SDMS Document
94653

Diamond Alkali Co.
NJD980528996
8.1.2
Passaic Valley Sewerage Commissioners

Passaic Valley Sewerage Commissioners
Response to Request for Information
USEPA, Region 2

Item No. 10.c
PVSC Presentation

Document order #38

946530001

NUTRIENT PROGRAM

Supplemental Nutrient Sampling and Analysis for the New Jersey Harbor

February 1996

Prepared By

GLEC

Great Lakes Environmental Center

946530002

10(c) Presentation

Folder 10b
DVSC
10c

Sample Collection Dates

Eight Sampling Events (January - September 1995)

- January 25-27, 1995
- February 25-26, 1995
- March 31 - April 4, 1995
- May 22-23, 1995
- June 14-16, 1995
- July 23-27, 1995
- August 25-26, 1995
- September 27-28, 1995

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Parameters Measured Approximately Monthly for Nine Months

- Dissolved Inorganic Nutrients
- Dissolved Organic Phosphorus
- Particulate Carbon
- Particulate Phosphorus
- Total Phosphorus
- Total Nitrogen
- Biogenic Silica
- BOD Total 5-day
- BOD Filtered 5-day

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Parameters Measured Quarterly
(Two Events)

- Primary Productivity O_2
- Solid Phase
- Acid Volatile Sulfides (AVS)
- Chromium Reduced Sulfide
- Carbonate
- Calcium (Ca), Iron (Fe), and Manganese (Mn)
- Inorganic Phosphorus
- Pore Water / Benthic Flux / Methane Flux / Redox Zone Depth
- Hydrogen Sulfide, Chloride, and Sulfate
- Methane (0-10 cm) and Methane (10-20 cm)

946530005

Effluent Sample Collection
POTW's

- Edgewater
- North Bergen (2 locations)
- Secaucus
- Tri City - Hoboken
- West New York

Effluent Sample Parameters Analyzed

- Dissolved Inorganic Phosphate
- Dissolved Inorganic and Organic Carbon
- Dissolved Organic Phosphorus
- Dissolved Organic Nitrogen
- Dissolved Silicate
- Particulate Carbon / Particulate Phosphorus / Particulate Nitrogen
- Total Phosphorus
- BOD Total 5-day
- BOD Total 30-day
- Dissolved Ammonia / Dissolved Nitrate + Nitrite

