~49.8~~	~~22207~~ 18056	18.7 ~~23.0~~	~~3968~~ 3179	1446		$\bar{x}$=~~16374~~ mg/kg	
14		0.890	58.4 ~~54.2~~	~~16421~~ 15244	~~18.5~~ 17.1	~~3137~~ 2907	1454		8/15 4/14/05	

Verified by: 8/15 4/14/05 8/15 4/14/05 8/15

Date: 4/14/05

1941.02

054817 54

Run# 05103A
4/13/05 - 4/14/05
4/14/05

IR Failure: NO OUTPUT
IR Failure: NO OUTPUT

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 12:52:37 2005

#0001 13:00:02 TC SPL#01 0.000 mg 0000000 cts -000.101 mgC 0.00 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:00:28 2005

TOC Combustion

#0001 13:08:21 TC STD#01 000.090 mgC 0000357 cts

CALIBRATION RESULTS:
STD TYPE = TC

STD#1 = 00.090 mgC	1 reps	Avg Area =	357.0 cts	%rsd =	0.00
STD#2 = 00.450 mgC	1 reps	Avg Area =	1263.0 cts	%rsd =	0.00
STD#3 = 01.800 mgC	1 reps	Avg Area =	3914.0 cts	%rsd =	0.00
STD#4 = 06.000 mgC	1 reps	Avg Area =	10929.0 cts	%rsd =	0.00

RF = 537.509 ugC/k-cts
R2 = 0.9920
OFFSET = 236 cts (-0.127 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:08:50 2005

#0001 13:17:00 TC STD#02 000.450 mgC 0001338 cts

CALIBRATION RESULTS:
STD TYPE = TC

STD#1 = 00.090 mgC	1 reps	Avg Area =	357.0 cts	%rsd =	0.00
STD#2 = 00.450 mgC	1 reps	Avg Area =	1338.0 cts	%rsd =	0.00
STD#3 = 01.800 mgC	1 reps	Avg Area =	3914.0 cts	%rsd =	0.00
STD#4 = 06.000 mgC	1 reps	Avg Area =	10929.0 cts	%rsd =	0.00

RF = 536.405 ugC/k-cts
R2 = 0.9892
OFFSET = 247 cts (-0.133 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:17:30 2005

#0001 13:25:14 TC STD#03 001.800 mgC 0004306 cts

CALIBRATION RESULTS:
STD TYPE = TC

STD#1 = 00.090 mgC	1 reps	Avg Area =	357.0 cts	%rsd =	0.00
STD#2 = 00.450 mgC	1 reps	Avg Area =	1338.0 cts	%rsd =	0.00
STD#3 = 01.800 mgC	1 reps	Avg Area =	4306.0 cts	%rsd =	0.00
STD#4 = 06.000 mgC	1 reps	Avg Area =	10929.0 cts	%rsd =	0.00

RF = 523.536 ugC/k-cts
R2 = 0.9822

R2 = 0.9892
OFFSET = 247 cts (-0.133 mgC)

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:17:30 2005

#0001 13:25:14 TC STD#03 001.800 mgC 0004306 cts

CALIBRATION RESULTS:
STD TYPE = TC

STD#1 = 00.090 mgC	1 reps	Avg Area =	357.0 cts	%rsd =	0.00
STD#2 = 00.450 mgC	1 reps	Avg Area =	1338.0 cts	%rsd =	0.00
STD#3 = 01.800 mgC	1 reps	Avg Area =	4306.0 cts	%rsd =	0.00
STD#4 = 06.000 mgC	1 reps	Avg Area =	10929.0 cts	%rsd =	0.00

RF = 523.536 ugC/k-cts
R2 = 0.9822
OFFSET = 249 cts (-0.131 mgC)

TOC Combustion

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:25:43 2005

#0001 13:33:43 TC STD#04 006.000 mgC 0012694 cts

CALIBRATION RESULTS:
STD TYPE = TC

STD#1 = 00.090 mgC	1 reps	Avg Area =	357.0 cts	%rsd =	0.00
STD#2 = 00.450 mgC	1 reps	Avg Area =	1338.0 cts	%rsd =	0.00
STD#3 = 01.800 mgC	1 reps	Avg Area =	4306.0 cts	%rsd =	0.00
STD#4 = 06.000 mgC	1 reps	Avg Area =	12694.0 cts	%rsd =	0.00

RF = 466.516 ugC/k-cts
R2 = 0.9959
OFFSET = 204 cts (-0.095 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:34:12 2005

#0001 13:44:03 TC SPL#01 3.000 mg 0007076 cts 003.206 mgC 106.86 %C
6

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:44:31 2005

#0001 13:51:52 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C
7

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:52:21 2005

#0001 13:59:40 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C
8

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 14:00:08 2005

#0001 [illegible]

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Raw Data Notebook
Total Organic Carbon Solids Module

Date: 4/19/05

Instrument #: 8610

R^2: 0.9959

Analyst: ~~[illegible]~~ KH

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 3 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
57	LCSS	0.759	201.2	3772. ✓	4.97 ~~201.20~~	845.	1237	051090621324	~~AV=8310. rec=70%~~	
58	4501826-U	0.331	208.3	1589. ✓	4.80	814.	1244			
59	-R	3.286	31.6	103987. ✓	31.6	5380.	1253		~~AV=94937. rec=108%~~	
60	-D	0.270	206.1	1310. ✓	4.85	825.	1301		pd	
61	4501830	2.804	611.4	4585. ✓	1.64	278.	1308			
62	CCV 3.0	3.142	10, ml				1316		rec=105%	
63	CCB	-0.095	0				1324			
64	4501831 ✓	0.385	888.9	433.	1.12	191.	1332	051090621324		
65	1832 ✓	1.167	721.9	1617.	1.39	235.	1339			
66	1833 ✓	0.392	414.5	946.	2.41	410.	1347			
67	1834 ✓	1.065	699.7	1522.	1.43	243.	1355			
68	1835 ✓	0.934	77.6	12036.	12.9	2191.	1403			
69	1836 ✓	0.429	689.7	622.	1.45	246.	1410			
70	1837 ✓	0.446	559.2	798.	1.79	304.	1418			

Verified by: [illegible] Date: 4/21/05

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2425 New Holland Pike • Lancaster, PA 17601

Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/19/05

Instrument #: 8610

R^2: 0.9959

Analyst: [illegible]

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 ~~4~~ 3 A

* 3 [illegible] 04/19/05

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
85	DCS	0.039	0.3mL				1626		%Rec = 43%	
86	CCV 3.0	3.142	10.0mL	D			1634		%Rec = 105%	
87	CCB	-0.095	0.00				1645			
1	4504586-D	0.227	58.8	3861	17.0	2891	1817	05109062131A		
2	4557	1.216	294.2	4133	3.4	578	1825	05109062131B		
3	4558	-0.095	54.2	0.00	18.5	3137	1833		BR-REPEAT	
4	4559-U	0.221	46.9	~~4077~~ 4712	~~17.6~~ 21.3	~~2988~~ 3625	1841			
5	-R	0.044	19.9	773	50.3	8543	1848		DID NOT SPIKE BR-REPEAT	
6	-D	0.287	49.6	5786	20.2	3427	1858			
7	4560	0.394	49.1	8024	20.4	3462	1906			
8	4561	14.237	266.0	53523	3.76	639	1915		OR-REPEAT	
9	4562	2.275	442.9		2.26	384	1922			
~~10~~	~~4563~~		~~46.3~~		~~21.6~~	~~3672~~				
~~11~~ 10	CCV 1.5	1.86	6.0mL	OS			1957		%Rec = 124% OS	

Verified by: [illegible] Date: 4/21/05

1941.02

055460 4

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:01:34 2005

#0001 13:08:52 TC SPL#01 611.600 mg 0006216 cts 002.804 mgC 0.46 %C

LANCASTER LABORATORIES

TOC Combustion

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:09:19 2005

#0001 13:16:36 TC SPL#01 3.000 mg 0006940 cts 003.142 mgC 104.74 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:17:02 2005

#0001 13:24:20 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:24:46 2005

#0001 13:32:03 TC SPL#01 888.900 mg 0001030 cts 000.385 mgC 0.04 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:32:29 2005

#0001 13:39:47 TC SPL#01 721.900 mg 0002706 cts 001.167 mgC 0.16 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:40:13 2005

#0001 13:47:32 TC SPL#01 414.500 mg 0001045 cts 000.392 mgC 0.09 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:47:58 2005

#0001 13:55:17 TC SPL#01 699.700 mg 0002487 cts 001.065 mgC 0.15 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:55:43 2005

#0001 14:03:02 TC SPL#01 77.600 mg 0002207 cts 000.934 mgC 1.20 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:03:28 2005

0020

#0001 14:10:47 TC SPL#01 689.700 mg 0001125 cts 000.429 mgC 0.06 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:26:46 2005

#0001 14:34:07 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

LANCASTER LABORATORIES

TOC Combustion

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:34:35 2005

#0001 14:41:55 TC SPL#01 195.900 mg 0002013 cts 000.844 mgC 0.43 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:42:22 2005

#0001 14:51:33 TC SPL#01 4.500 mg 0010371 cts 004.743 mgC 105.40 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:52:00 2005

#0001 14:59:24 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:05:06 2005

#0001 15:12:30 TC SPL#01 48.400 mg 0001431 cts 000.572 mgC 1.18 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:12:59 2005

#0001 15:20:18 TC SPL#01 51.900 mg 0002290 cts 000.973 mgC 1.87 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:20:47 2005

#0001 15:28:06 TC SPL#01 52.500 mg 0001646 cts 000.673 mgC 1.28 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:28:34 2005

#0001 15:36:00 TC SPL#01 903.100 mg 0013497 cts 006.201 mgC 0.69 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:36:28 2005

0029

#0001 15:44:06 TC SPL#01 50.400 mg 0001621 cts 000.661 mgC 1.31 %C

OI Analytical

Analysis Date: Tue Apr 19 15:36:28 2005

#0001 15:44:06 TC SPL#01 50.400 mg 0001621 cts 000.661 mgC 1.31 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:44:35 2005

#0001 15:51:55 TC SPL#01 56.200 mg 0000515 cts 000.145 mgC 0.26 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:52:22 2005

TOC Combustion

#0001 15:59:41 TC SPL#01 121.800 mg 0001360 cts 000.539 mgC 0.44 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 16:00:10 2005

#0001 16:07:32 TC SPL#01 55.900 mg 0001426 cts 000.570 mgC 1.02 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 16:07:58 2005

#0001 16:17:48 TC SPL#01 14.200 mg 0006106 cts 002.753 mgC 19.39 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 16:18:17 2005

#0001 16:26:28 TC SPL#01 0.090 mg 0000287 cts 000.039 mgC 42.79 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 16:26:57 2005

#0001 16:34:49 TC SPL#01 3.000 mg 0006940 cts 003.142 mgC 104.74 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 16:38:15 2005

#0001 16:45:41 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 18:10:13 2005

#0001 18:17:37 TC SPL#01 58.800 mg 0000690 cts 000.227 mgC 0.39 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 18:18:05 2005

#0001 18:25:25 TC SPL#01 [illegible]

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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/19/05 - 04/20/05

Instrument #: 8610

R^2: 0.9959

Analyst: KWE1506

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 3 A

*③ KWE1506 04/19/05

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
12	~~CCB~~ CCV1.5	1.856	5.0 mL ~~0.00~~	(IS)			2016		%Rec=124% (IS)	
13	CCV 3.0	3.069	10.0 mL	(IS)			1337		04/20/05 %Rec= 102% (IS)	
14	CCB	-0.095	0.00	↓			1347		<LOQ ↓	
15	4504563 ✓	0.757	46.3	16350 ✓	21.6	3672	1355	05109062131B		HRN01-15
16	4504565 ✓	0.422	45.2	9336	22.1	3761	1403			-AFD
17	4504567 ✓	2.984	644.8	4628	1.55	264	1411			-19
18	4504568	0.073	56.1	1301 <LOQ	17.8	3030	1428		<LOQ - REPEAT	-20*
19	4504590 ③ 4/21/05	~~0.15~~ .202	136.1	1102 <LOQ	7.35	1249	1436		↓	HRN02-01
20	4504591 ✓	0.498	23.5	21191	42.6	7234	1444			-02*
21	PBS ✓	-0.095	0.00	0.00	1.00	170	1452	05109150533A	<LOQ (IS)	
22	LCSS ✓	1.159	200.0	5795	5.00	850	1500	↓	~~Dr=6370 mg/kg~~ %Rec= 108% (IS)	
23	4504550	32.967	368.7	89414	2.71	461	1508	05109062131A	OR - REPEAT	HRN01-04
24	CCV 1.5	1.637	5.0 mL	(IS)			1520		%Rec= 109% (IS)	
25	CCB	-0.095	0.00	↓			1531		<LOQ ↓	

Verified by: BL609

Date: 4/21/05

1941.02

055460 5

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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/20/05

Instrument #: 5214

R^2: 0.9969

Analyst: KWE1606

Sucrose Soln Lot #: 062604

Run #: 0 5 1 0 3 1

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
26	4504652	0.163	139.6	4613	7.16	1218	1640	051090621314		HRN01-06
27	4558	0.506	352.4	1436	2.84	482	1648	051090621313		-10
28	4559-R	-0.095	10.6	0.00	94.3	16038	1655		<LOQ - REPEAT	-11
29	4561	4.886	86.1	56748	11.6	1974	1703			-13
30	4562	0.856	93.6	9145	10.7	1816	1716			-14
31	2416-U	1.668	66.4	25120	15.1	2560	1728	051091605334		ASW31-01
32	-R	3.323	10.2	325784	98.01	16667	1736		SA=294120mg/kg %Rec=102.2% (13)	
33	-D	0.948	63.6	14906	15.7	2673	1744		R=51 (03)	
34	4502417	2.67	57.0	46842	17.5	2982	1752			-02
36	2418	11.478	71.8	159164	13.9	2368	1800		SR-REPEAT	-03
36	CCV 3.0	3.027	10.0uL	(15)			1708		%Rec=101% (15)	
37	CCB	-0.095	0.00				1745		<LOQ	
38	4502419	1.889	93.6	20187	10.7	1816	1753	051091605334		ASW31-04
39	4502420	3.216	78.7	40864	12.7	2160	1801			ASW31-05

Verified by: [signature] Date: 4/21/05

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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/20/05

Instrument #: 8610

R^2: 0.9969

Analyst: KWE1505

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 3 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
40	4502421 ✓	1.079	48.2	22386	20.7	3527	1809	051091605334 ✓		ASW31-06
41	2422	8.179	66.5	144761	17.7	3009	1817			-07
42	2423	7.836	66.7	117611	16.0	2549	1825			-08
43	2424 ✓	1.148	55.1	20835	18.1	3085	1833		✓	-09
44	2425 ✓	1.571	50.9	30864	19.6	3340	1841		✓	-10
46	PBS	-0.096	0.00	0.00 ✓	1.00	170	1857	051101605 3 1A	③ LCWE1505 04/20/05	-11
46	LCSS	1.363	202.4	6685. ✓	4.94	840	1905		tv=5370, rec=124%	
47	4504800 ✓	0.741	78.8	9404	12.7	2167	1914	051090621 3 1A ✓		HRNO1-04
48	CCV 4.6	4.520	15.0mL	(IS)			1922		7. Rec = 100% (SS)	
49	CCB	-0.095	0.00	↓			1933		<LOQ ↓	
50	~~44~~ 4504566-D	0.437	68.4	6385 ✓	14.6	2485	1943	051090621 3 1A ✓	all	HRNO1-08DUP
51	4567	0.073	116.4	633	8.67	1474	1951	051090621 3 1B	<LOQ REPEAT	-09
52	4560	0.501	55.7	8993 ✓	18.0	3067	1958			-12
53	↓ 4569 ✓	0.612	81.1	7546 ✓	12.3	2096	2006	↓		-11

① CCV 4/20/05 1806

② LCWE1505 04/20/05

Verified by: [signature] Date: 4/21/05

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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/20/05

Instrument #: 8610

R^2: 0.9959

Analyst: KWE1505

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 3 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
54	4504559-D	0.333	56.0	~~56~~ 5947	17.9	3036	2015	0510906213113	pd	HRN01-11
55	4504568	0.245	87.7	2793 ✓	11.4	1938	2023	↓		↓ -20*
56	4504590	0.087	60.6	1436	16.5	2805	2031	↓	<LOQ - REPEAT	HRN02-01
57	4502426	5.619	49.9	112605 ✓	20.0	3407	2039	0510150531A		ASW31-11
~~58~~	~~4502428~~		~~91.0~~		~~11.0~~	~~1868~~		↓		↓ -13
~~59~~	~~4502429~~		~~88.4~~		~~11.3~~	~~1923~~		↓		↓ -14
60 58	CCV3.0	3.000	10.0 µL				2048		%Rec = 100%	
59	CCB	~ .095								

KWE 1505 4/20/05

Verified by: BJ 6/05

Date: 4/25/05

1941.02

055460 8

IR Failure: NO OUTPUT
IR Failure: NO OUTPUT
Printer Error

LANCASTER LABORATORIES

TOC Combustion

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 13:29:17 2005

#0001 13:37:15 TC SPL#01 3.000 mg 0006782 cts 003.069 mgC 102.28 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 13:40:08 2005

#0001 13:47:34 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 13:48:02 2005

#0001 13:55:23 TC SPL#01 46.300 mg 0001827 cts 000.757 mgC 1.63 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 13:55:52 2005

#0001 14:03:16 TC SPL#01 45.200 mg 0001109 cts 000.422 mgC 0.93 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:03:45 2005

#0001 14:11:06 TC SPL#01 644.800 mg 0006600 cts 002.984 mgC 0.46 %C

SOLIDS: EXTERNALLY ABORTED

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:21:29 2005

#0001 14:28:53 TC SPL#01 56.100 mg 0000360 cts 000.073 mgC 0.13 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:29:19 2005

#0001 14:36:35 TC SPL#01 136.100 mg 0000637 cts 000.202 mgC 0.15 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:37:02 2005

0035

#0001 14:44:24 TC SPL#01 23.500 mg 0001271 cts 000.498 mgC 2.12 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:44:51 2005

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:29:19 2005

#0001 14:36:35 TC SPL#01 136.100 mg 0000637 cts 000.202 mgC 0.15 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:37:02 2005

TOC Combustion

#0001 14:44:24 TC SPL#01 23.500 mg 0001271 cts 000.498 mgC 2.12 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:44:51 2005

#0001 14:52:21 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:52:48 2005

#0001 15:00:19 TC SPL#01 200.000 mg 0002688 cts 001.159 mgC 0.58 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:00:46 2005

#0001 15:08:08 TC SPL#01 368.700 mg 0070870 cts 032.967 mgC 8.94 %C

SOLIDS: EXTERNALLY ABORTED

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:13:18 2005

#0001 15:20:51 TC SPL#01 1.500 mg 0003713 cts 001.637 mgC 109.12 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:23:09 2005

#0001 15:31:27 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:31:53 2005

#0001 15:40:18 TC SPL#01 139.600 mg 0001555 cts 000.630 mgC 0.45 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:40:46 2005

0036

#0001 15:48:02 TC SPL#01 352.400 mg 0001289 cts 000.506 mgC 0.14 %C

OI Analytical

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:40:46 2005

#0001 15:48:02 TC SPL#01 352.400 mg 0001289 cts 000.506 mgC 0.14 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:48:29 2005

TOC Combustion

#0001 15:55:51 TC SPL#01 10.600 mg 0000000 cts -000.095 mgC -0.90 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:56:18 2005

#0001 16:03:52 TC SPL#01 86.100 mg 0010677 cts 004.886 mgC 5.67 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 16:04:18 2005

SOLIDS: EXTERNALLY ABORTED

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 16:09:05 2005

#0001 16:16:28 TC SPL#01 93.600 mg 0002039 cts 000.856 mgC 0.91 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 16:16:55 2005

#0001 16:28:39 TC SPL#01 66.400 mg 0003779 cts 001.668 mgC 2.51 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 16:29:06 2005

#0001 16:36:54 TC SPL#01 10.200 mg 0007327 cts 003.323 mgC 32.58 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 16:37:20 2005

#0001 16:44:57 TC SPL#01 63.600 mg 0002236 cts 000.948 mgC 1.49 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11 0037
Analysis Date: Wed Apr 20 16:45:24 2005

#0001 16:52:41 TC SPL#01 57.000 mg 0005928 cts 002.670 mgC 4.68 %C

OI Analytical

#0001 16:52:41 TC SPL#01 57.000 mg 0005928 cts 002.670 mgC 4.68 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 16:53:08 2005

#0001 17:00:25 TC SPL#01 71.800 mg 0024700 cts 011.428 mgC 15.92 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 17:00:52 2005

TOC Combustion

#0001 17:08:57 TC SPL#01 3.000 mg 0006694 cts 003.027 mgC 100.92 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 17:37:42 2005

#0001 17:45:05 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 17:45:32 2005

#0001 17:53:18 TC SPL#01 93.600 mg 0004253 cts 001.889 mgC 2.02 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 17:53:45 2005

#0001 18:01:33 TC SPL#01 78.700 mg 0007099 cts 003.216 mgC 4.09 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:02:00 2005

#0001 18:09:19 TC SPL#01 48.200 mg 0002517 cts 001.079 mgC 2.24 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:09:46 2005

#0001 18:17:07 TC SPL#01 56.500 mg 0017736 cts 008.179 mgC 14.48 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:17:33 2005

#0001 18:25:56 TC SPL#01 66.700 mg 0017005 cts 007.838 mgC 11.75 %C

0038

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:26:23 2005

#0001 18:33:47 TC SPL#01 55.100 mg 0002666 cts 001.148 mgC 2.08 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:26:23 2005

#0001 18:33:47 TC SPL#01 55.100 mg 0002666 cts 001.148 mgC 2.08 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:34:13 2005

TOC Combustion

#0001 18:41:31 TC SPL#01 50.900 mg 0003573 cts 001.571 mgC 3.09 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:41:58 2005

SOLIDS: EXTERNALLY ABORTED

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:50:18 2005

#0001 18:57:42 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:58:09 2005

#0001 19:05:45 TC SPL#01 202.400 mg 0003105 cts 001.353 mgC 0.67 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:06:11 2005

#0001 19:14:28 TC SPL#01 78.800 mg 0001793 cts 000.741 mgC 0.94 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:14:56 2005

#0001 19:22:38 TC SPL#01 4.500 mg 0009894 cts 004.520 mgC 100.45 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:26:36 2005

0039

#0001 19:33:59 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:14:56 2005

#0001 19:22:38 TC SPL#01 4.500 mg 0009894 cts 004.520 mgC 100.45 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:26:36 2005

TOC Combustion

#0001 19:33:59 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:34:25 2005

#0001 19:43:15 TC SPL#01 68.400 mg 0001141 cts 000.437 mgC 0.64 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:43:41 2005

#0001 19:51:00 TC SPL#01 115.400 mg 0000361 cts 000.073 mgC 0.06 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:51:27 2005

#0001 19:58:46 TC SPL#01 81.100 mg 0001278 cts 000.501 mgC 0.62 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:59:13 2005

#0001 20:06:48 TC SPL#01 81.100 mg 0001517 cts 000.612 mgC 0.76 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:07:15 2005

#0001 20:15:07 TC SPL#01 55.700 mg 0000918 cts 000.333 mgC 0.60 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:15:33 2005

#0001 20:23:17 TC SPL#01 87.700 mg 0000730 cts 000.245 mgC 0.28 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:23:46 2005

8848

#0001 20:31:05 TC SPL#01 60.600 mg 0000390 cts 000.087 mgC 0.14 %C

OI Analytical

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:07:15 2005

#0001 20:15:07 TC SPL#01 55.700 mg 0000918 cts 000.333 mgC 0.60 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:15:33 2005

TOC Combustion

#0001 20:23:17 TC SPL#01 87.700 mg 0000730 cts 000.245 mgC 0.28 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:23:46 2005

#0001 20:31:05 TC SPL#01 60.600 mg 0000390 cts 000.087 mgC 0.14 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:31:33 2005

#0001 20:39:04 TC SPL#01 49.900 mg 0012248 cts 005.619 mgC 11.26 %C

SOLIDS: EXTERNALLY ABORTED

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:40:23 2005

#0001 20:48:12 TC SPL#01 3.000 mg 0006636 cts 003.000 mgC 100.01 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:48:53 2005

#0001 20:56:26 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

IR Failure: NO OUTPUT

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2425 New Holland Pike • Lancaster, PA 17601

Raw Data Notebook
Total Organic Carbon Solids Module

Date: 4/21/05

Instrument #: 8610

R^2: 0.9966

Analyst: [illegible]621

Sucrose Soln Lot #: 062504

Run #: | D | S | 1 | 1 | 1 | A |

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
1	Blank	-0.095	0				0722			
2	0.09 Std	374 cts	0.3ml				0731			
3	0.45	1236	1.5				0741			
4	1.80	4442	6.0				0749			
5	6.00	12722.	20.0				0758			
6	ccv 3.0	3.114	10.ml				0808		RC=104%	
7	ccb	-0.095	0				0817	⑦ 4-21-05		
8	4502428	1.336	91.0	14681.	11.0	1868.	0827	051101505 31A		ASW31
9	4502429	4.731	88.4	53518.	11.3	1923.	0835			
10	4502430-4	6.365	76.2	OR	13.1	2231.	0842			
11	2431-R	4.953	11.2	442232.	89.3	15179.	0850		SA=26785. RC=	
12	2433-D	7.437	51.6	OR	19.4	3295.	0858			
13	2434	0.726	55.4	13105.	18.1	3069.	0906			
14	2435	3.479	49.2	70711.	20.3	3455.	0914			

Verified by: [illegible]609 Date: 4/25/05

Run#05111A 4/21/05 → 4/22/05 [illegible]

JB/609
4/25/05

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:10:40 2005

SOLIDS: EXTERNALLY ABORTED

LANCASTER LABORATORIES

TOC Combustion

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:15:34 2005

#0001 07:22:59 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:23:26 2005

#0001 07:31:43 TC STD#01 000.090 mgC 0000374 cts

CALIBRATION RESULTS:
STD TYPE = TC
STD#1 = 00.090 mgC 1 reps Avg Area = 374.0 cts %rsd = 0.00
STD#2 = 00.450 mgC 1 reps Avg Area = 1338.0 cts %rsd = 0.00
STD#3 = 01.800 mgC 1 reps Avg Area = 4306.0 cts %rsd = 0.00
STD#4 = 06.000 mgC 1 reps Avg Area = 12694.0 cts %rsd = 0.00
RF = 467.630 ugC/k-cts
R2 = 0.9963
OFFSET = 219 cts (-0.103 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:32:11 2005

#0001 07:41:32 TC STD#02 000.450 mgC 0001236 cts

CALIBRATION RESULTS:
STD TYPE = TC
STD#1 = 00.090 mgC 1 reps Avg Area = 374.0 cts %rsd = 0.00
STD#2 = 00.450 mgC 1 reps Avg Area = 1236.0 cts %rsd = 0.00
STD#3 = 01.800 mgC 1 reps Avg Area = 4306.0 cts %rsd = 0.00
STD#4 = 06.000 mgC 1 reps Avg Area = 12694.0 cts %rsd = 0.00
RF = 468.771 ugC/k-cts
R2 = 0.9978
OFFSET = 204 cts (-0.096 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:42:00 2005

8843

#0001 07:49:53 TC STD#03 001.800 mgC 0004442 cts

CALIBRATION RESULTS:
STD TYPE = TC
STD#1 = 00.090 mgC 1 reps Avg Area = 374.0 cts %rsd = 0.00
STD#2 = 00.450 mgC [illegible]

STD#3 = 01.800 mgC 1 reps Avg Area = 4306.0 cts %rsd = 0.00
STD#4 = 06.000 mgC 1 reps Avg Area = 12694.0 cts %rsd = 0.00
RF = 468.771 ugC/k-cts
R2 = 0.9978
OFFSET = 204 cts (-0.096 mgC)

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:42:00 2005

#0001 07:49:53 TC STD#03 001.800 mgC 0004442 cts

TOC Combustion

CALIBRATION RESULTS:
STD TYPE = TC
STD#1 = 00.090 mgC 1 reps Avg Area = 374.0 cts %rsd = 0.00
STD#2 = 00.450 mgC 1 reps Avg Area = 1236.0 cts %rsd = 0.00
STD#3 = 01.800 mgC 1 reps Avg Area = 4442.0 cts %rsd = 0.00
STD#4 = 06.000 mgC 1 reps Avg Area = 12694.0 cts %rsd = 0.00
RF = 465.303 ugC/k-cts
R2 = 0.9964
OFFSET = 205 cts (-0.096 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:50:22 2005

#0001 07:58:11 TC STD#04 006.000 mgC 0012722 cts

CALIBRATION RESULTS:
STD TYPE = TC
STD#1 = 00.090 mgC 1 reps Avg Area = 374.0 cts %rsd = 0.00
STD#2 = 00.450 mgC 1 reps Avg Area = 1236.0 cts %rsd = 0.00
STD#3 = 01.800 mgC 1 reps Avg Area = 4442.0 cts %rsd = 0.00
STD#4 = 06.000 mgC 1 reps Avg Area = 12722.0 cts %rsd = 0.00
RF = 464.503 ugC/k-cts
R2 = 0.9966
OFFSET = 204 cts (-0.095 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:58:39 2005

#0001 08:08:32 TC SPL#01 3.000 mg 0006908 cts 003.114 mgC 103.79 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 08:09:00 2005

#0001 08:16:21 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 08:19:48 2005

0044

#0001 08:27:14 TC SPL#01 91.000 mg 0003080 cts 001.336 mgC 1.47 %C

OI Analytical

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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 4/21/05

Instrument #: 8610

R^2: 0.9966

Analyst: ~~EZ~~ 621 / [illegible]

Sucrose Soln Lot #: 062504

Run #: 0 5 1 1 1 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
29	CCV 3.0	3.138	10. ml				1138	~~[illegible]~~ 4-21-05	rec=105%	
30	CCB	-0.095	0				1146			
31	4504843	11.644	48.4	OR	20.7	3512.	1153	051101505318		HRW37
32	4844	7.100	65.1	✓	15.4	2611.	1201			
33	4845	0.680	50.5	13465. ✓	19.8	3366.	1209			
34	4846	3.887	43.9	88405. ✓	22.8	3872.	1216			
35	4848	0.875	50.0	17500. ✓	20.0	3400.	1224			
36	✓ 4849	1.225	59.2	20693. ✓	16.9	2872.	1232	↓		↓
37	CCV 4.5	4.695	15. ml				1243		rec=104%	
38	CCB	-0.095	0				1251			
39	PBS	-0.095	0.00	0.00	1.00 ×(2)weights	170 all/100	1411		LOQ (25)	
40	LCSS	1.032	197.4	~~5~~ 5226	5.06	861	1419		TV=5570 mg/kg %rec=47% (23)	
41	~~4504849~~-R ✓	2.916	10	291500	100	17000	1428	051090621318	SA=D0000 mg/kg %rec=78% (23)	HRN01-11
42	4504657 ✓	3.641	288.4	12625	3.47	689	1436	↓	95 (5) 5/5 4/25/05	HRN01-09

Verified by: [illegible] 4/25/05

Date: 4/25/05

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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/21/05

R^2: 0.9966

Instrument #: 8610

Analyst: LWE1505

Sucrose Soln Lot #: 062504

Run #: 0 4 / / / A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
43	4584690	-0.095	214.3	0.00 <LOQ	4.67	793	1443	05109062131B	<LOQ - REPEAT	HRNOZ-01
44	2418	2.323	12.4	187339	80.7	13710	1451	05109105331A		A9W31-03
45	2422	2.911	16.0	181938	62.5	10625	1459			-07
46	2423	1.489	13.6	109485	73.5	12500	1507			-08
47	2428	0.998	49.4	20202	20.2	3441	1514	05110105631A		-13
48	CCV 3.0	3.024	10.0mL	(J3)			1523		%Rec = 101% (J3)	
49	CCB	-0.95	0.00	↓			1536		<LOQ	
50	4602429	1.728	38.4	46000	26.0	4427	1544	05110105631A		A9W34-14
51	2430-U	4.397	32.3	136120	31.0	5263	1552			-16BKG
52	2431-R	3.829	8.1	472716	123	20988	1600		SA = 370380 mg/kg %Rec = 91% (J5)	-15MS
53	2433-D	4.34	~~27.3~~ 27.3	(J6) LWE1505 4/21/05 168974	30.6	6227	1608		r=15	-15DUP
54	2434	1.218	81.5	14945	12.3	2086	1616			-16
55	2435	2.716	28.8	94306	34.7	5903	1624			-17
56	2436	3.688	26.3	140228	38.0	6464	1632			-18

Verified by: RB 4/25/05 Date: 4/25/05

#0001 12:16:55 TC SPL#01 43.900 mg 0008559 cts 003.881 mgC 8.84 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 12:17:22 2005

#0001 12:24:38 TC SPL#01 50.000 mg 0002088 cts 000.875 mgC 1.75 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 12:25:05 2005

TOC Combustion

#0001 12:32:21 TC SPL#01 59.200 mg 0002843 cts 001.225 mgC 2.07 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 12:32:48 2005

#0001 12:43:40 TC SPL#01 4.500 mg 0010312 cts 004.695 mgC 104.33 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 12:44:07 2005

#0001 12:51:23 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 13:55:50 2005

SOLIDS: EXTERNALLY ABORTED

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:04:28 2005

#0001 14:11:51 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:12:18 2005

#0001 14:19:35 TC SPL#01 197.400 mg 0002426 cts 001.032 mgC 0.52 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:20:02 2005

#0001 14:28:09 TC SPL#01 10.000 mg 0006480 cts 002.915 mgC 29.15 %C

0047

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:28:36 2005

#0001 14:35:57 TC SPL#01 288.400 mg 0008044 cts 003.641 mgC 1.26 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:36:24 2005

#0001 14:43:45 TC SPL#01 214.300 mg 0000000 cts -000.095 mgC -0.04 %C

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OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:44:12 2005

TOC Combustion

#0001 14:51:31 TC SPL#01 12.400 mg 0005206 cts 002.323 mgC 18.73 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:51:58 2005

#0001 14:59:15 TC SPL#01 16.000 mg 0006471 cts 002.911 mgC 18.19 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:59:42 2005

#0001 15:07:00 TC SPL#01 13.600 mg 0003411 cts 001.489 mgC 10.95 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:07:26 2005

#0001 15:14:44 TC SPL#01 49.400 mg 0002353 cts 000.998 mgC 2.02 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:15:11 2005

#0001 15:23:06 TC SPL#01 3.000 mg 0006716 cts 003.024 mgC 100.82 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:28:49 2005

#0001 15:36:12 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:36:39 2005

#0001 15:44:48 TC SPL#01 38.400 mg 0003925 cts 001.728 mgC 4.50 %C

0040

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:45:16 2005

#0001 15:52:36 TC SPL#01 32.300 mg 0009670 cts 004.397 mgC 13.61 %C

Extraction/Distillation/Digestion Logs

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Combustion TOC Prep Log
Analysis #2079, #0383

Tray #: 20
Time: 0800
Balance I.D.: B35614
Analyst: [illegible]

Date: 4/19/05 Batch #: 051090621 31

	A		B		C	
	Sample #	Wt. (mg)	Sample #	Wt. (mg)	Sample #	Wt. (mg)
1	PBS	0	Batch 4-19-05 (1) PBS	0	PBS	0
2	LCSS	195.9	LCSS	213.7	LCSS	192.7
3	4504547	48.4	4504548	51.9	4504549	52.5
4	4504550	903.1	4504551	50.4	4504552	56.7
5	4504553	121.8	4504554-4	55.9	4504555-R	14.2
6	4504556-D	58.8	4504557	294.2	4504558	54.2
7	(B) 4504559-4	46.9	4504559-R	19.9	4504559-D	49.6
8	4504560	49.1	4504561	266.0	4504562	442.9

Verified by: [signature] Date: 4/21/05

2705.01 12/13/00

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Combustion TOC Prep Log
Analysis #2079, #0383

Tray #: 10
Time: 0845
Balance I.D.: 835614
Analyst: [illegible]

Date: 4/19/05 Batch #: 051904213B

	A		B		C	
	Sample #	Wt. (mg)	Sample #	Wt. (mg)	Sample #	Wt. (mg)
1	4504563	46.3	4504565	45.2	4504567	64.8
2	4504568	56.1	4504590	136.1	4504591	23.5
3						
4						
5						
6						
7						
8						

Verified by: [illegible] Date: 4/21/05

2705.01 12/13/00

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Combustion TOC Prep Log
Analysis #2079, #0383

Tray #: 20
Time: 2005
Balance I.D.: B35614
Analyst: KWE1505

Date: 04/19/05
Batch #: REPEATS → 05109062131

	A		B		C	
	Sample #	Wt. (mg)	Sample #	Wt. (mg)	Sample #	Wt. (mg)
1	4504550	368.7	4504552	139.6	4504558	352.4
2	4504559-R	10.6	4504561	86.1	4504562	93.6
3						
4						
5						
6						
7						
8						

Verified by: BL609
Date: 4/21/05

2705.01 12/13/00

054861 35

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Combustion TOC Prep Log
Analysis #2079, #0383

Tray #: 50
Time: .1945
Balance I.D.: B34214
Analyst: [illegible]

Date: 04/20/05

Batch #: REPEATS + 05110150531A
(05109062131)

	A		B		C	
	Sample #	Wt. (mg)	Sample #	Wt. (mg)	Sample #	Wt. (mg)
1	4504550	78.8	4504556-D	68.4	4504557	115.4
2	4504559-U	81.1	4504559-D	56.0	4504560	55.7
3	4504568	87.7	4504590	60.6		
4	PBS	0.00				
5	LCSS	236.0	LCSS	214.9	LCSS	202.4
6	4502426	49.9	4502428	91.0	4502429	88.4
7	4502430-U	76.2	4502431-R	11.2	4502433-D	51.6
8	4502434	55.4	4502435	49.2	4502436	62.2

Verified by: B/609 Date: 4/25/05

2705.01 12/13/00

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Combustion TOC Prep Log
Analysis #2079, #0383

Tray #: 10
Time: 1300
Balance I.D.: B35619
Analyst: BK, 21

Date: 4/21/05 Batch #: Repeats

	A		B		C	
	Sample #	Wt. (mg)	Sample #	Wt. (mg)	Sample #	Wt. (mg)
1	PBS	0	PBS	0	PBS	0
2	LCSS	216.1	LCSS	210.1	LCSS	197.9
3	4504559-R	③ BK 4-21-05 197. 10.0	4504557	288.4	4504590	214.3
4	4502418	12.4	4502422	16.0	4502423	13.6
5	4502428	49.4	4502429	38.4	4502430-4	32.3
6	4502431-R	8.1	4502433-D	27.3	4502434	81.5
7	4502435	28.8	4502436	26.3	4502437	36.7
8	4502438	16.2	4502439	13.4	4504843	6.6

Verified by: BK 4/25/05 Date: 4/25/05

2705.01 12/13/00

Miscellaneous Analysis Data

Case Narrative
Conformance/Nonconformance
Summary

Lancaster Laboratories

Where quality is a science.

CLIENT: Blasland, Bouck & Lee, Inc.
SDG: HRN01

LANCASTER LABORATORIES

MISCELLANEOUS WET CHEMISTRY

SAMPLE NUMBERS:

Sample #	Sample Code	Comments
4504547	12A01	
4504548	20A01	
4504549	19A01	
4504550	10A01	
4504551	18A01	
4504552	17A01	
4504553	-1A01	
4504554	-2A01	
4504555	-2A01	
4504556	-2A01	
4504557	03A01	
4504558	11-01	
4504559	09A01	
4504560	08A01	
4504561	07A01	
4504562	16A01	
4504563	-6A01	
4504564	-5A01	
4504565	1-DP1	
4504566	1-DP2	
4504567	15A01	
4504568	14A01	

ANALYSIS:
No problems were encountered during this analysis.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:
QC was within specification.

DATA INTERPRETATION:
No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Sandra J. Miller Date: 5-5-05
Sandra J. Miller
Specialist

0857

QC Summary

Lancaster Laboratories

Quality Control Reference List

Client Name: Blasland, Bouck & Lee, Inc.
SDG: HRN01

Analyte	Batch Numbers	Sample Number
Grain Size	05112710401A	4504547
		4504548
		4504549
		4504550
		4504551
		4504552
		4504553
		4504554
		4504557
		4504558
		4504560
		4504561
		4504562
		4504563
		4504564
		4504566
		4504567
		4504568
	05118710401A	4504559
Moisture	05108820008A	4504547
		4504548
		4504549
		4504550
		4504551
		4504552
		4504553
		4504554 U
		4504555
		4504556 D
		4504557
		4504558
		LCS
	05108820008B	4504559
		4504560 U,D
		4504561
		4504562
		4504563
		4504565
		4504567
		4504568

ABBREVIATION KEY	
U = Background	M = Matrix Spike Duplicate
D = Duplicate	R = Matrix Spike
LCS = Laboratory Control Standard	
LCSD = Laboratory Control Standard Duplicate	

Lancaster Laboratories

Quality Control Summary
Duplicate Analysis
Miscellaneous Wet Chemistry
SDG: HRN01
Matrix: SOIL

Sample Number	Sample Code	Analyte	Duplicate Analysis Date	ME	Batch #	Sample Result	Duplicate Result	Units	RPD (%)	Control Limits %
4504556	-2A01	Moisture	4/18/2005	OD	05108820008A	36.79	36.31	%	1	15
4504560	08A01	Moisture	4/18/2005	OD	05108820008B	48.93	48.64	%	1	15

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

ABBREVIATION KEY

CO = Colorimetric	ND = Not Detected
TI = Titration	NA = Not Applicable
G = Gravimetric	OD = Oven Dried
ME = Method	J = Estimated Value < LOQ
MTR = Meter	* = Out of Specification
IR = Infrared Spectrophotometry	
D = Duplicate	

Lancaster Laboratories

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate (LCSD)
Miscellaneous Wet Chemistry
SDG: HRN01
Matrix: SOIL

Batch Number	Analyte	Analysis Date	ME	True LCS/LCSD Value	LCS Results	LCSD Results	Units	Acceptance Window	RPD (%)	% RPD Acceptance </=
05108820008	Moisture	4/18/2005	OD	89.5	89.43	NA	%	88.6 - 90.4	NA	NA

ABBREVIATION KEY

CO = Colorimetric	* = Out of Specification
TI = Titration	J = Estimated Value < LOQ
G = Gravimetric	NA = Not Applicable
MTR = Meter	ME = Method
OD = Oven Dried	ND = Not Detected
IR = Infrared Spectrophotometry	

Lancaster Laboratories
Method Detection Limits
Department 29 – Water Quality

ANALYSIS	LL #	MDL	ANALYSIS	LL #	MDL
Acidity	476	2 mg/l as CaCO3	Oil and Grease	231	2.5 mg/l
Acidity	4530	2 mg/l as CaCO3	Oil and Grease	236	430 mg/kg
Alkalinity to pH 4.5	202	0.41 mg/l as CaCO3	Oil and Grease	429	0.40 mg/l
Ammonia Nitrogen	573	17 mg/kg	Oil and Grease	2446	233 mg/kg
Ammonia Nitrogen	221	0.11 mg/l	Orthophosphate	226	0.01 mg/l
Ammonia Nitrogen	6914	0.03 mg/l			
BOD	235	0.80 mg/l	Petroleum Hydrocarbons	1126, 8140	0.40 mg/l
Carbonaceous BOD	1364	0.80 mg/l	Petroleum Hydrocarbons	1554	0.50 mg/l
Chemical Oxygen Demand	1553	2.1 mg/l	Petroleum Hydrocarbons	1562	23 mg/kg
Chemical Oxygen Demand	234	300 mg/kg	Petroleum Hydrocarbons	1663	21 mg/kg
Chemical Oxygen Demand	4001	9.7 mg/l			
Chloride	1124	0.4 mg/l			
Chlorine Residual	240	0.04 mg/l			
Dissolved Oxygen	428	0.09 mg/l	Silica	559	0.1 mg/l
			Silica (low-level)	6628	0.01 mg/l
Ferrous Iron	8344	0.008 mg/l	Soluble BOD	541	0.80 mg/l
Fluoride	263	0.03 mg/l	Specific Conductance	280	1.7 umhos/cm
Fluoride Distillation	2200	0.03 mg/l	Specific Gravity	1443	0.005
Hexane Extractable Materials (Silica-Gel Treated)	8078, 612	1.68 mg/l	Sulfate	1125	1.5 mg/l
Hexane Extractable Materials	8079	1.4 mg/l	Sulfate, 10mg/l CCV (non-PW)	1125	8.28 – 9.90 mg/l
HEM Oil and Grease	2562	430 mg/kg	Sulfide	230	0.022 mg/l
Hexavalent Chromium	276	0.006 mg/l	Sulfide, Acid Volatile	1630	0.39 micromoles/g
Hexavalent Chromium	425	0.50 mg/kg	Sulfide Titration	1333	0.53 mg/l
Hexavalent Chromium	1446	0.0007 mg/l	Sulfide Titration	1122	27 mg/kg
Hexavalent Chromium	4858	0.65 mg/kg	Sulfide Titration	487	8.4 mg/kg
Hexavalent Chromium	4859	0.004 mg/l	Sulfite	229	1.2 mg/l
			Total Dissolved Solids	212	9.7 mg/l
M.B.A.S.	225	0.035 mg/l	Total Hardness	216	0.49 mg/l as CaCO3
Moisture	111	0.5 %	Total Solids	203	6.3 mg/l
Moisture	1353	0.5 %	Total Suspended Solids	206	3.0 mg/l
			Turbidity	279	0.09 NTU

Revised 3/11/05

Raw Data

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504547 Date: 4/22/05 Init./Emp. #: CLC/2E6 Batch #: 051127104-01A

Pan Balance ID#: 9458

4/27/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.26	539.26
1.5 Inch	559.81	559.81
0.75 Inch	556.67	556.67
#4	448.62	446.90
#6	436.37	431.19
#8	421.91	404.32
PAN	418.13	100.00

Time: 10:30

Organic Matter: lumpy soil & fine soil rocks

Odor: —

73°

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	454.69	368.62
#30	352.22	291.40
#50	305.63	264.10
#100	287.33	229.49
#200	270.53	216.27
PAN	309.74	292.13

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 318.13 Hydrometer ID #: —

Time	Temp	Reading	
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			Comments
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: —

Verified by: _____ Date: 4/28/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504547	04/22/05	CLC/286	318.13

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.26	539.26	0.00	100
1.5 inch	559.81	559.81	0.00	100
0.75 inch	556.67	556.67	0.00	100
# 4	448.62	446.90	1.72	99.49798611
# 6	436.37	431.19	5.18	97.98610706
# 8	421.91	404.32	17.59	92.8521394
PAN	418.13	100.00	318.13	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	454.69	368.62	86.07	67.73101395
# 30	352.22	291.40	60.82	49.9795692
# 50	305.63	264.10	41.53	37.85826864
# 100	287.33	229.49	57.84	20.97659214
# 200	270.53	216.27	54.26	5.139805032
PAN	309.74	292.13	17.61	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
99.5	4.75
98.0	3.35
92.9	2.36
67.7	1.18
50.0	0.6
37.9	0.3
21.0	0.15
5.1	0.075

LANCASTER LABORATORIES

5988

CLS
4/28/05

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 450 4548 Date: 4/22/05 Init./Emp. #: CLC/2836 Batch #: 051127104OM

4/29/05 Pan Balance ID#: 9458
#3 CLC/2806 4/29/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.30	539.30
1.5 Inch	559.83	559.83
0.75 Inch	556.63	556.63
#4	479.67	446.87
#6	445.55	431.17
#8	427.09	404.27
PAN	234.32	100.00