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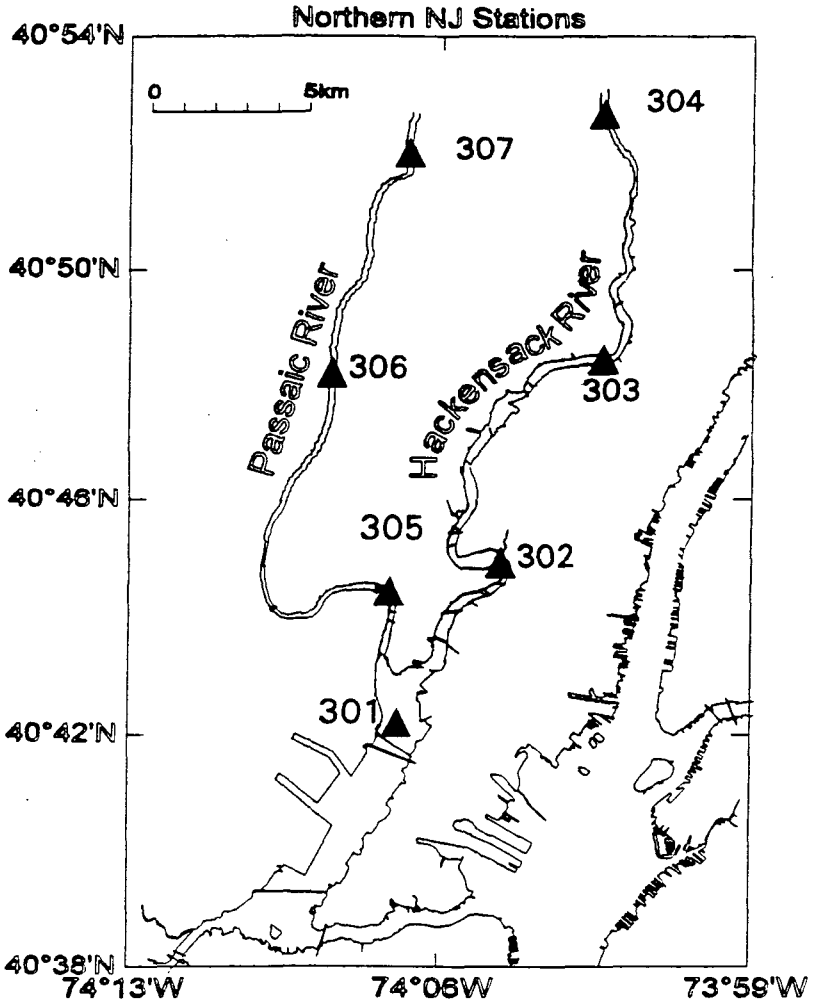
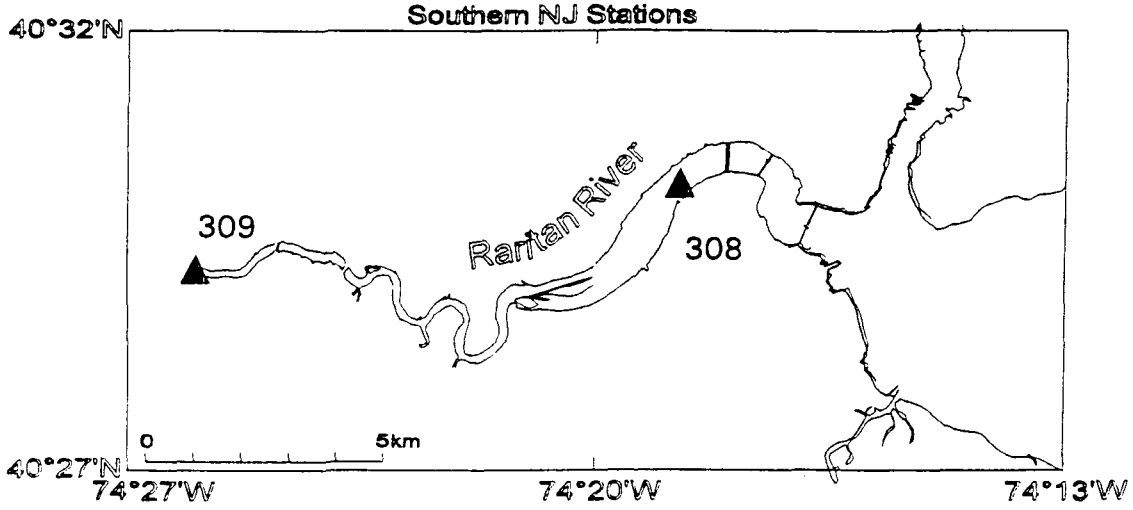
Stations Sampled for the NJHDG Nutrient Program