Time: 10:30

Organic Matter: hard lumpy soil rocks + twigs

Odor: grass

734

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	405.38	368.68
#30	322.72	291.52
#50	295.90	264.16
#100	256.12	229.58
#200	221.51	216.38
PAN	295.25	292.24

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 13432 Hydrometer ID #: —

Time	Temp	Reading	
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			Comments
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: —

0866

Verified by: _____ **Date:** 4/29/05

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504548	04/22/05	CLC/286	134.32

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.30	539.30	0.00	100
1.5 inch	559.83	559.83	0.00	100
0.75 inch	556.63	556.63	0.00	100
# 4	479.67	446.87	32.80	83.9467502
# 6	445.55	431.17	14.38	76.90877056
# 8	427.09	404.27	22.82	65.74001566
PAN	234.32	100.00	134.32	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	405.38	368.68	36.70	47.7779953
# 30	322.72	291.52	31.20	32.50783085
# 50	295.90	264.16	31.74	16.9733751
# 100	256.12	229.58	26.54	3.98394675
# 200	221.51	216.38	5.13	1.473179327
PAN	295.25	292.24	3.01	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
83.9	4.75
76.9	3.35
65.7	2.36
47.8	1.18
32.5	0.6
17.0	0.3
4.0	0.15
1.5	0.075

LANCASTER LABORATORIES

CLC 4/29/05

8057

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504549 Date: 4/22/05 Init./Emp. #: CLC/286 Batch #: 051127104 01A

4/29/05 Pan Balance ID#: 9458

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.32	539.32
1.5 Inch	559.82	559.82
0.75 Inch	556.68	556.68
#4	447.30	446.85
#6	434.06	431.12
#8	412.44	404.23
PAN	355.55	100.00

#3 CLC/286 4/29/05

Time: 10:30

Organic Matter: fine soil & hard lumpy soil rocks + twigs, shell pieces

Odor: —

73a

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	441.98	368.66
#30	344.12	~~229.53~~ 291.49
#50	315.50	264.15
#100	271.16	229.55
#200	240.10	216.35
PAN	305.09	292.20

#3 CLC/286 4/29/05

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 255.55 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: —

0068

Verified by: [signature] **Date:** 4/29/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504549	04/22/05	CLC/286	255.55

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.32	539.32	0.00	100
1.5 inch	559.82	559.82	0.00	100
0.75 inch	556.68	556.68	0.00	100
# 4	447.30	446.85	0.45	99.83155531
# 6	434.06	431.12	2.94	98.73104997
# 8	412.44	404.23	8.21	95.65787011
PAN	355.55	100.00	255.55	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	441.98	368.66	73.32	68.21261464
# 30	344.12	291.49	52.63	48.51207187
# 50	315.50	264.15	51.35	29.29066068
# 100	271.16	229.55	41.61	13.71514131
# 200	240.10	216.35	23.75	4.825004679
PAN	305.09	292.20	12.89	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
99.8	4.75
98.7	3.35
95.7	2.36
68.2	1.18
48.5	0.6
29.3	0.3
13.7	0.15
4.8	0.075

4/29/05

LANCASTER LABORATORIES

6985

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504550 Date: 4/22/05 Init./Emp. #: CCL286 Batch #: 0511271040A

Pan Balance ID#: 9458

4/27/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.30	539.30
1.5 Inch	559.84	559.84
0.75 Inch	556.67	556.67
#4	515.62	446.91
#6	467.24	431.18
#8 CCL286 4/27/05	438.69	404.29
PAN	317.22	100.00

Time: 10:30

Organic Matter: lumpy gritty soil shells rocks

Odor: —

73a

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	421.13	368.64
#30	353.90	291.51
#50	319.52	264.14
#100	259.71	229.52
#200	225.87	216.36
PAN	299.46	292.20

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 217.22 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: —

Verified by: [signature] **Date:** 4/28/05 0070

3606.02

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504550	04/22/05	CLC/286	217.22

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.30	539.30	0.00	100
1.5 inch	559.84	559.84	0.00	100
0.75 inch	556.67	556.67	0.00	100
# 4	515.62	446.91	68.71	80.72055894
# 6	467.24	431.18	36.06	70.60242992
# 8	438.69	404.29	34.40	60.95008277
PAN	317.22	100.00	217.22	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	421.13	368.64	52.49	46.22183563
# 30	353.90	291.51	62.39	28.71573276
# 50	319.52	264.14	55.38	13.17657622
# 100	259.71	229.52	30.19	4.705519235
# 200	225.87	216.36	9.51	2.037094195
PAN	299.46	292.20	7.26	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
80.7	4.75
70.6	3.35
61.0	2.36
46.2	1.18
28.7	0.6
13.2	0.3
4.7	0.15
2.0	0.075

LANCASTER LABORATORIES

CLC 4/28/05

8971

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504551 Date: 4/22/05 Init./Emp. #: CLC/286 Batch #: 0511271040A

Pan Balance ID#: 9458

4/29/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.34	539.34
1.5 Inch	559.85	559.85
0.75 Inch	556.68	556.68
#4	447.32	446.86
#6	433.03	431.15
#8	410.35	404.23
PAN	372.46	100.00

Time: 10:30

Organic Matter: Fine & lumpy soil twigs, rocks, & shells

Odor: —

73g

#3 CLC/28 4/29/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	437.23	368.63
#30	342.57	291.50
#50	301.20	264.14
#100	271.58	229.56
#200	255.53	216.33
PAN	326.70	292.19

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight
—		

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.
—		

Hydrometer Readings Sample Wt. 272.46 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: 0872

Verified by: DG **Date:** 4/29/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504551	04/22/05	CLC/286	272.46

Sieve Size (Mr)	Tare + Smp. Wt.	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.34	539.34	0.00	100
1.5 inch	559.85	559.85	0.00	100
0.75 inch	556.68	556.68	0.00	100
# 4	447.32	446.86	0.46	99.83625231
# 6	433.03	431.15	1.88	99.16702264
# 8	410.35	404.23	6.12	96.98846647
PAN	372.46	100.00	272.46	

Sieve Size (Mr)	Tare + Smp. Wt.	Tare Weight	Diff. (Mr)	% Passing
# 16	437.23	368.63	68.60	72.56870283
# 30	342.57	291.50	51.07	54.38914994
# 50	301.20	264.14	37.06	41.196782
# 100	271.58	229.56	42.02	26.23878684
# 200	255.53	216.33	39.20	12.2846362
PAN	326.70	292.19	34.51	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
99.8	4.75
99.2	3.35
97.0	2.36
72.6	1.18
54.4	0.6
41.2	0.3
26.2	0.15
12.3	0.075

4/25/05

LANCASTER LABORATORIES

8073

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504553 Date: 4/22/05 Init./Emp. #: clc/280 Batch #: 051127104O1A

4/26/05 Pan Balance ID#: 9458

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.35	539.35
1.5 Inch	559.86	559.79
0.75 Inch	570.25	556.70
#4	528.68	446.97
#6	453.10	431.25
#8	431.15	404.39
PAN	439.64	100.00

Time: 10:30

Organic Matter: gritty rocky soil shells

Odor: —

73a

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	411.36	368.62
#30	340.24	291.46
#50	367.11	264.15
#100	352.97	229.54
#200	233.63	216.34
PAN	296.66	292.22

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 33964 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: 0874

Oven Temp Out: —

Verified by: VD **Date:** 4/26/05

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504553	04/22/05	CLC/286	339.64

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.35	539.35	0.00	100
1.5 inch	559.86	559.79	0.07	99.98552463
0.75 inch	570.25	556.70	13.55	97.18350635
# 4	528.68	446.97	81.71	80.28661235
# 6	453.10	431.25	21.85	75.76822863
# 8	431.15	404.39	26.76	70.23450101
PAN	439.64	100.00	339.64	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	411.36	368.62	42.74	61.39625295
# 30	340.24	291.46	48.78	51.30898714
# 50	367.11	264.15	102.96	30.01778403
# 100	352.97	229.54	123.43	4.493568799
# 200	233.63	216.34	17.29	0.918152115
PAN	296.66	292.22	4.44	

Percent Passing	Particle Size
100.0	75
100.0	37.5
97.2	19
80.3	4.75
75.8	3.35
70.2	2.36
61.4	1.18
51.3	0.6
30.0	0.3
4.5	0.15
0.9	0.075

LANCASTER LABORATORIES

4/22/05

5208

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504552 Date: 4/22/05 Init./Emp. #: CLCh86 Batch #: 05112710401A

4/27/05 Pan Balance ID#: 9458
#3 CLCh86 4/22/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.39	539.39
1.5 Inch	559.89	559.89
0.75 Inch	556.72	556.72
#4	447.23	446.93
#6	433.54	431.15
#8	427.46	404.21
PAN	507.97	100.00

Time: 10:30

Organic Matter: fine & lungy soil, rocks

Odor: —

730

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	494.05	368.509
#30	390.09	291.47
#50	326.84	264.11
#100	309.30	229.452
#200	253.74	216.30
PAN	296.09	292.15

#3 CLCh86 4/27/05

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 407.97 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: —

Verified by: BJ/LLS **Date:** 4/28/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504552	04/22/05	CLC/286	407.97

Sieve Size (Mr)	Tare + Smp. Wt.	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.39	539.39	0.00	100
1.5 inch	559.89	559.89	0.00	100
0.75 inch	556.72	556.72	0.00	100
# 4	447.23	446.93	0.30	99.93086124
# 6	433.54	431.15	2.39	99.38005577
# 8	427.46	404.21	23.25	94.02180176
PAN	507.97	100.00	407.97	

Sieve Size (Mr)	Tare + Smp. Wt.	Tare Weight	Diff. (Mr)	% Passing
# 16	494.05	368.59	125.46	65.1079717
# 30	390.09	291.47	98.62	42.37975617
# 50	326.84	264.11	62.73	27.92284114
# 100	309.30	229.52	79.78	9.536539835
# 200	253.74	216.30	37.44	0.908022401
PAN	296.09	292.15	3.94	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
99.9	4.75
99.4	3.35
94.0	2.36
65.1	1.18
42.4	0.6
27.9	0.3
9.5	0.15
0.9	0.075

LANCASTER LABORATORIES

EF/LLS 4/26/05

0077

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504554 Date: 4/22/05 Init./Emp. #: CLC/286 Batch #: 0511271040A

4/29/05 Pan Balance ID#: 9458

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.29	539.29
1.5 Inch	559.82	559.82
0.75 Inch	556.70	556.70
#4	504.16	446.87
#6	465.79	431.13
#8	437.46	404.21
PAN	472.21	100.00

Time: 10:30

Organic Matter: fine & lumpy soil, shells, rocks, + twigs

Odor: ——

73a

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	420.44	368.64
#30	336.94	291.47
#50	317.85	264.11
#100	320.94	229.51
#200	313.34	216.33
PAN	324.96	292.20

Analytical Balance ID#: ——

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 372.21 Hydrometer ID #: ——

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: ——

Org. matter: ——

Oven ID#: ——

Oven Temp In: ——

Oven Temp Out: ~~0070~~

Verified by: [signature] **Date:** 4/29/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504554	04/22/05	CLC/286	372.21

Sieve Size (Mr)	Tare + Smp. Wt.	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.29	539.29	0.00	100
1.5 inch	559.82	559.82	0.00	100
0.75 inch	556.70	556.70	0.00	100
# 4	504.16	446.87	57.29	88.48233851
# 6	465.79	431.13	34.66	81.51424378
# 8	437.46	404.21	33.25	74.82961742
PAN	472.21	100.00	372.21	

Sieve Size (Mr)	Tare + Smp. Wt.	Tare Weight	Diff. (Mr)	% Passing
# 16	420.44	368.64	51.80	64.41567319
# 30	336.94	291.47	45.47	55.27432098
# 50	317.85	264.11	53.74	44.47035645
# 100	320.94	229.51	91.43	26.08914175
# 200	313.34	216.33	97.01	6.586116081
PAN	324.96	292.20	32.76	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
88.5	4.75
81.5	3.35
74.8	2.36
64.4	1.18
55.3	0.6
44.5	0.3
26.1	0.15
6.6	0.075

LANCASTER LABORATORIES

4/29/05

0079

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504557 Date: 4/22/05 Init./Emp. #: ALH86 Batch #: 051127104DA

Pan Balance ID#: 9458

4/26/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.33	539.33
1.5 Inch	559.86	559.86
0.75 Inch	730.75	556.71
#4	546.86	446.92
#6	436.05	431.22
#8	408.42	404.29
PAN	122.64	100.00

Time: 10:30

Organic Matter: same gritty soil, lots of rocks & shells

Odor: ———

73c

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	374.70	368.59
#30	297.04	291.48
#50	270.97	264.16
#100	232.16	229.51
#200	217.19	216.36
PAN	292.90	292.22

Analytical Balance ID#: ———

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 22.64 Hydrometer ID #: ———

Time	Temp	Reading
2 minutes		
5 minutes		
15 minutes		
30 minutes		
60 minutes		
250 minutes		
1440 minuets		

Comments

Foam: ———

Org. matter: ———

Oven ID#: ———

Oven Temp In: ———

Oven Temp Out: [illegible]

Verified by: _____ **Date:** 4/26/05

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504557	04/22/05	CLC/286	22.64

Sieve Size (Mr)	Tare + Smp. Wt.	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.33	539.33	0.00	100
1.5 inch	559.86	559.86	0.00	100
0.75 inch	730.75	556.71	174.04	43.04601086
# 4	546.86	446.92	99.94	10.3409909
# 6	436.05	431.22	4.83	8.760390078
# 8	408.42	404.29	4.13	7.408861837
PAN	122.64	100.00	22.64	

Sieve Size (Mr)	Tare + Smp. Wt.	Tare Weight	Diff. (Mr)	% Passing
# 16	374.70	368.59	6.11	5.409385431
# 30	297.04	291.48	5.56	3.589894627
# 50	270.97	264.16	6.81	1.361345638
# 100	232.16	229.51	2.65	0.494142287
# 200	217.19	216.36	0.83	0.222527652
PAN	292.90	292.22	0.68	

Percent Passing	Particle Size
100.0	75
100.0	37.5
43.0	19
10.3	4.75
8.8	3.35
7.4	2.36
5.4	1.18
3.6	0.6
1.4	0.3
0.5	0.15
0.2	0.075

dlus 4/26/05

LANCASTER LABORATORIES

0081

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 450 4558 Date: 4/22/05 Init./Emp. #: CC/280 Batch #: 051127104701A

4/26/05 Pan Balance ID#: 9458 #3 CC/280 4/26/05

Time: 10:30

Organic Matter: hard lumps soil, rocks

Odor:

73%

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.36	539.36
1.5 Inch	559.874	559.84
0.75 Inch	~~568.54~~ 556.67	556.67
#4	464.91	446.95
#6	453.37	431.17
#8	434.54	404.31
PAN	295.18	100.00

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	425.63	368.58
#30	344.15	291.50
#50	313.45	264.10
#100	257.85	229.49
#200	223.64	216.32
PAN	292.65	292.20

Analytical Balance ID#:

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 195.18 Hydrometer ID #:

Time	Temp	Reading
2 minutes		
5 minutes		
15 minutes		
30 minutes		
60 minutes		
250 minutes		
1440 minuets		

Comments

Foam:

Org. matter:

Oven ID#:

Oven Temp In:

Oven Temp Out:

Verified by: CC Date: 4/26/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504558	04/22/05	CLC/286	195.18

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.36	539.36	0.00	100
1.5 inch	559.84	559.84	0.00	100
0.75 inch	556.67	556.67	0.00	100
# 4	464.91	446.95	17.96	93.23718794
# 6	453.37	431.17	22.20	84.87780999
# 8	434.54	404.31	30.23	73.49474715
PAN	295.18	100.00	195.18	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	425.63	368.58	57.05	52.01265203
# 30	344.15	291.50	52.65	32.18737056
# 50	313.45	264.10	49.35	13.60469933
# 100	257.85	229.49	28.36	2.92578228
# 200	223.64	216.32	7.32	0.16944685
PAN	292.65	292.20	0.45	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
93.2	4.75
84.9	3.35
73.5	2.36
52.0	1.18
32.2	0.6
13.6	0.3
2.9	0.15
0.2	0.075

CB 4/26/05

LANCASTER LABORATORIES

5000

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504559 Date: 4/28/05 Init./Emp. #: [illegible] Batch #: 05118710401A

Pan Balance ID#: 9458

4/30/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.33	539.33
1.5 Inch	559.81 [illegible] 4/30/05	559.81
0.75 Inch	556.73	556.73
#4	491.58	446.89
#6	464.82	431.13
#8	431.30	404.18
PAN	441.05	100.00

Time: 12:00

Organic Matter: lumpy rocky soil

Odor: —

73a

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	404.79	368.57
#30	344.17	291.46
#50	368.41	264.11
#100	335.93	229.56
#200	247.01	216.35
PAN	303.01	292.22

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 341.05 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: ~~0084~~

Verified by: [illegible] **Date:** 5/2/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504559	04/28/05	CLC/286	341.05

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.33	539.33	0.00	100
1.5 inch	559.81	559.81	0.00	100
0.75 inch	556.73	556.73	0.00	100
# 4	491.58	446.89	44.69	89.99216213
# 6	464.82	431.13	33.69	82.44765424
# 8	431.30	404.18	27.12	76.37442616
PAN	441.05	100.00	341.05	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	404.79	368.57	36.22	68.26335237
# 30	344.17	291.46	52.71	56.45952301
# 50	368.41	264.11	104.30	33.10267607
# 100	335.93	229.56	106.37	9.282275221
# 200	247.01	216.35	30.66	2.416302766
PAN	303.01	292.22	10.79	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
90.0	4.75
82.4	3.35
76.4	2.36
68.3	1.18
56.5	0.6
33.1	0.3
9.3	0.15
2.4	0.075

5/4/05

5888

LANCASTER LABORATORIES

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504560 Date: 4/28/05 Init./Emp. #: cccbsu Batch #: 05118710401A

5/2/05 Pan Balance ID#: 9458

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.33	539.33
1.5 Inch	559.83	559.83
0.75 Inch	556.70	556.70
#4	447.16	446.89
#6	434.02	431.16
#8	415.15	404.24
PAN	398.34	100.00

Time: 12:00

Organic Matter: hard lumpy rocky soil + fine soil

Odor: —

73c

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	464.36	368.60
#30	368.79	291.49
#50	315.73	264.12
#100	265.99	229.54
#200	242.74	216.34
PAN	302.97	292.15

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 298.34 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: 0886

Verified by: [signature] **Date:** 5/3/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504560	04/28/05	CLC/286	298.34

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.33	539.33	0.00	100
1.5 inch	559.83	559.83	0.00	100
0.75 inch	556.70	556.70	0.00	100
# 4	447.16	446.89	0.27	99.91356681
# 6	434.02	431.16	2.86	98.99801524
# 8	415.15	404.24	10.91	95.5054741
PAN	398.34	100.00	298.34	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	464.36	368.60	95.76	64.85050259
# 30	368.79	291.49	77.30	40.10500032
# 50	315.73	264.12	51.61	23.58345605
# 100	265.99	229.54	36.45	11.91497535
# 200	242.74	216.34	26.40	3.463730072
PAN	302.97	292.15	10.82	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
99.9	4.75
99.0	3.35
95.5	2.36
64.9	1.18
40.1	0.6
23.6	0.3
11.9	0.15
3.5	0.075

EB 5/3/05

LANCASTER LABORATORIES

0087

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504561 Date: 4/28/05 Init./Emp. #: CCC/286 Batch #: 05118710401A

Pan Balance ID#: 9458

4/30/05 #3 CCC/286 5/1/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.30	539.30
1.5 Inch	559.81	559.81
0.75 Inch	590.35	556.74
#4	608.06	446.86
#6	453.47	431.14
#8	418.91	404.20
PAN	155.66	100.00

Time: 12:00

Organic Matter: rocky + shells very little soil

Odor: —

73a

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	381.44	368.61
#30	303.76	291.50
#50	285.23	264.12
#100	235.50	229.50
#200	218.36	216.27
PAN	293.59	292.22

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 55.66 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: [illegible]

Verified by: [illegible] **Date:** [illegible] 5/2/05

OB 8/2/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504561	04/28/05	CLC/286	55.66

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.30	539.30	0.00	100
1.5 inch	559.81	559.81	0.00	100
0.75 inch	590.35	556.74	33.61	88.30997183
# 4	608.06	446.86	161.20	32.24235679
# 6	453.47	431.14	22.33	24.47567041
# 8	418.91	404.20	14.71	19.35932663
PAN	155.66	100.00	55.66	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	381.44	368.61	12.83	14.89687315
# 30	303.76	291.50	12.26	10.63267365
# 50	285.23	264.12	21.11	3.290320337
# 100	235.50	229.50	6.00	1.203436402
# 200	218.36	216.27	2.09	0.476505165
PAN	293.59	292.22	1.37	

Percent Passing	Particle Size
100.0	75
100.0	37.5
88.3	19
32.2	4.75
24.5	3.35
19.4	2.36
14.9	1.18
10.6	0.6
3.3	0.3
1.2	0.15
0.5	0.075

dlw 5/4/05

LANCASTER LABORATORIES

0005

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504562 Date: 4/28/05 Init./Emp. #: CLH82 Batch #: DS118710401A

Pan Balance ID#: 9458

4/30/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.34	539.34
1.5 Inch	559.80	559.80
0.75 Inch	556.80	556.69
#4	470.89	446.90
#6	438.93	431.16
#8	411.95	404.17
PAN	564.76	100.00

Time: 12:00

Organic Matter: gritty soil rocks + twigs

rock

Odor: —

73a

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	416.46	368.60
#30	550.21	291.49
#50	389.32	264.12
#100	260.77	229.53
#200	217.99	216.32
PAN	292.24	292.18

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 464.76 Hydrometer ID #: —

Time	Temp	Reading
2 minutes		
5 minutes		
15 minutes		
30 minutes		
60 minutes		
250 minutes		
1440 minuets		

Comments

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: 8888

Verified by: CLH5 **Date:** 5/2/05

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504562	04/28/05	CLC/286	464.76

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.34	539.34	0.00	100
1.5 inch	559.80	559.80	0.00	100
0.75 inch	556.80	556.69	0.11	99.97819234
# 4	470.89	446.90	23.99	95.22214072
# 6	438.93	431.16	7.77	93.68172717
# 8	411.95	404.17	7.78	92.1393311
PAN	564.76	100.00	464.76	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	416.46	368.60	47.86	82.65101802
# 30	550.21	291.49	258.72	31.35941
# 50	389.32	264.12	125.20	6.538331913
# 100	260.77	229.52	31.25	0.342974961
# 200	217.99	216.32	1.67	0.011895085
PAN	292.24	292.18	0.06	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
95.2	4.75
93.7	3.35
92.1	2.36
82.7	1.18
31.4	0.6
6.5	0.3
0.3	0.15
0.0	0.075

CLC 5/2/05

LANCASTER LABORATORIES

6691

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504563 Date: 4/28/05 Init./Emp. #: cch86 Batch #: 051187104018

5/2/05 Pan Balance ID#: 9458
#3 cch286 5/2/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.32	539.32
1.5 Inch	559.856	559.86
0.75 Inch	556.782	556.72
#4	447.03	446.87
#6	432.05	431.12
#8	408.24	404.22
PAN	408.73	100.00

Time: 12:00

Organic Matter: gritty rocky soil

Odor: —

73a

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	384.02	368.57
#3 cch286 #30 5/2/05	398.03	291.45
#50	329.68	264.05
#100	316.82	229.47
#200	244.77	216.34
PAN	297.44	292.15

Analytical Balance ID#: —

Moisture

Tare Weight	~~Sample Weight~~	~~Oven Dry Weight~~

Bulk Density

Tare Weight	~~Sample Weight~~	~~DI H_2O + Sple Wt.~~

Hydrometer Readings Sample Wt. 308.73 Hydrometer ID #: —

Time	Temp	Reading	
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			Comments
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: [illegible]

Verified by: _____ Date: 5/3/05

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504563	04/28/05	CLC/286	308.73

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.32	539.32	0.00	100
1.5 inch	559.86	559.86	0.00	100
0.75 inch	556.72	556.72	0.00	100
# 4	447.03	446.87	0.16	99.94901861
# 6	432.05	431.12	0.93	99.65268927
# 8	408.24	404.22	4.02	98.3717818
PAN	408.73	100.00	308.73	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	384.02	368.57	15.45	93.44889115
# 30	398.03	291.45	106.58	59.48891155
# 50	329.68	264.05	65.63	38.5769819
# 100	316.82	229.47	87.35	10.74432832
# 200	244.77	216.34	28.43	1.685572266
PAN	297.44	292.15	5.29	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
99.9	4.75
99.7	3.35
98.4	2.36
93.4	1.18
59.5	0.6
38.6	0.3
10.7	0.15
1.7	0.075

LANCASTER LABORATORIES

0093

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

5/4/05

Sample: 4504564 Date: ~~4/28/05~~ Init./Emp. #: cw/286 Batch #: 051227104/01A

#3 cw/286 5/2/05

Pan Balance ID#: 9458

5/4/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.30	539.30
1.5 Inch	602.76	559.82
0.75 Inch	609.50	556.76
#4	536.42	446.82
#6	448.09	431.16
#8	428.27	404.17
PAN	214.21	100.00

rock
rocks

Time: 1210

Organic Matter: hard lumpy rocky soil, clay colors

Odor:

~~750~~ 20A
#3 cw/286
5/2/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	401.98	368.58
#30	322.50	291.46
#50	294.70	264.13
#100	242.19	229.52
#200	222.23	216.33
PAN	292.81	~~22~~ 292.18

#3 cw/286 5/4/05

Analytical Balance ID#:

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 114.21 Hydrometer ID #:

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam:

Org. matter:

Oven ID#:

Oven Temp In:

Oven Temp Out:

Verified by: EB/05 **Date:** 5/4/05 0894

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504564	05/02/05	CLC/286	114.21

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.30	539.30	0.00	100
1.5 inch	602.76	559.82	42.94	87.00824666
0.75 inch	609.50	556.76	52.74	71.05144481
# 4	526.42	446.82	79.60	46.96798961
# 6	448.09	431.16	16.93	41.84571704
# 8	428.27	404.17	24.10	34.55411817
PAN	214.21	100.00	114.21	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	401.98	368.58	33.40	24.44874878
# 30	322.50	291.46	31.04	15.05821062
# 50	294.70	264.13	30.57	5.80907462
# 100	242.19	229.52	12.67	1.975690483
# 200	222.23	216.33	5.90	0.190610261
PAN	292.81	292.18	0.63	

Percent Passing	Particle Size
100.0	75
87.0	37.5
71.1	19
47.0	4.75
41.8	3.35
34.6	2.36
24.4	1.18
15.1	0.6
5.8	0.3
2.0	0.15
0.2	0.075

LANCASTER LABORATORIES

5/4/05

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 45045606 Date: 4/28/05 Init./Emp. #: CLC/[illegible] Batch #: 05118710401A

5/2/05 Pan Balance ID#: 9458

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.31	539.31
1.5 Inch	559.82	559.82
0.75 Inch	556.76	556.76
#4	448.08	446.87
#6	434.82	431.15
#8	413.22	404.18
PAN	378.96	100.00

Time: 12:00

Organic Matter: hard lumpy soil, rocks

Odor: —

73a

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	450.66	368.58
#30	362.63	291.47
#50	320.74	264.16
#100	271.05	229.50
#200	235.22	216.31
PAN	300.85	292.17

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 278.96 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: 0096

Verified by: [signature] **Date:** 5/3/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504566	04/28/05	CLC/286	278.96

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.31	539.31	0.00	100
1.5 inch	559.82	559.82	0.00	100
0.75 inch	556.76	556.76	0.00	100
# 4	448.08	446.87	1.21	99.58686151
# 6	434.82	431.15	3.67	98.33378858
# 8	413.22	404.18	9.04	95.24720022
PAN	378.96	100.00	278.96	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	450.66	368.58	82.08	67.22207047
# 30	362.63	291.47	71.16	42.92543021
# 50	320.74	264.16	56.58	23.606938
# 100	271.05	229.50	41.55	9.420240371
# 200	235.22	216.31	18.91	2.963671128
PAN	300.85	292.17	8.68	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
99.6	4.75
98.3	3.35
95.2	2.36
67.2	1.18
42.9	0.6
23.6	0.3
9.4	0.15
3.0	0.075

06 5/3/05

LANCASTER LABORATORIES

8997

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504567 Date: 4/28/05 Init./Emp. #: cce/286 Batch #: 05118710401A
#3 ccc/286 4/29/05

Pan Balance ID#: 9458
4/29/05 #3 ccc/286 4/29/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.361	539.31
1.5 Inch	559.84	559.84
0.75 Inch	672.96	556.65
#4	569.74	446.84
#6	440.0815	431.14
#8	409.83	404.22
PAN	123.50	100.00

Time: 12:00

Organic Matter: #3 ccc/286 4/29/05 ~~[illegible]~~
large rocks + shells
Odor: NO SOIL

73c

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	376.81	368.61
#30	298.98	291.49
#50 #3 ccc/286 4/29/05	268.23	264.11
#100	231.72	229.51
#200	217.39	216.32
PAN	292.60	292.19

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 23.50 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: ~~[illegible]~~

Verified by: [signature] **Date:** 4/29/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504567	04/28/05	CLC/286	23.50

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.31	539.31	0.00	100
1.5 inch	559.84	559.84	0.00	100
0.75 inch	672.96	556.65	116.31	58.060794
# 4	569.74	446.84	122.90	13.74535752
# 6	440.15	431.14	9.01	10.49652039
# 8	409.83	404.22	5.61	8.473659539
PAN	123.50	100.00	23.50	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	376.81	368.61	8.20	5.516893232
# 30	298.98	291.49	7.49	2.816139617
# 50	268.23	264.11	4.12	1.330544838
# 100	231.72	229.51	2.21	0.53366026
# 200	217.39	216.32	1.07	0.147838315
PAN	292.60	292.19	0.41	

Percent Passing	Particle Size
100.0	75
100.0	37.5
58.1	19
13.7	4.75
10.5	3.35
8.5	2.36
5.5	1.18
2.8	0.6
1.3	0.3
0.5	0.15
0.1	0.075

CG 4/29/05

LANCASTER LABORATORIES

6688

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504568 Date: 4/28/05 Init./Emp. #: ccc/286 Batch #: 05118710401A

Pan Balance ID#: 9458

4/30/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.26	539.26
1.5 Inch	559.81	559.81
0.75 Inch	563.08	556.69
#4	466.23	446.87
#6	452.34	431.22
#8	420.18	404.27
PAN	~~419.43~~ 263.74	100.00

Time: 12:00

Organic Matter: fine + lumpy soil rocks

Odor: —

73a

#3ccc/286 4/30/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	~~342.16~~ 419.43	368.56
#30	342.16	291.51
#50	303.81	264.14
#100	247.35	229.48
#200	220.68	216.37
PAN	292.54	292.17

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 163.74 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: ~~0100~~

Verified by: DB **Date:** 5/2/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504568	04/28/05	CLC/286	163.74

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.26	539.26	0.00	100
1.5 inch	559.81	559.81	0.00	100
0.75 inch	563.08	556.69	6.39	97.17777003
# 4	466.23	446.87	19.36	88.63117653
# 6	452.34	431.22	21.12	79.30761998
# 8	420.18	404.27	15.91	72.28405063
PAN	263.74	100.00	163.74	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	419.43	368.56	50.87	49.82716987
# 30	342.16	291.51	50.65	27.46740949
# 50	303.81	264.14	39.67	9.954839023
# 100	247.35	229.48	17.87	2.066015372
# 200	220.68	216.37	4.31	0.163338822
PAN	292.54	292.17	0.37	

Percent Passing	Particle Size
100.0	75
100.0	37.5
97.2	19
88.6	4.75
79.3	3.35
72.3	2.36
49.8	1.18
27.5	0.6
10.0	0.3
2.1	0.15
0.2	0.075

5/4/05

6101

LANCASTER LABORATORIES

Oven 2
3rd Shelf
Left Side

Batch#: 05108820008

LLENS Worksheet for Moisture

Oven ID #: 7493 Time In: 1406 Time Out: 0006

Balance ID #: 9001 Std. Ref. (book/pg.): 053234 p12

#	Sample ID	Date Added	Comments	Analysis
1)	LCS 89.5%	04/18/05 09:44		
2)	4504547	04/18/05 09:44	Sludge 20A	00111
3)	4504548	04/18/05 09:44	Sludge w/rocks, roots	00111
4)	4504549	04/18/05 09:44	sludge	00111
5)	4504550	04/18/05 09:44	Sludge (gritty) w/rocks	00111
6)	4504551	04/18/05 09:44	Sludge	00111
7)	4504552	04/18/05 09:44	moist clay	00111
8)	4504553	04/18/05 09:44	gritty sludge w/rocks	00111
9)	4504554	04/18/05 09:44	Sludge 21A	00111
10)	4504555MS	04/18/05 09:44		00118
11)	4504556DUP	04/18/05 09:44		00121
12)	4504557	04/18/05 09:44	wet gritty soil w/rocks 20A	00111
13)	4504558	04/18/05 09:44	moist clay	00111
14)	4504559 -	04/18/05 09:44	Sludge (sandy)	00111
15)	4504560	04/18/05 09:44	moist clay	00111
16)	4504560DUP	04/18/05 12:09		00111
17)	4504561	04/18/05 09:44	gritty sludge w/rocks	00111
18)	4504562	04/18/05 09:44	Sandy Sludge w/rocks	00111
19)	4504563 -	04/18/05 09:44	Sludge	00111
20)	4504565 -	04/18/05 09:44	Sludge w/ rocks muddy rocks	00111
21)	4504567	04/18/05 09:44	~~wet gritty soil w/rocks~~ ③ SF 1201 4-18-05	00111
22)	4504568	04/18/05 09:44	Sludge w/rocks	00111

Signature: Scott Fuller 1201 Date: 4-18-05

Printed by 00236 on 04/18/2005 at 12:09

✓ mb 236 4/19/05

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504590

HRFRSED013A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/14/2005 08:08 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/03/2005 at 13:23
Discard: 05/18/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

013A1 SDG#: HRN02-01

07104	Grain Size to 75 um	ASTM D-422	1	04/28/2005 12:00	Catherine L Cammauf	1

8887

Batch#: 05108820008

LLENS Batch Chronology Report - Moisture

#	Operation	Instrument	Date	Time	Analyst
1)	Batch Creation		04/18/2005	09:44	00236
2)	Pre-Drying Wt.	9001	04/18/2005	13:38	01201
3)	Dry Sample Wt.	9001	04/19/2005	01:06	00182
4)	Calculate/Transmit	LL08926	04/19/2005	01:12	00182

Comments: √ cw 23c 4/19/05

0103

Printed by 00182 on 04/19/2005 at 01:12

Sample ID	BI	MAN	Rep #	Tare Wt	Sample Wt	Dry Wt	Dup Diff	%Rel Diff	% Moisture
LCS 89.5%	A			1.1586	5.0207	1.6895			89.43 100% (15)
4504547	A	00111		1.1565	8.3481	5.6443			46.24 /
4504548	A	00111		1.1532	9.1553	5.0671			57.25 /
4504549	A	00111		1.1502	8.7870	5.1563			54.41 /
4504550	A	00111		1.1551	7.4299	5.7305			38.42 /
4504551	A	00111		1.1464	6.7807	4.2785			53.81 /
4504552	A	00111		1.1449	9.8063	8.2231			27.82 /
4504553	A	00111		1.1520	8.1093	7.0256			27.57 /
4504554	A	00111		1.1509	9.0462	6.8693			36.79 /
4504555MS	A	00118							36.79 /
4504556DUP	A	00118							36.79 /
4504556DUP	A	00121		1.1413	8.1319	6.3207	0.48	1.31	36.31 / R: 1% (15)
4504557	A	00111		1.1490	9.5607	9.0298			17.57 /
4504558	A	00111		1.1460	7.4078	5.7587			37.73 /
4504559	B	00111		1.1476	8.0182	6.2532			36.32 /
4504560	B	00111		1.1487	9.0470	5.7686			48.93 /
4504560DUP	B	00111		1.1496	8.2079	5.3649	0.29	0.60	48.64 R: 1% (15)
4504561	B	00111		1.1539	7.3708	6.6932			24.85 /
4504562	B	00111		1.1404	5.7516	5.3101			27.50 /
4504563	B	00111		1.1446	8.3850	5.3588			49.74 /
4504565	B	00111		1.1492	8.5263	6.5860			36.23 /
4504567	B	00111		1.1543	8.0281	7.8935			16.05 /
4504568	B	00111		1.1517	7.6744	6.3801			31.87 /
4504590	B	00111		1.1482	8.4516	7.6207			23.42 /

Printed by 00182 on 04/19/2005 at 01:12

0194

✓ CW 236 4/19/05

Data Package

Type I Data Package

Analytical Data Report Package
for
Blasland, Bouck & Lee, Inc.

Hackensack River, NJ
Sediment Samples
Collected on 04/14/05
Sample No. 4504590-4504591

SDG# HRN02

PA Cert. # 36-037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521

Prepared by Carolyn A Schwarz

Quality Assurance Review Raymond Longacre / Alem 124

Date 5-6-05

Lancaster Laboratories
Where quality is a science.

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Sample Reference List for SDG Number HRN02 with a Data Package Type of I

03074 - Blasland, Bouck & Lee, Inc.
Hackensack River, NJ

Lab Sample Number	Lab Sample Code	Client Sample Description
4504590	013A1	HRFRSED013A-01 Grab Sediment Sample
4504591	012A1	HRFRSED012A-01 Grab Sediment Sample

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504590

HRFRSED013A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/14/2005 08:08 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/03/2005 at 13:23
Discard: 05/18/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

013A1 SDG#: HRN02-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	23.4		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	14,000.		240.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	100.		0.50	% Passing	1
07138	4.75 mm	n.a.	77.9		0.50	% Passing	1
07139	3.35 mm	n.a.	70.5		0.50	% Passing	1
07140	2.36 mm	n.a.	62.9		0.50	% Passing	1
07141	1.18 mm	n.a.	49.3		0.50	% Passing	1
07142	0.6 mm	n.a.	29.0		0.50	% Passing	1
07143	0.3 mm	n.a.	10.3		0.50	% Passing	1
07144	0.15 mm	n.a.	4.2		0.50	% Passing	1
07145	0.075 mm	n.a.	0.50	J	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Fr[illegible]	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/21/2005 19:35	Kyle W Eckenroad	1

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504591

HRFRSED012A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/14/2005 08:38 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/03/2005 at 13:23
Discard: 05/18/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

012A1 SDG#: HRN02-02*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	53.2	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	45,000.	5,500.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.8	0.50	% Passing	1
07139	3.35 mm	n.a.	98.0	0.50	% Passing	1
07140	2.36 mm	n.a.	91.9	0.50	% Passing	1
07141	1.18 mm	n.a.	62.5	0.50	% Passing	1
07142	0.6 mm	n.a.	43.0	0.50	% Passing	1
07143	0.3 mm	n.a.	30.9	0.50	% Passing	1
07144	0.15 mm	n.a.	20.5	0.50	% Passing	1
07145	0.075 mm	n.a.	11.2	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 14:44	Kyle W Eckenroad	1

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504591

HRFRSED012A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/14/2005 08:38 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/03/2005 at 13:23
Discard: 05/18/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

012A1 SDG#: HRN02-02*

07104	Grain Size to 75 um	ASTM D-422	1	04/28/2005 12:00	Catherine L Cammauf	1

8869

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 3074 Group# 939682 Sample # 4504590-91

COC # 0080181

Please print. Instructions on reverse side correspond with circled numbers.

temp 2.1 - 3.5°C

(1)
Client: Blasland Bouck & Lee Acct. #:
Project Name/#: Hackensack River PWSID #:
Project Manager: P.O.#:
Sampler: Jason Gutkowski Quote #:
Name of state where samples were collected: NJ

For Lab Use Only
FSC:
SCR #: 1202230

(2) (3) (4) (5) (6)

									TOC	Grain Size								Remarks
HRFRSED013A-01	4-14-05	0808	X				X	2	X	X								
HRFRSED012A-01	4-14-05	0838	X				X	2	X	X								
~~HRFRRB1-1~~	~~4-13-05~~	~~0900~~	~~X~~			~~X~~		~~1~~	~~X~~									
~~HRFRRB2-1~~	~~4-14-05~~	~~0840~~	~~X~~			~~X~~		~~1~~	~~X~~									

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) **Data Package Options** (please circle if required)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	4-14-05	1600	[signature]	4/13/05	0800
[signature]	4/14/05	1600			
			[signature]	4/15/05	0915

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102 Rev. 10/27/02

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: BB&L, NJ

Date of Receipt: 4/15/05

Time of Receipt: 0915

Source Code: 50-1

Shipping Container Sealed: (Y) / N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 165

Temperature of Shipping Containers	
(#1)	(#2)
Thermometer ID: 1813	Thermometer ID: 1813
Temp.: 3.5°C	Temp.: 2.1°C
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[illegible]	4/15/05	1400	Unpacking
[illegible]	4/15/05	1720	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

8883

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METHODOLOGY SUMMARY/REFERENCE

0383 TOC by Lloyd Kahn Method

Total organic carbon is determined by acidifying a sample aliquot and heating it to remove any inorganic carbon. The sample is then heated to 900°C for combustion of the remaining organic carbon. The resulting carbon dioxide from the organic carbon is detected by a nondispersive infrared detector that has been calibrated to directly display the mass of carbon dioxide detected. The mass is proportional to the mass of total organic carbon in the sample.

Reference: Lloyd Kahn

****

7104 Particle Size Distribution of Soils and Solids

A thoroughly dried soil is ground using a rubber pestle to break the aggregations. The ground soil is then sieved to determine percentage of particles passing sizes in the range 7 - 2.36 mm. Particles finer than 2.36 mm are soaked in a dispersing agent for 16 hours with particle sizes smaller than 0.075 mm determined by a sedimentation process using a hydrometer. The soil from the hydrometer test is dried and then sieved to determine percentage of particles passing sizes in the range 1.18 - 0.075 mm.

Reference: ASTM D422, Standard Test Method for Particle-Size Analysis of Soil

****

0111 Moisture (solid)

A well mixed sample is placed in a tared container and dried to constant weight in an oven at 103-105C. The decrease in weight is the total moisture.

Reference: Methods for Chemical Analysis of Water and Wastes USEPA 600/4-79-020, Method 160.3 (modified)

0884

Analysis Report

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 939682. Samples arrived at the laboratory on Friday, April 15, 2005. The PO# for this group is 099.87.002 and the release number is BBLMSALS041504.

Client Description	Lancaster Labs Number
HRFRSED013A-01 Grab Sediment Sample	4504590
HRFRSED012A-01 Grab Sediment Sample	4504591

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Blasland, Bouck & Lee, Inc.	Attn: Jamie Pritchard
1 COPY TO	Data Package Group	

Questions? Contact your Client Services Representative
Heidi L Ortenzi at (717) 656-2300.

Respectfully Submitted,

Erik J. Frederiksen
Group Leader

0005

Instrumental Analysis Data

Case Narrative
Conformance/Nonconformance Summary

Lancaster Laboratories

Where quality is a science.

CLIENT: Blasland, Bouck & Lee, Inc.
SDG: HRN02

LANCASTER LABORATORIES

INSTRUMENTAL WET CHEMISTRY

SAMPLE NUMBERS:

Sample #	Sample Code	Comments
4504590	013A1	
4504591	012A1	

ANALYSIS:
No problems were encountered during analysis.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:
QC was within specification.

DATA INTERPRETATION:
No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Sandra J. Miller Date: 4-29-05
Sandra J. Miller
Specialist

0012

QC Summary

Lancaster Laboratories

Client Name: Blasland, Bouck & Lee, Inc.
SDG: HRN02

Analyte	Batch Number	Sample Number
TOC	05109062131A	LCSS
Combustion		PBS
	05109062131B	4504590
		4504591
		P450559 U,R,D

Lancaster Laboratories

Quality Control Summary
Method Blank
Instrumental Water Quality
SDG: HRN02
Matrix: SOIL

Analyte	Analysis Date	Method	Batch Number	Blank Results	Units	MDL	LOQ
TOC Combustion	4/19/2005	TOC	05109062131	ND	mg/kg	60	170

Comments: The blank is acceptable when the result is less than the limit of quantitation.

ABBREVIATION KEY

IC = Ion Chromatography	
TOC = Total Organic Carbon	ND = Not Detected
TOX = Total Organic Halogen	J = Estimated Value < LOQ
TKN = Total Kjeldahl Nitrogen	MDL = Method Detection Limit
AK = Alpkem	LOQ = Limit of Quantitation
DOC = Dissolved Organic Carbon	NA = Not Applicable

Lancaster Laboratories

Quality Control Summary
Matrix Spike (MS)
Matrix Spike Duplicate (MSD)
SDG: HRN02
Matrix: SOIL

Sample Number	Sample Code	Analyte	Analysis Date	ME	Batch #	Sample Result	MS Spike Added	MSD Spike Added	MS Result	MSD Result	Units	MS Rec (%)	MSD Rec (%)	Acceptance Window (%)	RPD (%)	% RPD Limits
P450559	0559R	TOC Combustion	4/21/2005	TOC	05109062131B	7546	300000	NA	291500	NA	mg/kg	95	NA	71 - 136	NA	NA

Comments:

If the background and/or matrix spike/matrix spike duplicate result is less than five times the limit of quantitation, the RPD is not considered applicable and is program deleted. recovery is program deleted.

ABBREVIATION KEY	
IC = Ion Chromatography	RA = Rapid Analyzer
TOC = Total Organic Carbon	ND = Not Detected
TOX = Total Organic Halogen	ME = Method
TKN = Total Kjeldahl Nitrogen	LOQ = Limit of Quantitation
AK = Alpkem	* = Out of Specification
DOC = Dissolved Organic Carbon	NA = Not Applicable
R = Spike	M = Spike Duplicate
J = Estimated Value < LOQ	

Lancaster Laboratories

Quality Control Summary
Duplicate Sample Analysis
Instrumental Water Quality
SDG: HRN02
Matrix: SOIL

Sample Number	Sample Code	Analyte	Analysis Date	ME	Batch #	Sample Result	Duplicate Result	Units	RPD (%)	Control Limits %
P450559	0559D	TOC Combustion	4/20/2005	TOC	05109062131B	7546	5947	mg/kg	NA	NA

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

If the background and/or the duplicate result is less than five times the limit of quantitation, the RPD is not considered applicable and is program deleted.