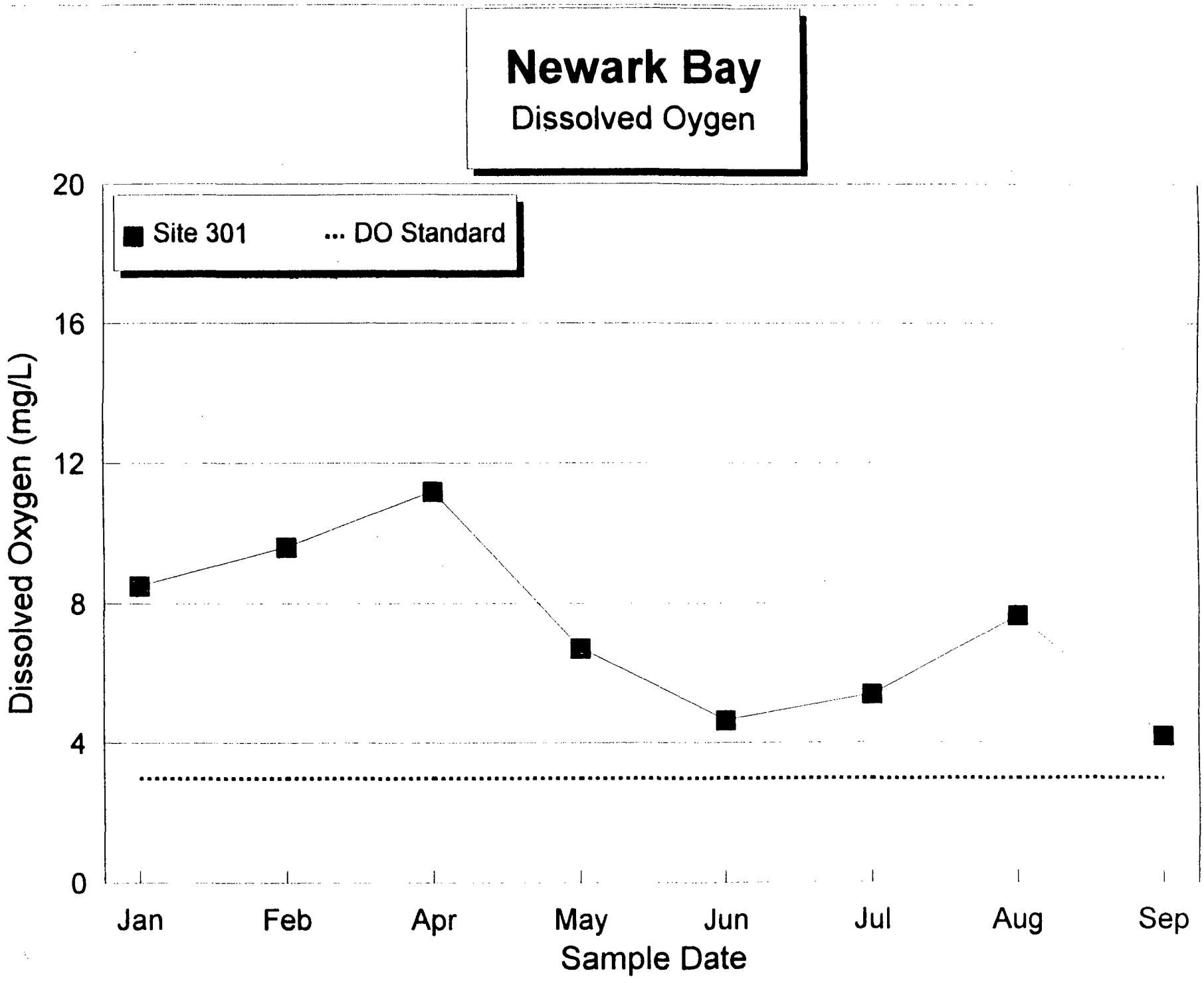
946530008

Sampling Station Descriptions for Nutrient Program

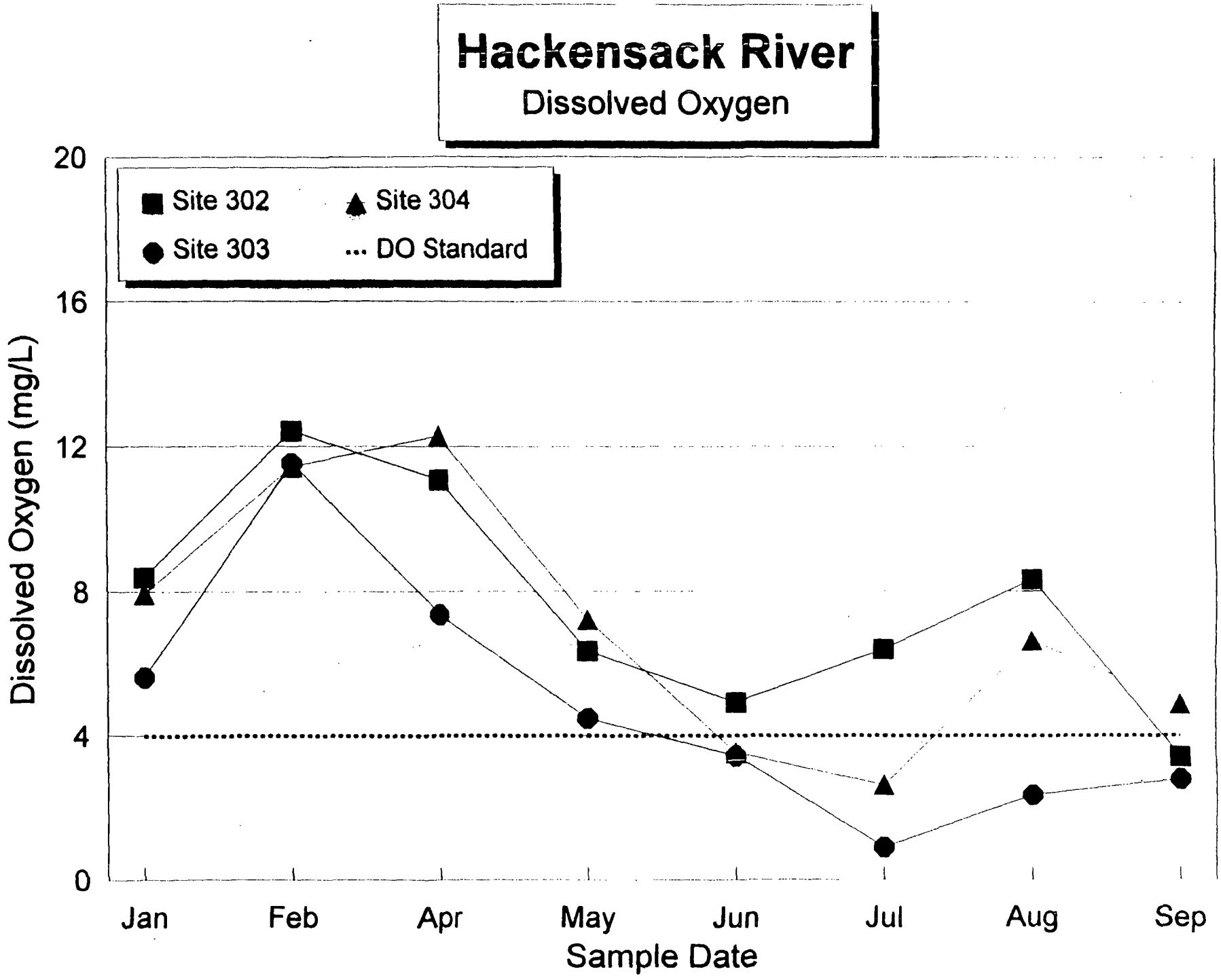
- Site 301 - Newark Bay - Interstate 78 Bridge
- Site 302 - Hackensack River - Hudson generating station
- Site 303 - Hackensack River - Cromakill Creek
- Site 304 - Hackensack River - Court Street Bridge
- Site 305 - Passaic River - New Jersey Turnpike Bridge
- Site 306 - Passaic River - Avondale Bridge
- Site 307 - Passaic River - Eighth Street Bridge
- Site 308 - Raritan River - Red Root Reach/Titanium Reach
- Site 309 - Raritan River - Ratcliff University Boat Club

PRELIMINARY CONCLUSIONS