ABBREVIATION KEY	
IC = Ion Chromatography	RA = Rapid Analyzer
TOC = Total Organic Carbon	ND = Not Detected
TOX = Total Organic Halogen	ME = Method
TKN = Total Kjeldahl Nitrogen	LOQ = Limit of Quantitation
AK = Alpkem	* = Out of Specification
DOC = Dissolved Organic Carbon	NA = Not Applicable
J = Estimated Value < LOQ	D = Duplicate

Lancaster Laboratories

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate (LCSD)
Instrumental Water Quality
SDG: HRN02
Matrix: SOIL

Batch Numbers	Analyte	Analysis Date	Method	TRUE LCS/LCSD Value	LCS Results	LCSD Results	Units	Acceptance Range	% RPD Results	% RPD Acceptance </=
05109062131	TOC Combustion	4/19/2005	TOC	5370	4308	NA	mg/kg	3030 - 7710	NA	NA

ABBREVIATION KEY

IC = Ion Chromatography
TOC = Total Organic Carbon
TOX = Total Organic Halogen
AK = Alpkem
DOC = Dissolved Organic Carbon
TKN = Total Kjeldahl Nitrogen
ND = Not Detected
ME = Method
* = Out of Specification
NA = Not Applicable
RA = Rapid Analyzer

Lancaster Laboratories

Quality Control Summary
Initial Calibration & Linearity Check
Instrumental Analysis
Total Organic Carbon Combustion
Instrument Identification: 8610
Calibration Date: 4/13/05
MATRIX: SOIL
SDG: HRN02

Correlation Coefficient: 0.9959

Batch Number	STD. 0.09 mg C	STD. 0.45 mg C	STD. 1.8 mg C	STD. 6.00 mg C
05109062131A	357	1338	4306	12694
05109062131B				

UNITS=
CTS

Continuing Calibration Verification	TRUE Value	Result (mgC)	% Recovery
CCV	3.0	3.142	105
CCV	4.5	4.743	105
CCV	3.0	3.069	102
CCV	1.5	1.637	109
CCV	4.5	4.520	100
CCV	3.0	3.000	100

Continuing Calibration Dates: 4/19/05,.4/20/05

	True Value (mg C)	Acceptance Range
CCV	Varies	+/- 10%

* = Out of Specifications

Lancaster Laboratories

Quality Control Summary
Initial Calibration & Linearity Check
Instrumental Analysis
Total Organic Carbon Combustion
Instrument Identification: 8610
Calibration Date: 4/21/05
MATRIX: SOIL
SDG: HRN02

Correlation Coefficient: 0.9966

Batch Number	STD. 0.09 mg C	STD. 0.45 mg C	STD. 1.8 mg C	STD. 6.00 mg C
05109062131B	374	1236	4442	12722

UNITS=
CTS

Continuing Calibration Verification	TRUE Value	Result (mgC)	% Recovery
CCV	4.5	4.695	104
CCV	3.0	3.024	101
CCV	1.5	1.578	105
CCV	3.0	3.125	104

Continuing Calibration Date: 4/21/05

	True Value (mg C)	Acceptance Range
CCV	Varies	+/- 10%

* = Out of Specifications

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Lancaster Laboratories

Dept.27 MDL/LOQ Values

Date Printed: 11/03/04

Analysis Number	Analysis Name	Method	True MDL	True LOQ	Units
0217	Total Kjeldahl Nitrogen	AK	0.5	1	mg/l
0219	Nitrite Nitrogen	AK	0.015	0.05	mg/l
0220/7882	Nitrate Nitrogen	AK	0.04	0.1	mg/l
0224	Chloride	IC	0.3	0.4	mg/l
0227/0345*	Total Phosphorus	AK	.08	.10	mg/l
0228	Sulfate	IC	0.3	1	mg/l
0237	Total Cyanide, EPA	AK	.005	.010	mg/l
0241	Free Cyanide	AK	0.004	0.005	mg/l
0273/0354	TOC (Water)	TOC	0.5	2	mg/l
0332/1506	Nitrite-Nitrogen	IC	0.08	0.1	mg/l
0368	Nitrate-Nitrogen	IC	0.08	0.1	mg/l
0371	Nitrocellulose, SW	AK	60	180	mg/kg
0434	Phenol (Water), EPA	AK	0.012	0.04	mg/l
0574/0555	TOX (Water)	TOX	7	20	ug/l
1123	Reactive Cyanide	AK	100	100	mg/kg
1503	TOX (Solid)	TOX	90	250	mg/kg
1504	Fluoride	IC	0.08	0.1	mg/l
1505	Bromide	IC	0.4	0.5	mg/l
1511	Total Kjeldahl Nitrogen	AK	100	300	mg/kg
1546	Soluble Phosphorus	AK	0.1	0.2	mg/l
1549	Amenable Cyanide, Waters	AK	.005	.010	mg/l
1550	Total Carbon	TC	0.6	2	mg/l
2079/0383	TOC Combustion	TOC	60	170	mg/kg
2109	Titrimetric Cyanide	NA	0.6	2	mg/l
2111/2118/2121/7	Moisture	RA	1	1	%
2353	CLP Moisture	RA	1	1	%

LEGEND

AK	= Alpkem
IC	= Ion Chromotagraphy
TOC	= Total Organic Carbon
TOX	= Total Organic Halogens
TC	= Total Carbon
RA	= Rapid Analyzer

*Note: The MDL and LOQ for moisture are the same to avoid inconsistencies between reporting types

**Note: To obtain values for Total phosphorus as PO4(#345,5894), multiply above values by 3.07

Reported MDL's are based on calculated MDLs for most compounds. Some reported MDLs are set higher based on our experience with specific compounds.

Lancaster Laboratories

Dept.27 MDL/LOQ Values

Date Printed: 11/03/04

Analysis Number	Analysis Name	Method	True MDL	True LOQ	Units
2393	Phenol (Water), SW-846	AK	0.009	0.03	mg/l
3343	CLP Cyanide (Water)	AK	4	10	ug/l
5892	Hexavalent Chromium (Sol	IC	0.2	1	mg/kg
5893/5894	Total Phosphorus (Solid)	AK	10	20	mg/kg
5895	Total CN (Solid)	AK	0.18	0.5	mg/kg
5898	Amenable Cyanide, Solids	AK	0.18	0.5	mg/kg
5910	CLP Cyanide (Solid)	AK	0.2	0.5	mg/kg
5912	Phenol (Solid)	AK	1.2	3.5	mg/kg
5991	Nitrite-Nitrogen (solid)	AK	0.2	0.6	mg/kg
5992	Nitrate-Nitrogen (solid)	AK	0.6	1.7	mg/kg
6019	Perchlorate	IC	0.7	4.0	ug/l
6467	Hexavalent Chromium (Wat	IC	5	10	ug/l
7332	Fluoride, Solid	IC	0.8	1	mg/kg
7333	Chloride, Solid	IC	3	4	mg/kg
7334	Nitrite, Solid	IC	0.8	1	mg/kg
7335	Bromide, Solid	IC	4	5	mg/kg
7336	Nitrate, Solid	IC	0.8	1.5	mg/kg
7338	Sulfate, Solid	IC	3	10	mg/kg
7547	Dissolved Organic Carbon	TOC	0.6	2	mg/l
8255	Total Cyanide, SW-846	AK	.005	.010	mg/l

LEGEND

AK = Alpkem
IC = Ion Chromotagraphy
TOC = Total Organic Carbon
TOX = Total Organic Halogens
TC = Total Carbon
RA = Rapid Analyzer

*Note: The MDL and LOQ for moisture are the same to avoid inconsistencies between reporting types

**Note: To obtain values for Total phosphorus as PO4(#345,5894), multiply above values by 3.07

Reported MDL's are based on calculated MDLs for most compounds. Some reported MDLs are set higher based on our experience with specific compounds.

Raw Data

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Raw Data Notebook
Total Organic Carbon Solids Module

Date: 4/13/05

Instrument #: 8610

R^2: 0.9959

Analyst: ~~[illegible]~~ 521 / KWE1505

Sucrose Soln Lot #: 042504

Run #: 0 5 1 0 3 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
1	Blank	-0.101	0				1300			
2	0.09 Std	357 cts	0.3 µl				1308			
3	0.45	1338	1.5				1317			
4	1.80	4306	6.0				1325			
5	6.00	12694.	20.0				1333			
6	CCV 3.0	3.206	10. µl				1344		rec=107% (IS)	
7	CCB	-0.095	0				1351			
8	FBS	-0.095	0	0	1	170	1359	05102150532A	CLOQ (IS)	
9	LCSS	0.939	192.9	4868	5.18	881.	1408		tr=5370. rec=91%	
10	CCV 1.5	1.573	5. µl	(IS)			1420		rec= 105%	
11	CCB	-0.095	0.00				1428			
12	4494753	0.447	42.6	10493	23.5	3991	1437	05102150532A	14596	TGE31-09
13		0.966	53.5 ~~49.6~~	~~22207~~ 16056	18.7 ~~23.0~~	~~3968~~ 3179	1446		$\bar{x}$=~~16374~~ mg/kg	
14		0.890	58.4 ~~54.2~~	~~16421~~ 15240	~~18.5~~ 17.1	~~3137~~ 2907	1454		EF/LS 4/14/05	

EF/LS 4/14/05 EF/LS 4/14/05

Verified by: EF/LS

Date: 4/14/05

1941.02

054817 54

Run# 05103A
4/13/05 → 4/14/05

4/14/05

IR Failure: NO OUTPUT
IR Failure: NO OUTPUT

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 12:52:37 2005

#0001 13:00:02 TC SPL#01 0.000 mg 0000000 cts -000.101 mgC 0.00 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:00:28 2005

TOC Combustion

#0001 13:08:21 TC STD#01 000.090 mgC 0000357 cts

CALIBRATION RESULTS:
STD TYPE = TC

STD#1 = 00.090 mgC	1 reps	Avg Area =	357.0 cts	%rsd =	0.00
STD#2 = 00.450 mgC	1 reps	Avg Area =	1263.0 cts	%rsd =	0.00
STD#3 = 01.800 mgC	1 reps	Avg Area =	3914.0 cts	%rsd =	0.00
STD#4 = 06.000 mgC	1 reps	Avg Area =	10929.0 cts	%rsd =	0.00

RF = 537.509 ugC/k-cts
R2 = 0.9920
OFFSET = 236 cts (-0.127 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:08:50 2005

#0001 13:17:00 TC STD#02 000.450 mgC 0001338 cts

CALIBRATION RESULTS:
STD TYPE = TC

STD#1 = 00.090 mgC	1 reps	Avg Area =	357.0 cts	%rsd =	0.00
STD#2 = 00.450 mgC	1 reps	Avg Area =	1338.0 cts	%rsd =	0.00
STD#3 = 01.800 mgC	1 reps	Avg Area =	3914.0 cts	%rsd =	0.00
STD#4 = 06.000 mgC	1 reps	Avg Area =	10929.0 cts	%rsd =	0.00

RF = 536.405 ugC/k-cts
R2 = 0.9892
OFFSET = 247 cts (-0.133 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:17:30 2005

#0001 13:25:14 TC STD#03 001.800 mgC 0004306 cts

CALIBRATION RESULTS:
STD TYPE = TC

STD#1 = 00.090 mgC	1 reps	Avg Area =	357.0 cts	%rsd =	0.00
STD#2 = 00.450 mgC	1 reps	Avg Area =	1338.0 cts	%rsd =	0.00
STD#3 = 01.800 mgC	1 reps	Avg Area =	4306.0 cts	%rsd =	0.00
STD#4 = 06.000 mgC	1 reps	Avg Area =	10929.0 cts	%rsd =	0.00

RF = 523.536 ugC/k-cts
R2 = 0.9822

R2 = 0.9892
OFFSET = 247 cts (-0.133 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:17:30 2005

#0001 13:25:14 TC STD#03 001.800 mgC 0004306 cts

CALIBRATION RESULTS:
STD TYPE = TC

LANCASTER LABORATORIES

STD#1 = 00.090 mgC	1 reps	Avg Area =	357.0 cts	%rsd =	0.00
STD#2 = 00.450 mgC	1 reps	Avg Area =	1338.0 cts	%rsd =	0.00
STD#3 = 01.800 mgC	1 reps	Avg Area =	4306.0 cts	%rsd =	0.00
STD#4 = 06.000 mgC	1 reps	Avg Area =	10929.0 cts	%rsd =	0.00

RF = 523.536 ugC/k-cts
R2 = 0.9822
OFFSET = 249 cts (-0.131 mgC)

TOC Combustion

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:25:43 2005

#0001 13:33:43 TC STD#04 006.000 mgC 0012694 cts

CALIBRATION RESULTS:
STD TYPE = TC

STD#1 = 00.090 mgC	1 reps	Avg Area =	357.0 cts	%rsd =	0.00
STD#2 = 00.450 mgC	1 reps	Avg Area =	1338.0 cts	%rsd =	0.00
STD#3 = 01.800 mgC	1 reps	Avg Area =	4306.0 cts	%rsd =	0.00
STD#4 = 06.000 mgC	1 reps	Avg Area =	12694.0 cts	%rsd =	0.00

RF = 466.516 ugC/k-cts
R2 = 0.9959
OFFSET = 204 cts (-0.095 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:34:12 2005

#0001 13:44:03 TC SPL#01 3.000 mg 0007076 cts 003.206 mgC 106.86 %C
6

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:44:31 2005

#0001 13:51:52 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C
7

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 13:52:21 2005

#0001 13:59:40 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C
8

0826

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 13 14:00:08 2005

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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 4/19/05

Instrument #: 8610

R^2: 0.9959

Analyst: ~~[illegible]~~ 421

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 3 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
57	LCSS	0.759	201.2	3772. ✓	4.97 ~~201.20~~	845.	1237	05109062132A	+V=5370. rec=70%	
58	4501826-U	0.331	208.3	1589. ✓	4.80	814.	1244			
59	-R	3.286	31.6	103987. ✓	31.6	5380.	1253		SA=94937. rec=108%	
60	-D	0.270	206.1	1310. ✓	4.85	825.	1301		pd	
61	4501830	2.804	611.6	4585. ✓	1.64	278.	1308			
62	CCV 3.0	3.142	10. ml				1316		rec=105%	
63	CCB	-0.095	0				1324			
64	4501831 ✓	0.385	888.9	433.	1.12	191.	1332	05109062132A		
65	1832 ✓	1.167	721.9	1617.	1.39	235.	1339			
66	1833 ✓	0.392	414.5	946.	2.41	410.	1347			
67	1834 ✓	1.065	699.7	1522.	1.43	243.	1355			
68	1835 ✓	0.934	77.6	12036.	12.9	2191.	1403			
69	1836 ✓	0.429	689.7	622.	1.45	246.	1410			
70	1837 ✓	0.446	559.2	798.	1.79	304.	1418			

Verified by: PB 609

Date: 4/21/05

1941.02

055460 2

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2425 New Holland Pike • Lancaster, PA 17601

Raw Data Notebook
Total Organic Carbon Solids Module

Date: 4/19/05

Instrument #: 8610

R^2: 0.9959

Analyst: [illegible]/KWETSOS

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 3 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
71	4501838 ✓	0.6660	629.3	1049	1.59	270.	1426	051906213 2A		
72	PBS ✓	-0.095	0	0.00	1	170	1434	051906213 1A	<LOQ (IS)	
73	Less ✓	0.844	195.9	4308	5.10	868.	1441	✓	FV=5390. recz 86%	
74	ccv 4.5	4.743	15, ml	(IS)	→	→	1451		rec=105% (IS)	
75	CCB	-0.095	0.00	↓	→	→	1459		<LOQ ↓	
76	4504647 ✓	0.572	48.4	11818	20.7	3513	1512	051906213 1A		HRNG1-01
77	4648 ✓	0.973	51.9	18748	19.3	3276	1520			-02
78	4649 ✓	0.673	52.5	12819	19.1	3238	1528			03
79	4660	6.201	~~907.3~~ 903.1	6866	1.11	188	1536		QR-REPEAT	-04
80	4661 ✓	0.661	50.4	13115	19.8	3373	1544			-05
81	4552	0.146	56.7	2557	17.6	2998	1551		<LOQ - REPEAT	06
82	4553 ✓	0.539	121.8	4426	8.21	1396	1559			-07
83	4554-U ✓	0.570	55.9	10197	17.9	3041	1607			-08
84	4555-RE ✓	2.753	14.2	193873	70.4	11972	1617	↓	SA=21126 mg/kg 2nd 89%	-08

Verified by: [illegible] Date: 4/21/05

Analysis Date: Tue Apr 19 13:09:19 2005

#0001 13:16:36 TC SPL#01 3.000 mg 0006940 cts 003.142 mgC 104.74 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:17:02 2005

#0001 13:24:20 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:24:46 2005

TOC Combustion

#0001 13:32:03 TC SPL#01 888.900 mg 0001030 cts 000.385 mgC 0.04 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:32:29 2005

#0001 13:39:47 TC SPL#01 721.900 mg 0002706 cts 001.167 mgC 0.16 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:40:13 2005

#0001 13:47:32 TC SPL#01 414.500 mg 0001045 cts 000.392 mgC 0.09 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:47:58 2005

#0001 13:55:17 TC SPL#01 699.700 mg 0002487 cts 001.065 mgC 0.15 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 13:55:43 2005

#0001 14:03:02 TC SPL#01 77.600 mg 0002207 cts 000.934 mgC 1.20 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:03:28 2005

#0001 14:10:47 TC SPL#01 689.700 mg 0001125 cts 000.429 mgC 0.06 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:11:13 2005

#0001 14:18:32 TC SPL#01 559.200 mg 0001161 cts 000.446 mgC 0.08 %C

0829

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:18:58 2005

#0001 14:18:32 TC SPL#01 559.200 mg 0001161 cts 000.446 mgC 0.08 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:18:58 2005

#0001 14:26:17 TC SPL#01 629.300 mg 0001620 cts 000.660 mgC 0.10 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:26:46 2005

TOC
Combustion

#0001 14:34:07 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:34:35 2005

#0001 14:41:55 TC SPL#01 195.900 mg 0002013 cts 000.844 mgC 0.43 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:42:22 2005

#0001 14:51:33 TC SPL#01 4.500 mg 0010371 cts 004.743 mgC 105.40 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 14:52:00 2005

#0001 14:59:24 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:05:06 2005

#0001 15:12:30 TC SPL#01 48.400 mg 0001431 cts 000.572 mgC 1.18 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:12:59 2005

#0001 15:20:18 TC SPL#01 51.900 mg 0002290 cts 000.973 mgC 1.87 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:20:47 2005

#0001 15:28:06 TC SPL#01 52.500 mg 0001646 cts 000.673 mgC 1.28 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Tue Apr 19 15:28:34 2005

#0001 15:36:00 TC SPL#01 [illegible]

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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/19/05 - 04/20/05

Instrument #: 8610

R^2: 0.9959

Analyst: KWE1506

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 3 A

*③ KWE1505 04/19/05

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
12	~~CCB~~ CCV1.5	1.856	5.0 mL ~~0.00~~	(IS)			2016		%Rec=124% (IS)	
13	CCV 3.0	3.069	10.0 mL	(IS)			1337		04/20/05 %Rec= 102% (IS)	
14	CCB	-0.095	0.00	↓			1347		<LOQ ↓	
15	4504563 ✓	0.757	46.3	16350 ✓	21.6	3672	1355	05109062131B		HRN01-15
16	4504565 ✓	0.422	45.2	9336	22.1	3761	1403			-AFD
17	4504567 ✓	2.984	644.8	4628	1.55	264	1411			-19
18	4504568	0.073	56.1	1301 <LOQ	17.8	3030	1428		<LOQ - REPEAT	-20*
19	4504590 ③ 4/21/05	~~0.15~~ .202	136.1	1102 <LOQ	7.35	1249	1436		↓	HRN02-01
20	4504591 ✓	0.498	23.5	21191	42.6	7234	1444			-02*
21	PBS ✓	-0.095	0.00	0.00	1.00	170	1452	05109150533A	<LOQ (IS)	
22	LCSS ✓	1.159	200.0	5795	5.00	850	1500	↓	~~Tr=6370 mg/kg~~ %Rec= 108% (IS)	
23	4504550	32.967	368.7	89414	2.71	461	1508	05109062131A	OR - REPEAT	HRN01-04
24	CCV 1.5	1.637	5.0 mL	(IS)			1520		%Rec= 109% (IS)	
25	CCB	-0.095	0.00	↓			1531		<LOQ ↓	

Verified by: BJ609

Date: 4/21/05

1941.02

055460 5

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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/20/05

Instrument #: 8610

R^2: 0.9959

Analyst: KWE7505

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 3 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
40	4502421	1.079	48.2	22386	20.7	3527	1809	0510915053~~3A~~		ASW31-06
41	2422	8.179	56.5	144761	17.7	3009	1817			-07
42	2423	7.838	66.7	117511	16.0	2549	1825			-08
43	2424	1.148	55.1	20835	18.1	3085	1833			-09
44	2425	1.571	50.9	30864	19.6	3340	1841			-10
45	PBS	-0.095	0.00	0.00	1.00	170	1857	0511015053 1A	*③ KWE7505 04/20/05	~~-11~~
46	LCSS	1.363	202.4	6685.	4.94	840	1905		+V=5370, rec=124%	
47	4504550	0.741	78.8	9404	12.7	2157	1914	0510906213 1A		HRN01-04
48	CCV 4.6	4.520	15.0mL	(IS)			1922		%Rec=100% (IS)	
49	CCB	-0.095	0.00				1933		<LOQ	
50	~~44~~ 4504556-D	0.437	68.4	6385	14.6	2485	1943	0510906213 1A	pd	HRN01-08DUP
51	4557	0.073	115.4	633	8.67	1474	1951	0510906213 1B	<LOQ REPEAT	-09
52	4560	0.501	55.7	8993	18.0	3052	1958			~~-10~~ -12 *② KWE7505 04/20/05
53	4559-U	0.612	81.1	7546	12.3	2096	2006			~~-10~~ -11

③ KWE 7505 04/20/05

Verified by: [signature] 6/09

Date: 4/21/05

1941.02

055460 7

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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/20/05

Instrument #: 8610

R^2: 0.9959

Analyst: KWE1505

Sucrose Soln Lot #: 062504

Run #: 0 5 1 0 3 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
54	4504559-D	0.333	56.0	~~56~~ 5947 KWE1505 4/20/05	17.9	3036	2015	0510906213113	pd	HRN01-11
55	4504568	0.246	87.7	2793 ✓	11.4	1938	2023	↓		↓ -20*
56	4504590	0.087	60.6	1436	16.5	2805	2031	↓	<LOQ - REPEAT	HRN02-01
57	4502426	5.619	49.9	12605 ✓	20.0	3407	2039	0510160531A		ASW31-11
~~58~~	~~4502428~~		~~91.0~~		~~11.0~~	~~1868~~		↓		↓ -13
~~59~~	~~4502429~~		~~88.4~~		~~11.3~~	~~1923~~		↓		↓ -14
58	CCV3.0	3.000	10.0 µL	(IS)			2048		%Rec = 100%	
59	CCB	-.095								

KWE 1505 4/20/05

Verified by: PB/605

Date: 4/25/05

1941.02

055460 8

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 13:29:17 2005

#0001 13:37:15 TC SPL#01 3.000 mg 0006782 cts 003.069 mgC 102.28 %C

LANCASTER LABORATORIES

TOC Combustion

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 13:40:08 2005

#0001 13:47:34 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 13:48:02 2005

#0001 13:55:23 TC SPL#01 46.300 mg 0001827 cts 000.757 mgC 1.63 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 13:55:52 2005

#0001 14:03:16 TC SPL#01 45.200 mg 0001109 cts 000.422 mgC 0.93 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:03:45 2005

#0001 14:11:06 TC SPL#01 644.800 mg 0006600 cts 002.984 mgC 0.46 %C

SOLIDS: EXTERNALLY ABORTED

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:21:29 2005

#0001 14:28:53 TC SPL#01 56.100 mg 0000360 cts 000.073 mgC 0.13 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:29:19 2005

#0001 14:36:35 TC SPL#01 136.100 mg 0000637 cts 000.202 mgC 0.15 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:37:02 2005

#0001 14:44:24 TC SPL#01 23.500 mg 0001271 cts 000.498 mgC 2.12 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:44:51 2005

#0001 14:52:21 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:44:51 2005

#0001 14:52:21 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 14:52:48 2005

TOC Combustion

#0001 15:00:19 TC SPL#01 200.000 mg 0002688 cts 001.159 mgC 0.58 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:00:46 2005

#0001 15:08:08 TC SPL#01 368.700 mg 0070870 cts 032.967 mgC 8.94 %C

SOLIDS: EXTERNALLY ABORTED

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:13:18 2005

#0001 15:20:51 TC SPL#01 1.500 mg 0003713 cts 001.637 mgC 109.12 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:23:09 2005

#0001 15:31:27 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:31:53 2005

#0001 15:40:18 TC SPL#01 139.600 mg 0001555 cts 000.630 mgC 0.45 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:40:46 2005

#0001 15:48:02 TC SPL#01 352.400 mg 0001289 cts 000.506 mgC 0.14 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:48:29 2005

#0001 15:55:51 TC SPL#01 10.600 mg 0000000 cts -000.095 mgC -0.90 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 15:56:18 2005

8835

#0001 16:03:52 TC SPL#01 86.100 mg 0010677 cts 004.886 mgC 5.67 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:50:18 2005
#0001 18:57:42 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 18:58:09 2005

TOC Combustion

#0001 19:05:45 TC SPL#01 202.400 mg 0003105 cts 001.353 mgC 0.67 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:06:11 2005

#0001 19:14:28 TC SPL#01 78.800 mg 0001793 cts 000.741 mgC 0.94 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:14:56 2005

#0001 19:22:38 TC SPL#01 4.500 mg 0009894 cts 004.520 mgC 100.45 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:26:36 2005

#0001 19:33:59 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:34:25 2005

#0001 19:43:15 TC SPL#01 68.400 mg 0001141 cts 000.437 mgC 0.64 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:43:41 2005

#0001 19:51:00 TC SPL#01 115.400 mg 0000361 cts 000.073 mgC 0.06 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:51:27 2005

#0001 19:58:46 TC SPL#01 81.100 mg 0001278 cts 000.501 mgC 0.62 %C

8036

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:59:13 2005

#0001 20:06:48 TC SPL#01 81.100 mg 0001517 cts 000.612 mgC 0.76 %C

TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:51:27 2005

#0001 19:58:46 TC SPL#01 81.100 mg 0001278 cts 000.501 mgC 0.62 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 19:59:13 2005

#0001 20:06:48 TC SPL#01 81.100 mg 0001517 cts 000.612 mgC 0.76 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:07:15 2005

TOC Combustion

#0001 20:15:07 TC SPL#01 55.700 mg 0000918 cts 000.333 mgC 0.60 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:15:33 2005

#0001 20:23:17 TC SPL#01 87.700 mg 0000730 cts 000.245 mgC 0.28 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:23:46 2005

#0001 20:31:05 TC SPL#01 60.600 mg 0000390 cts 000.087 mgC 0.14 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:31:33 2005

#0001 20:39:04 TC SPL#01 49.900 mg 0012248 cts 005.619 mgC 11.26 %C

SOLIDS: EXTERNALLY ABORTED

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:40:23 2005

#0001 20:48:12 TC SPL#01 3.000 mg 0006636 cts 003.000 mgC 100.01 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Wed Apr 20 20:48:53 2005

#0001 20:56:26 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

IR Failure: NO OUTPUT

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2425 New Holland Pike • Lancaster, PA 17601

Raw Data Notebook
Total Organic Carbon Solids Module

Date: 4/21/05

Instrument #: 8610

R^2: 0.9966

Analyst: [illegible]621

Sucrose Soln Lot #: 062504

Run #: 0 5 1 1 1 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
1	Blank	-0.095	0				0722			
2	0.09 Std	374 cts	0.3ml				0731			
3	0.45	1736	1.5				0741			
4	1.80	4442	6.0				0749			
5	6.00	12722.	20.0				0758			
6	ccv 3.0	3.114	10.ml				0808		%R=104%	
7	ccb	-0.095	0				0819	⑦ 4-21-05		
8	4502428	1.336	91.0	14681.	11.0	1868.	0827	051101505 31A		ASW31
9	4502429	4.731	88.4	53518.	11.3	1923.	0835			
10	4502430-4	6.365	76.2	OR	13.1	2231.	0842			
11	2431-R	4.953	11.2	442232.	89.3	15179.	0850		SA=267857. %R=	
12	2433-D	7.437	51.6	OR	19.4	3295.	0858			
13	2434	0.726	55.4	13105.	18.1	3069.	0906			
14	2435	3.479	49.2	70711.	20.3	3455.	0914			

Verified by: [signature] Date: 4/25/05

Run#05111A 4/21/05 → 4/22/05 [illegible]

JB/609
4/25/05

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:10:40 2005

SOLIDS: EXTERNALLY ABORTED

TOC Combustion

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:15:34 2005

#0001 07:22:59 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:23:26 2005

#0001 07:31:43 TC STD#01 000.090 mgC 0000374 cts

CALIBRATION RESULTS:
STD TYPE = TC
STD#1 = 00.090 mgC 1 reps Avg Area = 374.0 cts %rsd = 0.00
STD#2 = 00.450 mgC 1 reps Avg Area = 1338.0 cts %rsd = 0.00
STD#3 = 01.800 mgC 1 reps Avg Area = 4306.0 cts %rsd = 0.00
STD#4 = 06.000 mgC 1 reps Avg Area = 12694.0 cts %rsd = 0.00
RF = 467.630 ugC/k-cts
R2 = 0.9963
OFFSET = 219 cts (-0.103 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:32:11 2005

#0001 07:41:32 TC STD#02 000.450 mgC 0001236 cts

CALIBRATION RESULTS:
STD TYPE = TC
STD#1 = 00.090 mgC 1 reps Avg Area = 374.0 cts %rsd = 0.00
STD#2 = 00.450 mgC 1 reps Avg Area = 1236.0 cts %rsd = 0.00
STD#3 = 01.800 mgC 1 reps Avg Area = 4306.0 cts %rsd = 0.00
STD#4 = 06.000 mgC 1 reps Avg Area = 12694.0 cts %rsd = 0.00
RF = 468.771 ugC/k-cts
R2 = 0.9978
OFFSET = 204 cts (-0.096 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:42:00 2005

#0001 07:49:53 TC STD#03 001.800 mgC 0004442 cts

0039

CALIBRATION RESULTS:
STD TYPE = TC
STD#1 = 00.090 mgC 1 reps Avg Area = 374.0 cts %rsd = 0.00
STD#2 = 00.450 mgC 1 reps Avg Area = 1236.0 cts %rsd = 0.00

STD#3 = 01.800 mgC 1 reps Avg Area = 4306.0 cts %rsd = 0.00
STD#4 = 06.000 mgC 1 reps Avg Area = 12694.0 cts %rsd = 0.00
RF = 468.771 ugC/k-cts
R2 = 0.9978
OFFSET = 204 cts (-0.096 mgC)

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:42:00 2005

#0001 07:49:53 TC STD#03 001.800 mgC 0004442 cts

TOC Combustion

CALIBRATION RESULTS:
STD TYPE = TC
STD#1 = 00.090 mgC 1 reps Avg Area = 374.0 cts %rsd = 0.00
STD#2 = 00.450 mgC 1 reps Avg Area = 1236.0 cts %rsd = 0.00
STD#3 = 01.800 mgC 1 reps Avg Area = 4442.0 cts %rsd = 0.00
STD#4 = 06.000 mgC 1 reps Avg Area = 12694.0 cts %rsd = 0.00
RF = 465.303 ugC/k-cts
R2 = 0.9964
OFFSET = 205 cts (-0.096 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:50:22 2005

#0001 07:58:11 TC STD#04 006.000 mgC 0012722 cts

CALIBRATION RESULTS:
STD TYPE = TC
STD#1 = 00.090 mgC 1 reps Avg Area = 374.0 cts %rsd = 0.00
STD#2 = 00.450 mgC 1 reps Avg Area = 1236.0 cts %rsd = 0.00
STD#3 = 01.800 mgC 1 reps Avg Area = 4442.0 cts %rsd = 0.00
STD#4 = 06.000 mgC 1 reps Avg Area = 12722.0 cts %rsd = 0.00
RF = 464.503 ugC/k-cts
R2 = 0.9966
OFFSET = 204 cts (-0.095 mgC)

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 07:58:39 2005

#0001 08:08:32 TC SPL#01 3.000 mg 0006908 cts 003.114 mgC 103.79 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 08:09:00 2005

#0001 08:16:21 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 08:19:48 2005

0848

#0001 08:27:14 TC SPL#01 91.000 mg 0003080 cts 001.336 mgC 1.47 %C

OI Analytical

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Raw Data Notebook
Total Organic Carbon Solids Module

Date: 4/21/05

R^2: 0.9966

Instrument #: 8610

Analyst: ~~EB~~ GJ/GWEIGEL

Sucrose Soln Lot #: 062504

Run #: 0 5 1 1 1 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
29	CCV 3.0	3.138	10. ml				1138	~~Batch 4-21-05~~ ②	rec=105%	
30	CCB	-0.095	0				1146			
31	4504843	11.644	48.4	OR	20.7	3512.	1153	05110150531B		AS1137
32	4844	7.100	65.1	↓	15.4	2611.	1201			
33	4845	0.680	50.5	13465. ✓	19.8	3366.	1209			
34	4846	3.887	43.9	88405. ✓	22.8	3812.	1216			
35	4848	0.875	50.0	17500. ✓	20.0	3400.	1224			
36	4849	1.225	59.2	20693. ✓	16.9	2872.	1232	↓		↓
37	CCV 4.5	4.695	15. ml				1243		rec=104%	
38	CCB	-0.095	0				1251			
39	PBS	-0.095	0.00	0.00	1.00	170	1411		<LOQ ⑤	
40	LCSS	1.032	197.4	~~5225~~	③ 506	861	1419		TV=5370 mg/kg rec=97% ⑤	
41	4504859-R	2.915	10	291500	100	17000	1428	05109062I31B	SA=300000 mg/kg rec=78% ⑤	HRN01-11
42	4504857	3.641	288.4	12625	3.47	589	1436	↓	95 ⑤ 5/13/05 4/25/05	HRN01-09

Verified by: RB 4/29 Date: 4/25/05

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/21/05

R^2: 0.9966

Instrument #: 8610

Analyst: KWE1505

Sucrose Soln Lot #: 062504

Run #: 0 4 1 1 1 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
43	4504590	-0.095	214.3	0.00 CLOQ	4.67	793	1443	05109062131B	CLOQ - REPEAT	HRN02-01
44	2418	2.323	12.4	187339	80.7	13710	1451	05109150533A		ASW31-03
45	2422	2.911	16.0	181938	62.5	10625	1459			-07
46	2423	1.489	13.6	109485	73.5	12500	1507			-08
47	2428	0.998	49.4	20202	20.2	3441	1514	05110150531A		-13
48	CCV 3-0	3.024	10.0 µL	(JS)			1523		%Rec = 101% (JS)	
49	CCB	-0.95	0.00				1536		CLOQ	
50	4502429	1.728	38.4	45000	26.0	4427	1544	05110150531A		ASW31-14
51	2430-U	4.397	32.3	136130	31.0	5263	1552			-15BKG
52	2431-R	3.829	8.1	472716	123	20988	1600		SA = 370380 mg/kg %Rec = 91% (JS)	-15MS
53	2433-D	4.34	~~27.3~~ 27.3	*(3) KWE1505 04/21/05 158974	36.6	6227	1608		r=15	-15DUP
54	2434	1.218	81.5	14945	12.3	2086	1616			-16
55	2435	2.716	28.8	94306	34.7	5903	1624			-17
56	2436	3.688	26.3	140228	38.0	6464	1632			-18

Verified by: BL609

Date: 4/25/05

Lancaster Laboratories
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Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/21/05

R^2: 0.9966

Instrument #: 8610

Analyst: KWE1505

Sucrose Soln Lot #: 062504

Run #: 0 5 1 1 0 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
57	4502437	2.193	36.7	59755 ✓	27.3	4632	1639	0511015053 1A		ASW31-19
58	2438	3.248	16.2	200494 ✓	61.7	10494	1647			-20
59	2439	1.559	13.4	116343 ✓	74.6	12687	1655			-21
60	CCY 1.5	1.578	6.0 µL	IS			1703		%Rec = 105% IS	
61	CCB	~~-0.095~~ ~~0.96~~	0.00				1741		<LOQ	
62	4504843	0.567	6.6	85909 ✓	151.2	25758	1749	0511015053 1B		ASW32-05
63	4504844	2.785	19.5	142821 ✓	51.3	8718	1757			-06
64	~~4504490~~ 4504590	13.318	205.6	64762	4.86	827	1927	0510906213 1B		HRN02-01
65	4504590	3.392	325.8	10411 ✓	3.07	522	1938			
66	PBS	-0.098	0.00	0.00 ✓	1.00	170	1948	0511115053 1A	<LOQ IS	
67	LCSS	0.996	203.4	4897 ✓	4.92	836	1952		TV=5370 mg/kg %Rec=91%	
68	4504850-U	0.911	23.5	38766 ✓	42.6	7234	2000			
69	-R	3.173	6.8	~~3.1~~ 46668	147	25000	2008		SA=941180 mg/kg %Rec=97% IS	
70	-D	1.427	30.3	47096 ✓	33	5611	2016		1:19 OS	

Verified by: B/609

Date: 4/25/05

1941.02

055460 13

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2425 New Holland Pike • Lancaster, PA 17601

Raw Data Notebook
Total Organic Carbon Solids Module

Date: 04/21/05 → 4/22/05

Instrument #: 8610

R^2: 0.9966

Analyst: [illegible] / [illegible]

Sucrose Soln Lot #: 062504

Run #: 0 5 1 1 0 A

Inj.#	Sample Number	Raw Result (mgC)	Weight (mg) or µL used	Calc. Result (mg/kg)	Factor	LOQ	Time	Batch Number	Comments	SDG
71	4504851	2.734	35.6	76798 ✓	28.09	4775	2025	051111150531A		
72	ccv 3.0	3.125	10.0mL	IS			2033		%Rec=104% IS	
73	CCB	-0.095	0.00	↓			2050		CLOQ ↓	
1	ccv 3.0	3.207	10. ml				0827	4-22-05	rec = 107%	
2	CCB	-0.095	0				0835			
3	4504852	1.715	34.5	49710. ✓	29.0	[illegible] 4-22-05 42928.	0847	051111150531A		ASW32
4	4853	3.344	52.8	63333. ✓	18.9	3220.	0855			
5	4854	0.521	36.0	14472. ✓	27.8	4722.	0902			
6	4855	1.123	32.6	34448. ✓	30.7	5215.	0910			
7	4938	1.727	157.1	10993. ✓	6.37	1082.	0918			
8	6571	2.083	62.9	33116. ✓	15.9	2703.	0926			
9	6574	1.611	51.0	31588. ✓	19.6	3333.	0934			
10	6609	1.145	37.9	30211. ✓	26.4	4485.	0941			ASW33
11	6610-U	1.859	39.3	47303. ✓	25.4	4326.	0949	051111150531B		

Verified by: [illegible] 609 Date: 4/25/05

1941.02

055460 14

Analysis Date: Thu Apr 21 12:25:05 2005

#0001 12:32:21 TC SPL#01 59.200 mg 0002843 cts 001.225 mgC 2.07 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 12:32:48 2005

TOC Combustion

#0001 12:43:40 TC SPL#01 4.500 mg 0010312 cts 004.695 mgC 104.33 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 12:44:07 2005

#0001 12:51:23 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 13:55:50 2005

SOLIDS: EXTERNALLY ABORTED

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:04:28 2005

#0001 14:11:51 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:12:18 2005

#0001 14:19:35 TC SPL#01 197.400 mg 0002426 cts 001.032 mgC 0.52 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:20:02 2005

#0001 14:28:09 TC SPL#01 10.000 mg 0006480 cts 002.915 mgC 29.15 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:28:36 2005

#0001 14:35:57 TC SPL#01 288.400 mg 0008044 cts 003.641 mgC 1.26 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:36:24 2005

#0001 14:43:45 TC SPL#01 214.300 mg 0000000 cts -000.095 mgC -0.04 %C

0045

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:44:12 2005

#0001 14:51:31 TC SPL#01 12.400 mg 0005206 cts 002.323 mgC 18.73 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:44:12 2005

#0001 14:51:31 TC SPL#01 12.400 mg 0005206 cts 002.323 mgC 18.73 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:51:58 2005

TOC
Combustion

#0001 14:59:15 TC SPL#01 16.000 mg 0006471 cts 002.911 mgC 18.19 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 14:59:42 2005

#0001 15:07:00 TC SPL#01 13.600 mg 0003411 cts 001.489 mgC 10.95 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:07:26 2005

#0001 15:14:44 TC SPL#01 49.400 mg 0002353 cts 000.998 mgC 2.02 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:15:11 2005

#0001 15:23:06 TC SPL#01 3.000 mg 0006716 cts 003.024 mgC 100.82 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:28:49 2005

#0001 15:36:12 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:36:39 2005

#0001 15:44:48 TC SPL#01 38.400 mg 0003925 cts 001.728 mgC 4.50 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:45:16 2005

#0001 15:52:36 TC SPL#01 32.300 mg 0009670 cts 004.397 mgC 13.61 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 15:53:02 2005

8846

#0001 16:00:58 TC SPL#01 8.100 mg 0008448 cts 003.829 mgC 47.27 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11

Analysis Date: Thu Apr 21 16:48:06 2005

#0001 16:55:26 TC SPL#01 13.400 mg 0003561 cts 001.559 mgC 11.63 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 16:55:55 2005

#0001 17:03:15 TC SPL#01 1.500 mg 0003603 cts 001.578 mgC 105.23 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 17:34:01 2005

TOC Combustion

#0001 17:41:26 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 17:41:52 2005

#0001 17:49:16 TC SPL#01 6.600 mg 0001425 cts 000.567 mgC 8.59 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 17:49:42 2005

#0001 17:57:01 TC SPL#01 19.500 mg 0006201 cts 002.785 mgC 14.28 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 19:19:48 2005

#0001 19:27:12 TC SPL#01 205.600 mg 0028870 cts 013.315 mgC 6.48 %C

OI Analytical
Analysis Date: Thu Apr 21 19:29:41 2005 TOC Solids V3.0 Beta - Rev 11

#0001 19:35:08 TC SPL#01 325.800 mg 0007507 cts 003.392 mgC 1.04 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 19:37:40 2005

#0001 19:45:05 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 19:45:32 2005

#0001 19:52:51 TC SPL#01 203.400 mg 0002348 cts 000.996 mgC 0.49 %C

8047

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 19:53:20 2005

#0001 20:00:39 TC SPL#01 23.500 mg 0002165 cts 000.911 mgC 3.87 %C

#0001 20:08:45 TC SPL#01 6.800 mg 0007036 cts 003.173 mgC 46.66 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 20:09:15 2005

#0001 20:16:35 TC SPL#01 30.300 mg 0003278 cts 001.427 mgC 4.71 %C

LANCASTER LABORATORIES

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 20:17:04 2005

TOC Combustion

#0001 20:25:25 TC SPL#01 35.600 mg 0006091 cts 002.734 mgC 7.68 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 20:25:54 2005

#0001 20:33:30 TC SPL#01 3.000 mg 0006933 cts 003.125 mgC 104.18 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Thu Apr 21 20:42:37 2005

#0001 20:50:02 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

IR Failure: NO OUTPUT
Printer Error

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Fri Apr 22 08:20:33 2005

#0001 08:27:58 TC SPL#01 3.000 mg 0007108 cts 003.207 mgC 106.88 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Fri Apr 22 08:28:25 2005

#0001 08:35:45 TC SPL#01 0.000 mg 0000000 cts -000.095 mgC 0.00 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Fri Apr 22 08:39:47 2005

#0001 08:47:12 TC SPL#01 34.500 mg 0003896 cts 001.715 mgC 4.97 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Fri Apr 22 08:47:41 2005

#0001 08:55:02 TC SPL#01 52.800 mg 0007404 cts 003.344 mgC 6.33 %C

OI Analytical
TOC Solids V3.0 Beta - Rev 11
Analysis Date: Fri Apr 22 08:55:31 2005

Extraction/Distillation/Digestion Logs

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Combustion TOC Prep Log
Analysis #2079, #0383

Tray #: 20
Time: 0800
Balance I.D.: B35614
Analyst: [illegible]

Date: 4/19/05 Batch #: 05109062131

	A		B		C	
	Sample #	Wt. (mg)	Sample #	Wt. (mg)	Sample #	Wt. (mg)
1	PBS	0	[illegible] 4-19-05 (3) ~~PBS~~	~~0~~	~~PBS~~	~~0~~
2	LCSS	195.9	LCSS	213.7	LCSS	192.7
3	4504547	48.4	4504548	51.9	4504549	52.5
4	4504550	903.1	4504551	50.4	4504552	56.7
5	4504553	121.8	4504554-U	55.9	4504555-R	14.2
6	4504556-D	58.8	4504557	294.2	4504558	54.2
7	(B) 4504559-U	46.9	4504559-R	19.9	4504559-D	49.6
8	4504560	49.1	4504561	266.0	4504562	442.9

Verified by: [illegible] Date: 4/21/05

2705.01 12/13/00

054861 31

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Combustion TOC Prep Log
Analysis #2079, #0383

Tray #: 10
Time: 0845
Balance I.D.: B35614
Analyst: [illegible]

Date: 4/19/05 Batch #: 051904213.B

	A		B		C	
	Sample #	Wt. (mg)	Sample #	Wt. (mg)	Sample #	Wt. (mg)
1	4504563	46.3	4504565	45.2	4504567	64.8
2	4504568	56.1	4504590	136.1	4504591	23.5
3						
4						
5						
6						
7						
8						

Verified by: [signature] 4/20/05 Date: 4/21/05

2705.01 12/13/00

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Combustion TOC Prep Log
Analysis #2079, #0383

Tray #: 10
Time: 1300
Balance I.D.: B3564
Analyst: [illegible]

Date: 4/21/05 Batch #: Repeats

	A		B		C	
	Sample #	Wt. (mg)	Sample #	Wt. (mg)	Sample #	Wt. (mg)
1	PBS	0	PBS	0	PBS	0
2	LCSS	216.1	LCSS	210.1	LCSS	197.9
3	4504559-R	③ [illegible] 4-21-05 197. 10.0	4504557	288.4	4504590	214.3
4	4502418	12.4	4502422	16.0	4502423	13.6
5	4502428	49.4	4502429	38.4	4502430-4	32.3
6	4502431-R	8.1	4502433-D	27.3	4502434	81.5
7	4502435	28.8	4502436	26.3	4502437	36.7
8	4502438	16.2	4502439	13.4	4504843	6.6

Verified by: [illegible] Date: 4/25/05

2705.01 12/13/00

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Combustion TOC Prep Log
Analysis #2079, #0383

③ KLE7505 04/21/05

Tray #: 40

Time: ~~2015~~ 1115

Balance I.D.: B35614

Analyst: KLE7505

Date: 04/21/05

Batch #: REPEAT +05111150531

	A		B		C	
	Sample #	Wt. (mg)	Sample #	Wt. (mg)	Sample #	Wt. (mg)
1	4504590	205.6	4504590	325.8	4504590	857.9
2	PBS	0.00				
3	LCSS	204.1	LCSS	203.4	LCSS	225.0
4	4504850-U	23.5	4504850-R	6.8	4504850-D	30.3
5	4504851	35.6	4504852	34.5	4504853	52.8
6	4504854	36.0	4504855	32.6	4504938	157.1
7	4506571	62.9	4506574	51.0	4506609	37.9
8	B 4506610-U	39.3	4506610-R	12.9	4506610-D	38.7

Verified by: PB 609 Date: 4/25/05

2705.01 12/13/00

054861 40

Miscellaneous Analysis Data

Case Narrative
Conformance/Nonconformance Summary

Lancaster Laboratories

Where quality is a science.

CLIENT: Blasland, Bouck & Lee, Inc.
SDG: HRN02

LANCASTER LABORATORIES

MISCELLANEOUS WET CHEMISTRY

SAMPLE NUMBERS:

Sample #	Sample Code	Comments
4504590	013A1	
4504591	012A1	

ANALYSIS:
No problems were encountered during this analysis.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:
QC was within specification.

DATA INTERPRETATION:
No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Date: 5-5-05

Sandra J. Miller
Specialist

0056

QC Summary

Lancaster Laboratories

Quality Control Reference List

Client Name: Blasland, Bouck & Lee, Inc.
SDG: HRN02

Analyte	Batch Numbers	Sample Number
Grain Size	05118710401A	4504590
		4504591
Moisture	05108820008A	LCS
	05108820008B	4504590
		4504591
		P504560 U,D

ABBREVIATION KEY	
U = Background	M = Matrix Spike Duplicate
D = Duplicate	R = Matrix Spike
LCS = Laboratory Control Standard	
LCSD = Laboratory Control Standard Duplicate	

Lancaster Laboratories

Quality Control Summary
Duplicate Analysis
Miscellaneous Wet Chemistry
SDG: HRN02
Matrix: SOIL

Sample Number	Sample Code	Analyte	Duplicate Analysis Date	ME	Batch #	Sample Result	Duplicate Result	Units	RPD (%)	Control Limits %
P504560	4560D	Moisture	4/18/2005	OD	05108820008B	48.93	48.64	%	1	15

Comments: If the background and/or the duplicate result was less than the limit of quantitation, the RPD is not required.

ABBREVIATION KEY

CO = Colorimetric	ND = Not Detected
TI = Titration	NA = Not Applicable
G = Gravimetric	OD = Oven Dried
ME = Method	J = Estimated Value < LOQ
MTR = Meter	* = Out of Specification
IR = Infrared Spectrophotometry	
D = Duplicate	

Lancaster Laboratories

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate (LCSD)
Miscellaneous Wet Chemistry
SDG: HRN02
Matrix: SOIL

Batch Number	Analyte	Analysis Date	ME	True LCS/LCSD Value	LCS Results	LCSD Results	Units	Acceptance Window	RPD (%)	% RPD Acceptance </=
05108820008	Moisture	4/18/2005	OD	89.5	89.43	NA	%	88.6 - 90.4	NA	NA

ABBREVIATION KEY

CO = Colorimetric	* = Out of Specification
TI = Titration	J = Estimated Value < LOQ
G = Gravimetric	NA = Not Applicable
MTR = Meter	ME = Method
OD = Oven Dried	ND = Not Detected
IR = Infrared Spectrophotometry	

Lancaster Laboratories
Method Detection Limits
Department 29 – Water Quality

ANALYSIS	LL #	MDL	ANALYSIS	LL #	MDL
Acidity	476	2 mg/l as CaCO3	Oil and Grease	231	2.5 mg/l
Acidity	4530	2 mg/l as CaCO3	Oil and Grease	236	430 mg/kg
Alkalinity to pH 4.5	202	0.41 mg/l as CaCO3	Oil and Grease	429	0.40 mg/l
Ammonia Nitrogen	573	17 mg/kg	Oil and Grease	2446	233 mg/kg
Ammonia Nitrogen	221	0.11 mg/l	Orthophosphate	226	0.01 mg/l
Ammonia Nitrogen	6914	0.03 mg/l			
BOD	235	0.80 mg/l	Petroleum Hydrocarbons	1126, 8140	0.40 mg/l
Carbonaceous BOD	1364	0.80 mg/l	Petroleum Hydrocarbons	1554	0.50 mg/l
Chemical Oxygen Demand	1553	2.1 mg/l	Petroleum Hydrocarbons	1562	23 mg/kg
Chemical Oxygen Demand	234	300 mg/kg	Petroleum Hydrocarbons	1663	21 mg/kg
Chemical Oxygen Demand	4001	9.7 mg/l			
Chloride	1124	0.4 mg/l			
Chlorine Residual	240	0.04 mg/l			
Dissolved Oxygen	428	0.09 mg/l	Silica	559	0.1 mg/l
			Silica (low-level)	6628	0.01 mg/l
Ferrous Iron	8344	0.008 mg/l	Soluble BOD	541	0.80 mg/l
Fluoride	263	0.03 mg/l	Specific Conductance	280	1.7 umhos/cm
Fluoride Distillation	2200	0.03 mg/l	Specific Gravity	1443	0.005
Hexane Extractable Materials (Silica-Gel Treated)	8078, 612	1.68 mg/l	Sulfate	1125	1.5 mg/l
Hexane Extractable Materials	8079	1.4 mg/l	Sulfate, 10mg/l CCV (non-PW)	1125	8.28 – 9.90 mg/l
HEM Oil and Grease	2562	430 mg/kg	Sulfide	230	0.022 mg/l
Hexavalent Chromium	276	0.006 mg/l	Sulfide, Acid Volatile	1630	0.39 micromoles/g
Hexavalent Chromium	425	0.50 mg/kg	Sulfide Titration	1333	0.53 mg/l
Hexavalent Chromium	1446	0.0007 mg/l	Sulfide Titration	1122	27 mg/kg
Hexavalent Chromium	4858	0.65 mg/kg	Sulfide Titration	487	8.4 mg/kg
Hexavalent Chromium	4859	0.004 mg/l	Sulfite	229	1.2 mg/l
			Total Dissolved Solids	212	9.7 mg/l
M.B.A.S.	225	0.035 mg/l	Total Hardness	216	0.49 mg/l as CaCO3
Moisture	111	0.5 %	Total Solids	203	6.3 mg/l
Moisture	1353	0.5 %	Total Suspended Solids	206	3.0 mg/l
			Turbidity	279	0.09 NTU

Revised 3/11/05

Raw Data

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504590 Date: 4/28/05 Init./Emp. #: cwh280 Batch #: 051187104041A

#3 cwh280 5.1.05

4/30/05 Pan Balance ID#: 9458 #3 cwh280 4/30/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.33	539.33
1.5 Inch	559.86	559.86
0.75 Inch	556.75	556.75
#4	506.12	446.90
#6	451.05	431.18
#8	424.50	404.20
PAN	268.62	100.00

Time: 12:00

Organic Matter: very rocky gritty soil, sticks, twigs

Odor:

73a

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	405.06	368.61
#30	346.06	291.50
#50	314.11	264.12
#100	245.95	229.49
#200	226.19	2416.37
PAN	293.56	292.22

#3 cwh280 4/30/05

Analytical Balance ID#:

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 168.62 Hydrometer ID #:

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam:

Org. matter:

Oven ID#:

Oven Temp In:

Oven Temp Out:

Verified by: CB **Date:** 5/2/05

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504590	04/28/05	CLC/286	168.62

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.33	539.33	0.00	100
1.5 inch	559.86	559.86	0.00	100
0.75 inch	556.75	556.75	0.00	100
# 4	506.12	446.90	59.22	77.90380956
# 6	451.05	431.18	19.87	70.48990709
# 8	424.50	404.20	20.30	62.91556285
PAN	268.62	100.00	168.62	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	405.06	368.61	36.45	49.31532406
# 30	346.06	291.50	54.56	28.95787471
# 50	314.11	264.12	49.99	10.30558561
# 100	245.95	229.49	16.46	4.16402373
# 200	226.19	216.37	9.82	0.499981344
PAN	293.56	292.22	1.34	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
77.9	4.75
70.5	3.35
62.9	2.36
49.3	1.18
29.0	0.6
10.3	0.3
4.2	0.15
0.5	0.075

LANCASTER LABORATORIES

06 5/2/05

0864

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

#7103/#7104 Particle Size Distribution

Sample: 4504591 Date: 4/28/05 Init./Emp. #: cue/286 Batch #: 05118710401A

Pan Balance ID#: 9458

5/2/05 #3 cue/286 5/2/05

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
3 Inch	539.32	539.32
1.5 Inch	559.83	559.83
0.75 Inch	556.73	556.73
#4	447.25	446.88
#6	434.97	431.18
#8	417.11	404.23
PAN	294.61	100.00

#3 cue/286 5/2/05

Time: 12:00

Organic Matter: hard lumpy soil rocks

Odor: —

73c

Sieve Size (Mr)	Tare + Sample Wt.	Tare Weight
#16	431.01	368.64
#30	332.70	291.48
#50	289.65	264.11
#100	251.60	229.58
#200	236.15	216.34
PAN	315.84	292.19

Analytical Balance ID#: —

Moisture

Tare Weight	Sample Weight	Oven Dry Weight

Bulk Density

Tare Weight	Sample Weight	DI H_2O + Sple Wt.

Hydrometer Readings Sample Wt. 194.61 Hydrometer ID #: —

Time	Temp	Reading	Comments
2 minutes			
5 minutes			
15 minutes			
30 minutes			
60 minutes			
250 minutes			
1440 minuets			

Foam: —

Org. matter: —

Oven ID#: —

Oven Temp In: —

Oven Temp Out: 0065

Verified by: [signature] **Date:** 5/3/05

3606.02

Particle Size Distribution

Analysis # 7104 Particle Size

Sample:	Date:	Init/Emp #	Sample Weight
4504591	04/28/05	CLC/286	194.61

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
3 inch	539.32	539.32	0.00	100
1.5 inch	559.83	559.83	0.00	100
0.75 inch	556.73	556.73	0.00	100
# 4	447.25	446.88	0.37	99.82518309
# 6	434.97	431.18	3.79	98.0344909
# 8	417.11	404.23	12.88	91.94897236
PAN	294.61	100.00	194.61	

Sieve Size (Mr)	Tare + Smp. Wt	Tare Weight	Diff. (Mr)	% Passing
# 16	431.01	368.64	62.37	62.48051028
# 30	332.70	291.48	41.22	43.00496102
# 50	289.65	264.11	25.54	30.93786912
# 100	251.60	229.58	22.02	20.53390031
# 200	236.15	216.34	19.81	11.1741082
PAN	315.84	292.19	23.65	

Percent Passing	Particle Size
100.0	75
100.0	37.5
100.0	19
99.8	4.75
98.0	3.35
91.9	2.36
62.5	1.18
43.0	0.6
30.9	0.3
20.5	0.15
11.2	0.075

LANCASTER LABORATORIES

~~LANCASTER~~ 3 KQ 5/4/05

5/3/05

0066

oven 2
3rd shelf
left side

Batch#: 05108820008

LLENS Worksheet for Moisture

Oven ID #: 7493 Time In: 1406 Time Out: 0006

Balance ID #: 9001 Std. Ref. (book/pg.): 053234 p12

#	Sample ID	Date Added	Comments	Analysis#
1)	LCS 89.5%	04/18/05 09:44		
2)	4504547	04/18/05 09:44	Sludge 20A	00111
3)	4504548	04/18/05 09:44	Sludge w/rocks, roots	00111
4)	4504549	04/18/05 09:44	sludge	00111
5)	4504550	04/18/05 09:44	Sludge (gritty) w/rocks	00111
6)	4504551	04/18/05 09:44	Sludge	00111
7)	4504552	04/18/05 09:44	moist clay	00111
8)	4504553	04/18/05 09:44	gritty sludge w/rocks	00111
9)	4504554	04/18/05 09:44	Sludge 21A	00111
10)	4504555MS	04/18/05 09:44		00118
11)	4504556DUP	04/18/05 09:44		00121
12)	4504557	04/18/05 09:44	wet gritty soil w/rocks 20A	00111
13)	4504558	04/18/05 09:44	moist clay	00111
14)	4504559 -	04/18/05 09:44	Sludge (sandy)	00111
15)	4504560	04/18/05 09:44	moist clay	00111
16)	4504560DUP	04/18/05 12:09		00111
17)	4504561	04/18/05 09:44	gritty sludge w/rocks	00111
18)	4504562	04/18/05 09:44	Sandy Sludge w/rocks	00111
19)	4504563 -	04/18/05 09:44	Sludge	00111
20)	4504565 -	04/18/05 09:44	Sludge w/ rocks muddy rocks	00111
21)	4504567	04/18/05 09:44	~~wet gritty soil w/rocks~~ ③SF 1201 4-18-05	00111
22)	4504568	04/18/05 09:44	Sludge w/rocks	00111

8887

Signature: Scott Fenske 1201 Date: 4-18-05

Printed by 00236 on 04/18/2005 at 12:09

Batch#: 05108820008

LLENS Worksheet for Moisture

Oven ID #: 7493 Time In: 1406 Time Out: 0006

Balance ID #: 9001 Std. Ref. (book/pg.): ~~054~~ 053234 p12

③ SF 1201
4-18-05

#	Sample ID	Date Added	Comments	Analysis#
23)	4504590	04/18/05 09:44	gritty sludge w/rocks, stick 20A	00111
24)	4504591	04/18/05 09:44	moist clay ↓	00111

Signature: Scott Fuesler 1201 Date: 4-18-05

Printed by 00236 on 04/18/2005 at 12:09

√cw 236 4/19/05

8868

Batch#: 05108820008

LLENS Batch Chronology Report - Moisture

#	Operation	Instrument	Date	Time	Analyst
1)	Batch Creation		04/18/2005	09:44	00236
2)	Pre-Drying Wt.	9001	04/18/2005	13:38	01201
3)	Dry Sample Wt.	9001	04/19/2005	01:06	00182
4)	Calculate/Transmit	LL08926	04/19/2005	01:12	00182

Comments: √ cw 236 4/19/05

Printed by 00182 on 04/19/2005 at 01:12

Sample ID	BI	MAN	Rep #	Tare Wt	Sample Wt	Dry Wt	Dup Diff	%Rel Diff	% Moisture
LCS 89.5%	A			1.1586	5.0207	1.6895			89.43 100% (15)
4504547	A	00111		1.1565	8.3481	5.6443			46.24 /
4504548	A	00111		1.1532	9.1553	5.0671			57.25 /
4504549	A	00111		1.1502	8.7870	5.1563			54.41 /
4504550	A	00111		1.1551	7.4299	5.7305			38.42 /
4504551	A	00111		1.1464	6.7807	4.2785			53.81 /
4504552	A	00111		1.1449	9.8063	8.2231			27.82 /
4504553	A	00111		1.1520	8.1093	7.0256			27.57 /
4504554	A	00111		1.1509	9.0462	6.8693			36.79 /
4504555MS	A	00118							36.79 /
4504556DUP	A	00118							36.79 /
4504556DUP	A	00121		1.1413	8.1319	6.3207	0.48	1.31	36.31 / R: 1% (15)
4504557	A	00111		1.1490	9.5607	9.0298			17.57 /
4504558	A	00111		1.1460	7.4078	5.7587			37.73 /
4504559	B	00111		1.1476	8.0182	6.2532			36.32 /
4504560	B	00111		1.1487	9.0470	5.7686			48.93 /
4504560DUP	B	00111		1.1496	8.2079	5.3649	0.29	0.60	48.64 R: 1% (13)
4504561	B	00111		1.1539	7.3708	6.6932			24.85 /
4504562	B	00111		1.1404	5.7516	5.3101			27.50 /
4504563	B	00111		1.1446	8.3850	5.3588			49.74 /
4504565	B	00111		1.1492	8.5263	6.5860			36.23 /
4504567	B	00111		1.1543	8.0281	7.8935			16.05 /
4504568	B	00111		1.1517	7.6744	6.3801			31.87 /
4504590	B	00111		1.1482	8.4516	7.6207			23.42 /

Printed by 00182 on 04/19/2005 at 01:12

✓ CW 236 4/19/05

Sample ID	BI	MAN	Rep #	Tare Wt	Sample Wt	Dry Wt	Dup Diff	%Rel Diff	% Moisture
4504591	B	00111		1.1479	7.1390	4.4921			53.16

Printed by 00182 on 04/19/2005 at 01:12

√ cw 23c 4/19/05

0071

Appendix I

TOC Data Validation Package

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

DATA USABILITY SUMMARY REPORT

HACKENSACK RIVER, NEW JERSEY

SDG# HRN01, HRN02

TOTAL ORGANIC CARBON ANALYSES

Analyses performed by:

Lancaster Laboratories
Lancaster, Pennsylvania

Review performed by:

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Blasland, Bouck & Lee, Inc.
Syracuse, New York

Summary

The following is an assessment of the data package for SDG# HRN01 and HRN02 for sampling of the Hackensack River site. Included with this assessment are the data review check sheets used in the review of the package and corrected sample results. Analyses were performed on the following samples:

				Analysis				
Sample ID	Lab ID	Matrix	Sample Date	VOC	SVOC	PCB	MET	TOC
HRFRSED0012A-01	12A01/4504547	Sediment	04/13/05					x
HRFRSED002A-01	20A01/4504548	Sediment	04/13/05					x
HRFRSED019A-01	19A01/4504549	Sediment	04/13/05					x
HRFRSED010A-01	10A01/4504550	Sediment	04/13/05					x
HRFRSED018A-01	18A01/4504551	Sediment	04/13/05					x
HRFRSED017A-01	17A01/4504552	Sediment	04/13/05					x
HRFRSED001A-01	1A01/4504553	Sediment	04/13/05					x
HRFRSED002A-01	2A01/4504554	Sediment	04/13/05					x
HRFRSED003A-01	03A01/4504557	Sediment	04/13/05					x
HRFRSED011A-01	11-01/4504558	Sediment	04/13/05					x
HRFRSED009A-01	09A01/4504559	Sediment	04/13/05					x
HRFRSED008A-01	08A01/4504560	Sediment	04/13/05					x
HRFRSED007A-01	07A01/4504561	Sediment	04/13/05					x
HRFRSED016A-01	16A01/4504562	Sediment	04/13/05					x
HRFRSED006A-01	6A01/4504563	Sediment	04/13/05					x
HRFRSED005A-01	5A01/4504564	Sediment	04/13/05					x
HRFRSEDDUP1-1	1-DP1/4504565	Sediment	04/13/05					x
HRFRSEDDUP2-1	1-DP2/4504566	Sediment	04/13/05					x
HRFRSED015A-01	15A01/4504567	Sediment	04/14/05					x
HRFRSED014A-01	14A01/4504568	Sediment	04/14/05					x

Sample ID	Lab ID	Matrix	Sample Date	Analysis				
				VOC	SVOC	PCB	MET	TOC
HRFRSED013A-01	013A1/4504590	Sediment	04/14/05					x
HRFRSED012A-01	012A1/4504591	Sediment	04/14/05					x

TOTAL ORGANIC CARBON
(TOC)

Introduction

Analyses were performed according to the following methods:

TOC	Lloyd Kahn

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with National Functional Guidelines:

ND The analyte was analyzed for but not detected. The associated value is the analyte reporting limit.

B The reported value was obtained from a reading less than the reporting limit (RL) but greater than or equal to the instrument detection limit (IDL).

J The associated numerical value is an estimated concentration only.

E The reported value is estimated due to the presence of interference.

M Duplicate injection precision not met.

N Spiked sample recovery not within control limits.

* Duplicate analysis not within control limits.

R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Data Assessment

1. Holding Time

All samples were analyzed within specified holding times.

2. Blank Contamination

Quality assurance blanks, i.e., method, field, or rinse blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks (including initial and continuing calibration blanks and preparation blanks) measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

No TOC was detected in the method blanks.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument continuing performance is satisfactory.

All calibration data were within acceptable.

4. Matrix Spike (MS)/ Laboratory Duplicate

Matrix spike/Laboratory duplicate data are used to assess the accuracy of the analytical method.

The MS recoveries were within control limits.

Results for laboratory duplicate samples are summarized as follows:

Sample ID	Analyte	Sample Result	Duplicate Result	RPD
HRFRSED002A-01	TOC	10000	6400	46%
HRFRSED009A-01	TOC	7500	5900	24%

ND not detected.
NA Analyte not detected in sample and/or duplicate. RPD not applicable.

Both laboratory RPDs were greater than the laboratory in house limit therefore all associated data have been qualified as estimated.

5. Field Duplicate

Results for duplicate samples are summarized as follows:

Sample ID/ Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
HRFRSED009A-01 / HRFRSEDDUP1-1	TOC	12000	15000	22.2%

ND not detected.
NA Analyte not detected in sample and/or duplicate. RPD not applicable.

Duplicate results are acceptable.

6. Laboratory Control Sample (LCS)

The LCS recoveries were within control limits.

7. System Performance and Overall Assessment

The laboratory did not follow the precision and accuracy of the method cited in section 9.3. Since none of the sample were analyzed in quadruplicate all sample results were qualified as estimated.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

Data Validation Checklist

Data Validation Checklist

	YES	NO	NA
Data Completeness and Deliverables			
Is there a narrative or cover letter present?	X		
Are the sample numbers included in the narrative?	X		
Are the sample chain-of-custodies present?	X		
Do the chain-of-custodies indicate any problems with sample receipt or sample condition?		X	
Raw Data			
Are the preparation logs present?	X		
Are preparation dates present on sample preparation logs/bench sheets?	X		
Are the measurement read out records present?	X		
Is the data legible?	X		
Is the data properly labeled?	X		
Percent solids calculation present for soils/sediments?	X		
Holding Times			
Were all analyses performed within the specified holding times?	X		
Sample Data			
Are all forms complete?	X		
Are correct units indicated the results sheets?	X		
Are soil sample results for each parameter corrected for percent solids?	X		
Initial Calibration			
Is a record of an initial calibration present?:	X		
Is correlation coefficient less than .995?:		X	
Initial and Continuing Calibration Verification			
Present and complete for all analytes?	X		
Are all calibration standards (initial and continuing) within control limits?:	X		
Was continuing calibration performed every 10 samples or every 2 hours?	X		
Was the ICV for cyanides distilled?	X		
Initial and Continuing Calibration Blanks			
Present and complete?	X		
Was an initial calibration blank analyzed?	X		

	YES	NO	NA
Was a continuing calibration blank analyzed after every 10 samples or every 2 hours (which ever is more frequent)?	X		
Are all calibration blanks less than or equal to the RL?	X		
Preparation Blank			
Was one prep. blank analyzed for:			
each batch of digested samples?	X		
each matrix type?	X		
Are all preparation blanks less than the RL?		X	
If no, is the concentration of the sample with the least concentrated analyte less than 10 times the prep. blank?		X	
Matrix Spike			
Present and complete for:			
each batch?	X		
each matrix type?	X		
Are all results within the control limits?	X		
Laboratory Duplicates			
Present and complete for:			
each batch?		X	
each matrix type?		X	
Are all values within control limits?			X
Field Duplicates			
Were field duplicates analyzed?	X		
Laboratory Control Sample			
Was one LCS prepared and analyzed for:			
each matrix?	X		
each batch?	X		
Are all recoveries within control limits?	X		

Corrected Sample Analysis Data Sheets

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504547

HRFRSED0012A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 08:30 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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6723 Towpath Road
Syracuse NY 13214

12A01 SDG#: HRN01-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	46.2	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	22,000. J	2,300.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.5	0.50	% Passing	1
07139	3.35 mm	n.a.	98.0	0.50	% Passing	1
07140	2.36 mm	n.a.	92.9	0.50	% Passing	1
07141	1.18 mm	n.a.	67.7	0.50	% Passing	1
07142	0.6 mm	n.a.	50.0	0.50	% Passing	1
07143	0.3 mm	n.a.	37.9	0.50	% Passing	1
07144	0.15 mm	n.a.	21.0	0.50	% Passing	1
07145	0.075 mm	n.a.	5.1	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 15:12	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504548

HRFRSED0020A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 09:10 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

20A01 SDG#: HRN01-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	57.2	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	44,000. J	2,700.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	83.9	0.50	% Passing	1
07139	3.35 mm	n.a.	76.9	0.50	% Passing	1
07140	2.36 mm	n.a.	65.7	0.50	% Passing	1
07141	1.18 mm	n.a.	47.8	0.50	% Passing	1
07142	0.6 mm	n.a.	32.5	0.50	% Passing	1
07143	0.3 mm	n.a.	17.0	0.50	% Passing	1
07144	0.15 mm	n.a.	4.0	0.50	% Passing	1
07145	0.075 mm	n.a.	1.5	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 15:20	Kyle W Eckenroad	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504549

HRFRSED019A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 09:33 by JG

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

19A01 SDG#: HRN01-03

Account Number: 03074

Blasland, Bouck & Lee, Inc.
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CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	54.4	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	28,000. J	2,500.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.8	0.50	% Passing	1
07139	3.35 mm	n.a.	98.7	0.50	% Passing	1
07140	2.36 mm	n.a.	95.7	0.50	% Passing	1
07141	1.18 mm	n.a.	68.2	0.50	% Passing	1
07142	0.6 mm	n.a.	48.5	0.50	% Passing	1
07143	0.3 mm	n.a.	29.3	0.50	% Passing	1
07144	0.15 mm	n.a.	13.7	0.50	% Passing	1
07145	0.075 mm	n.a.	4.8	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 15:28	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504550

HRFRSED010A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 10:34 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

10A01 SDG#: HRN01-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	38.4	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	15,000. J	1,200.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	80.7	0.50	% Passing	1
07139	3.35 mm	n.a.	70.6	0.50	% Passing	1
07140	2.36 mm	n.a.	61.0	0.50	% Passing	1
07141	1.18 mm	n.a.	46.2	0.50	% Passing	1
07142	0.6 mm	n.a.	28.7	0.50	% Passing	1
07143	0.3 mm	n.a.	13.2	0.50	% Passing	1
07144	0.15 mm	n.a.	4.7	0.50	% Passing	1
07145	0.075 mm	n.a.	2.0	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 19:14	Kyle W Eckenroad	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504551

HRFRSED018A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 10:57 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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18A01 SDG#: HRN01-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	53.8	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	28,000. J	2,600.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.8	0.50	% Passing	1
07139	3.35 mm	n.a.	99.2	0.50	% Passing	1
07140	2.36 mm	n.a.	97.0	0.50	% Passing	1
07141	1.18 mm	n.a.	72.6	0.50	% Passing	1
07142	0.6 mm	n.a.	54.4	0.50	% Passing	1
07143	0.3 mm	n.a.	41.2	0.50	% Passing	1
07144	0.15 mm	n.a.	26.2	0.50	% Passing	1
07145	0.075 mm	n.a.	12.3	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 15:44	Kyle W Eckenroad	1

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Lancaster Laboratories Sample No. SW 4504552

HRFRSED017A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 11:25 by JG

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

17A01 SDG#: HRN01-06

Account Number: 03074

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CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	27.8		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	6,300.	J	600.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	100.		0.50	% Passing	1
07138	4.75 mm	n.a.	99.9		0.50	% Passing	1
07139	3.35 mm	n.a.	99.4		0.50	% Passing	1
07140	2.36 mm	n.a.	94.0		0.50	% Passing	1
07141	1.18 mm	n.a.	65.1		0.50	% Passing	1
07142	0.6 mm	n.a.	42.4		0.50	% Passing	1
07143	0.3 mm	n.a.	27.9		0.50	% Passing	1
07144	0.15 mm	n.a.	9.5		0.50	% Passing	1
07145	0.075 mm	n.a.	0.90	J	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 15:40	Kyle W Eckenroad	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504553

HRFRSED001A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 12:39 by JG

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

Account Number: 03074

Blasland, Bouck & Lee, Inc.
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Syracuse NY 13214

-1A01 SDG#: HRN01-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	27.6		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	6,100.	J	680.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	97.2		0.50	% Passing	1
07138	4.75 mm	n.a.	80.3		0.50	% Passing	1
07139	3.35 mm	n.a.	75.8		0.50	% Passing	1
07140	2.36 mm	n.a.	70.2		0.50	% Passing	1
07141	1.18 mm	n.a.	61.4		0.50	% Passing	1
07142	0.6 mm	n.a.	51.3		0.50	% Passing	1
07143	0.3 mm	n.a.	30.0		0.50	% Passing	1
07144	0.15 mm	n.a.	4.5		0.50	% Passing	1
07145	0.075 mm	n.a.	0.90	J	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 15:59	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504554

HRFRSED002A-01 Unspiked Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 12:57 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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6723 Towpath Road
Syracuse NY 13214

-2A01 SDG#: HRN01-08BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	36.8	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	16,000. J	1,700.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	88.5	0.50	% Passing	1
07139	3.35 mm	n.a.	81.5	0.50	% Passing	1
07140	2.36 mm	n.a.	74.8	0.50	% Passing	1
07141	1.18 mm	n.a.	64.4	0.50	% Passing	1
07142	0.6 mm	n.a.	55.3	0.50	% Passing	1
07143	0.3 mm	n.a.	44.5	0.50	% Passing	1
07144	0.15 mm	n.a.	26.1	0.50	% Passing	1
07145	0.075 mm	n.a.	6.6	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/19/2005 16:07	Kyle W Eckenroad	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504557

HRFRSED003A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 13:27 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

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03A01 SDG#: HRN01-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	17.6		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	15,000.	J	250.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	43.0		0.50	% Passing	1
07138	4.75 mm	n.a.	10.3		0.50	% Passing	1
07139	3.35 mm	n.a.	8.8		0.50	% Passing	1
07140	2.36 mm	n.a.	7.4		0.50	% Passing	1
07141	1.18 mm	n.a.	5.4		0.50	% Passing	1
07142	0.6 mm	n.a.	3.6		0.50	% Passing	1
07143	0.3 mm	n.a.	1.4		0.50	% Passing	1
07144	0.15 mm	n.a.	0.50	J	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.		0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/21/2005 14:35	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504558

HRFRSED011A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 13:54 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:39
Discard: 05/19/2005

Blasland, Bouck & Lee, Inc.
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11-01 SDG#: HRN01-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	37.7	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	2,300. J	270.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	93.2	0.50	% Passing	1
07139	3.35 mm	n.a.	84.9	0.50	% Passing	1
07140	2.36 mm	n.a.	73.5	0.50	% Passing	1
07141	1.18 mm	n.a.	52.0	0.50	% Passing	1
07142	0.6 mm	n.a.	32.2	0.50	% Passing	1
07143	0.3 mm	n.a.	13.6	0.50	% Passing	1
07144	0.15 mm	n.a.	2.9	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 15:48	Kyle W Eckenroad	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504559

HRFRSED009A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 14:22 by JG

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

09A01 SDG#: HRN01-11

Account Number: 03074

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CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	36.3	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	12,000. J	1,200.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	90.0	0.50	% Passing	1
07139	3.35 mm	n.a.	82.4	0.50	% Passing	1
07140	2.36 mm	n.a.	76.4	0.50	% Passing	1
07141	1.18 mm	n.a.	68.3	0.50	% Passing	1
07142	0.6 mm	n.a.	56.5	0.50	% Passing	1
07143	0.3 mm	n.a.	33.1	0.50	% Passing	1
07144	0.15 mm	n.a.	9.3	0.50	% Passing	1
07145	0.075 mm	n.a.	2.4	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 20:06	Kyle W Eckenroad	1

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Lancaster Laboratories Sample No. SW 4504560

HRFRSED008A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 14:39 by JG

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Account Number: 03074

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08A01 SDG#: HRN01-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	48.9	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	18,000. J	2,100.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.9	0.50	% Passing	1
07139	3.35 mm	n.a.	99.0	0.50	% Passing	1
07140	2.36 mm	n.a.	95.5	0.50	% Passing	1
07141	1.18 mm	n.a.	64.9	0.50	% Passing	1
07142	0.6 mm	n.a.	40.1	0.50	% Passing	1
07143	0.3 mm	n.a.	23.6	0.50	% Passing	1
07144	0.15 mm	n.a.	11.9	0.50	% Passing	1
07145	0.075 mm	n.a.	3.5	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 19:58	Kyle W Eckenroad	1

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Lancaster Laboratories Sample No. SW 4504561

HRFRSED007A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 15:05 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

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07A01 SDG#: HRN01-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	24.8		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	75,000.	J	930.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	88.3		0.50	% Passing	1
07138	4.75 mm	n.a.	32.2		0.50	% Passing	1
07139	3.35 mm	n.a.	24.5		0.50	% Passing	1
07140	2.36 mm	n.a.	19.4		0.50	% Passing	1
07141	1.18 mm	n.a.	14.9		0.50	% Passing	1
07142	0.6 mm	n.a.	10.6		0.50	% Passing	1
07143	0.3 mm	n.a.	3.3		0.50	% Passing	1
07144	0.15 mm	n.a.	1.2		0.50	% Passing	1
07145	0.075 mm	n.a.	0.50	J	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 16:03	Kyle W Eckenroad	1

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Lancaster Laboratories Sample No. SW 4504562

HRFRSED016A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 15:18 by JG

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Account Number: 03074

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16A01 SDG#: HRN01-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	27.5	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	13,000. J	890.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	95.2	0.50	% Passing	1
07139	3.35 mm	n.a.	93.7	0.50	% Passing	1
07140	2.36 mm	n.a.	92.1	0.50	% Passing	1
07141	1.18 mm	n.a.	82.7	0.50	% Passing	1
07142	0.6 mm	n.a.	31.4	0.50	% Passing	1
07143	0.3 mm	n.a.	6.5	0.50	% Passing	1
07144	0.15 mm	n.a.	N.D.	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 16:16	Kyle W Eckenroad	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504563

HRFRSED006A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 15:27 by JG

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Account Number: 03074

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-6A01 SDG#: HRN01-15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	49.7	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	33,000. J	2,600.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.9	0.50	% Passing	1
07139	3.35 mm	n.a.	99.7	0.50	% Passing	1
07140	2.36 mm	n.a.	98.4	0.50	% Passing	1
07141	1.18 mm	n.a.	93.4	0.50	% Passing	1
07142	0.6 mm	n.a.	59.5	0.50	% Passing	1
07143	0.3 mm	n.a.	38.6	0.50	% Passing	1
07144	0.15 mm	n.a.	10.7	0.50	% Passing	1
07145	0.075 mm	n.a.	1.7	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 13:55	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504564

HRFRSED005A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 16:00 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

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-5A01 SDG#: HRN01-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	87.0	0.50	% Passing	1
07137	19 mm	n.a.	71.1	0.50	% Passing	1
07138	4.75 mm	n.a.	47.0	0.50	% Passing	1
07139	3.35 mm	n.a.	41.8	0.50	% Passing	1
07140	2.36 mm	n.a.	34.6	0.50	% Passing	1
07141	1.18 mm	n.a.	24.4	0.50	% Passing	1
07142	0.6 mm	n.a.	15.1	0.50	% Passing	1
07143	0.3 mm	n.a.	5.8	0.50	% Passing	1
07144	0.15 mm	n.a.	2.0	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07104	Grain Size to 75 um	ASTM D-422	1	05/02/2005 12:00	Catherine L Cammauf	1

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Analysis Report

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Lancaster Laboratories Sample No. SW 4504565

HRFRSEDDUP1-1 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 by JG

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Account Number: 03074

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1-DP1 SDG#: HRN01-17FD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	36.2	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	15,000. J	2,100.	mg/kg	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 14:03	Kyle W Eckenroad	1

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Lancaster Laboratories Sample No. SW 4504566

HRFRSEDDUP2-1 Grab Sediment Sample
Hackensack River, NJ

Collected:04/13/2005 by JG

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

Account Number: 03074

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1-DP2 SDG#: HRN01-18FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.6	0.50	% Passing	1
07139	3.35 mm	n.a.	98.3	0.50	% Passing	1
07140	2.36 mm	n.a.	95.2	0.50	% Passing	1
07141	1.18 mm	n.a.	67.2	0.50	% Passing	1
07142	0.6 mm	n.a.	42.9	0.50	% Passing	1
07143	0.3 mm	n.a.	23.6	0.50	% Passing	1
07144	0.15 mm	n.a.	9.4	0.50	% Passing	1
07145	0.075 mm	n.a.	3.0	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07104	Grain Size to 75 um	ASTM D-422	1	04/28/2005 12:00	Catherine L Cammauf	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504567

HRFRSED015A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/14/2005 07:17 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

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15A01 SDG#: HRN01-19

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	16.1		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	5,500.	J	110.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	58.1		0.50	% Passing	1
07138	4.75 mm	n.a.	13.7		0.50	% Passing	1
07139	3.35 mm	n.a.	10.5		0.50	% Passing	1
07140	2.36 mm	n.a.	8.5		0.50	% Passing	1
07141	1.18 mm	n.a.	5.5		0.50	% Passing	1
07142	0.6 mm	n.a.	2.8		0.50	% Passing	1
07143	0.3 mm	n.a.	1.3		0.50	% Passing	1
07144	0.15 mm	n.a.	0.50	J	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.		0.50	% Passing	1

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 14:11	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504568

HRFRSED014A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/14/2005 07:41 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/04/2005 at 14:40
Discard: 05/19/2005

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14A01 SDG#: HRN01-20*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	31.9	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	4,100. J	1,000.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	97.2	0.50	% Passing	1
07138	4.75 mm	n.a.	88.6	0.50	% Passing	1
07139	3.35 mm	n.a.	79.3	0.50	% Passing	1
07140	2.36 mm	n.a.	72.3	0.50	% Passing	1
07141	1.18 mm	n.a.	49.8	0.50	% Passing	1
07142	0.6 mm	n.a.	27.5	0.50	% Passing	1
07143	0.3 mm	n.a.	10.0	0.50	% Passing	1
07144	0.15 mm	n.a.	2.1	0.50	% Passing	1
07145	0.075 mm	n.a.	N.D.	0.50	% Passing	1

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 20:23	Kyle W Eckenroad	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504590

HRFRSED013A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/14/2005 08:08 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/03/2005 at 13:23
Discard: 05/18/2005

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

013A1 SDG#: HRN02-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	23.4		0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
00383	TOC by Lloyd Kahn	n.a.	14,000.	J	240.	mg/kg	1
07104	Grain Size to 75 um						
07135	75 mm	n.a.	100.		0.50	% Passing	1
07136	37.5 mm	n.a.	100.		0.50	% Passing	1
07137	19 mm	n.a.	100.		0.50	% Passing	1
07138	4.75 mm	n.a.	77.9		0.50	% Passing	1
07139	3.35 mm	n.a.	70.5		0.50	% Passing	1
07140	2.36 mm	n.a.	62.9		0.50	% Passing	1
07141	1.18 mm	n.a.	49.3		0.50	% Passing	1
07142	0.6 mm	n.a.	29.0		0.50	% Passing	1
07143	0.3 mm	n.a.	10.3		0.50	% Passing	1
07144	0.15 mm	n.a.	4.2		0.50	% Passing	1
07145	0.075 mm	n.a.	0.50	J	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freiheit	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/21/2005 19:35	Kyle W Eckenroad	1

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. SW 4504591

HRFRSED012A-01 Grab Sediment Sample
Hackensack River, NJ

Collected:04/14/2005 08:38 by JG

Account Number: 03074

Submitted: 04/15/2005 09:15
Reported: 05/03/2005 at 13:23
Discard: 05/18/2005

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012A1 SDG#: HRN02-02*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	53.2	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
00383	TOC by Lloyd Kahn	n.a.	45,000. J	5,500.	mg/kg	1
07104	Grain Size to 75 um					
07135	75 mm	n.a.	100.	0.50	% Passing	1
07136	37.5 mm	n.a.	100.	0.50	% Passing	1
07137	19 mm	n.a.	100.	0.50	% Passing	1
07138	4.75 mm	n.a.	99.8	0.50	% Passing	1
07139	3.35 mm	n.a.	98.0	0.50	% Passing	1
07140	2.36 mm	n.a.	91.9	0.50	% Passing	1
07141	1.18 mm	n.a.	62.5	0.50	% Passing	1
07142	0.6 mm	n.a.	43.0	0.50	% Passing	1
07143	0.3 mm	n.a.	30.9	0.50	% Passing	1
07144	0.15 mm	n.a.	20.5	0.50	% Passing	1
07145	0.075 mm	n.a.	11.2	0.50	% Passing	1

State of New Jersey Lab Certification No. PA011

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	04/18/2005 13:38	Scott W Freisher	1
00383	TOC by Lloyd Kahn	Lloyd Kahn	1	04/20/2005 14:44	Kyle W Eckenroad	1

Laboratory Narrative

Lancaster Laboratories

Where quality is a science.

CLIENT: Blasland, Bouck & Lee, Inc.
SDG: HRN01

LANCASTER LABORATORIES

INSTRUMENTAL WET CHEMISTRY

SAMPLE NUMBERS:

Sample #	Sample Code	Comments
4504547	12A01	
4504548	20A01	
4504549	19A01	
4504550	10A01	
4504551	18A01	
4504552	17A01	
4504553	-1A01	
4504554	-2A01	Background
4504555	-2A01	Spike
4504556	-2A01	Duplicate
4504557	03A01	
4504558	11-01	
4504559	09A01	
4504560	08A01	
4504561	07A01	
4504562	16A01	
4504563	-6A01	
4504565	1-DP1	
4504567	15A01	
4504568	14A01	

ANALYSIS:
No problems were encountered during analysis.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:
QC was within specification.

DATA INTERPRETATION:
No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Sandra J. Miller Date: 4-28-05
Sandra J. Miller
Specialist

0818

Lancaster Laboratories

Where quality is a science.

CLIENT: Blasland, Bouck & Lee, Inc.
SDG: HRN02

LANCASTER LABORATORIES

INSTRUMENTAL WET CHEMISTRY

SAMPLE NUMBERS:

Sample #	Sample Code	Comments
4504590	013A1	
4504591	012A1	

ANALYSIS:
No problems were encountered during analysis.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:
QC was within specification.

DATA INTERPRETATION:
No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Sandra J. Miller Date: 4-29-05
Sandra J. Miller
Specialist

0012

Chain of Custody

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 3074 Group# 93960 Sample # 450547-68

COC # 0080178

temp 2.1-3.5°C

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: Blasland Bouck & Lee — Acct. #:
Project Name/#: Hackensack River — PWSID #:
Project Manager: — P.O.#:
Sampler: Jason Gutkowski — Quote #:
Name of state where samples were collected: NJ

For Lab Use Only
FSC:
SCR #:

(6)

(2) Sample Identification	Date Collected	Time Collected	(3)	(4)	(5) TOC	Grain Size	TOC MS/MSD	Remarks
HRFRSED012A-01	4-13-05	0830	X	X Z	X	X		
HRFRSED020A-01		0910		Z	X	X		
HRFRSED019A-01		0933		Z	X	X		
HRFRSED010A-01		1034		Z	X	X		
HRFRSED018A-01		1057		Z	X	X		
HRFRSED017A-01		1125		Z	X	X		
HRFRSED001A-01		1239		Z	X	X		
HRFRSED002A-01		1257		Z	X	X		
HRFRSED003A-01		1327		3	X	X	X	
HRFRSED011A-01		1354		Z	X	X		

(7) **Turnaround Time Requested** (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) **Data Package Options** (please circle if required)
QC Summary — Type VI (Raw Data)
Type I (Tier I) — GLP
Type II (Tier II) — Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? (Yes) No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Jason Gutkowski	4/14/05	1600			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by: Jason Gutkowski	4/15/05	0915

(9)

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102 Rev. 10/27/02

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 3074 Group# 939680 Sample # 4504547-68

COC # 0080180

temp 2.1-3.5°C

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: Blasland Bouck & Lee Acct. #:
Project Name/#: Hackensack River PWSID #:
Project Manager: P.O.#:
Sampler: Jason Gutkowski Quote #:
Name of state where samples were collected: NJ

For Lab Use Only
FSC:
SCR #: 1202230

(2) (3) (4) (5) Analyses Requested (6)

Sample Identification	Date Collected	Time Collected	(3)					(4)	Total # of Containers	TOC	Grain Size							Remarks
HRFRSED009A-01	4-13-05	1422	X					X	2	X	X							
HRFRSED008A-01	↓	1439	↓					↓	2	X	X							
HRFRSED007A-01		1505							2	X	X							
HRFRSED016A-01		1518							2	X	X							
HRFRSED006A-01		1527							2	X	X							
HRFRSED005A-01		1600							1		X							
HRFRSEDDUP1-1		—							1	X								
HRFRSEDDUP2-1	↓	—							1		X							
HRFRSED015A-01	4-14-05	0717							2	X	X							
HRFRSED014A-01	↓	0741	↓					↓	2	X	X							

(7) Turnaround Time Requested (TAT) (please circle): Normal (circled) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) Data Package Options (please circle if required)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes (circled) No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	4/14/05	1600	Jason Gutkowski [signature]	4/14/05	0800
Jason Gutkowski [signature]	4/14/05	1600			
			[signature]	4/15/05	0915

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102 Rev. 10/27/02

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 3074 Group# 939682 Sample # 450451-90-91

COC # 0080181

Please print. Instructions on reverse side correspond with circled numbers.

temp 2.1 - 3.5°C

(1) Client: Blasland Bouck & Lee Acct. #:
Project Name/#: Hackensack River PWSID #:
Project Manager: P.O.#:
Sampler: Jason Gutkowski Quote #:
Name of state where samples were collected: NJ

For Lab Use Only
FSC:
SCR #: 120220

(2) Sample Identification	Date Collected	Time Collected	(3) Matrix	(4) # of Containers	Analyses Requested: TOC	Grain Size	(5)	(6) Remarks
HRFRSED013A-01	4-14-05	0808	X	2	X	X		
HRFRSED012A-01	4-14-05	0838	X	2	X	X		
HRFRRB1-1	4-13-05	1100	X	1	X			
HRFRRB2-1	4-14-05	0840	X	1	X			

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) **Data Package Options** (please circle if required)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
	4/14/05	1600	Jason Gutkowski	4/13/05	0800
Jason Gutkowski	4/14/05	1600		Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
			Jessa Zook	4/15/05	0915

(9)

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102 Rev. 10/27/02

Appendix J

Select Mudflat Photographs

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Mudflat 1: steep eroded bank with varying extent of mudflat present; some riprap; intermittent *S. alterniflora* fringe

Mudflat 2: variable flat width with an intermittent *S. alterniflora* fringe; picture is representative of slope, bank configuration, and vegetative composition of the entire flat

Mudflat 3: small, cove-shaped depositional mudflat

Mudflat 4: composed of depositional flats, remnant pilings, a rock outcrop, and a small tidal tributary (not visible, located perpendicular to shore behind old pilings)

Mudflat 5: sparse *S. alterniflora* fringe

Mudflat 6: cove-shaped depositional area; flow from Outfall 8 apparently cut drainage channel into flat (visible in bottom picture)

Mudflat 7: depositional area on downstream side of bridge abutments; high water marks visible on rocks on left side of frame

Mudflat 8: piling remnants just out of picture at left; mudflat more pronounced near rock pile in right of picture

Mudflat 9: tidal creek and mudflats at low tide; remnant pilings and steep bank present in areas; intermittent *S. alterniflora* fringe

Mudflat 10: large pile of concrete rubble present; S. alterniflora fringe present at base of landfill; P. australis-dominated upper marsh bank

Mudflat11: bottom right picture shows transition from mudflat to sloped riprap bank; *S. alterniflora* fringe

Mudflat 11 (cont.): western end of sloping intertidal flat; riprap stabilized upper bank; sparse *S. alterniflora* fringe

Appendix K

Outfall/Tide Gate Photographs

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Outfall 1: two vertical valves in concrete bulkhead, light flow, discharge channel cut through mudflat

Outfall 2: concrete bulkhead with steel pipe/vertical valve, discharge channel cut along the top of the marsh

Outfall 4: concrete, elliptical-shaped

<u>Outfall 5:</u> concrete pipe, strong petroleum odor, visible product discharging from the pipe and on the water surface, containment features (sorbent socks held within chicken-wire fence) present around outfall of pipe, floating containment boom present in water (laying on shoreline during low tide)

Outfall 5 (cont.): concrete pipe, strong petroleum odor, product visible discharging from the pipe and on the water surface, containment features (sorbent socks held within chicken-wire fence) present around outfall of pipe, floating containment boom present in water (laying on shoreline during low tide)

Outfall 6: concrete, elliptical-shaped, near Transco gas pipeline crossing

Outfall 7: concrete, elliptical-shaped

Outfall 8: horizontal flap gate, discharge channel cut through mudflat

Outfall 9: within PSEG operations area, actively discharging within containment boom

Outfall 10: located along PSEG shoreline between operations area and canal

Outfall 11: in-line with building in background of photo, at north end of PSEG operations area

Outfall 12: steel pipe, appears sealed, located along shore-line of PSEG property between canal and operations area

Outfall 13: concrete pipe, located in PSEG canal

Outfall 14: two outfall pipes with heavy flow discharging from bulkhead at the terminus of the canal adjacent to the PSEG canal, discolored water, odor and foam present

Outfall 15: vertical positive pressure “duckbill”, discharge cut channel through mudflat

Outfall 16: flap gate, not actively flowing during observation

Tide Gate 1

Tide Gate 2

Tide Gate 3

Tide Gate 4

Appendix L

Habitat/Shoreline Characterization DVD

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists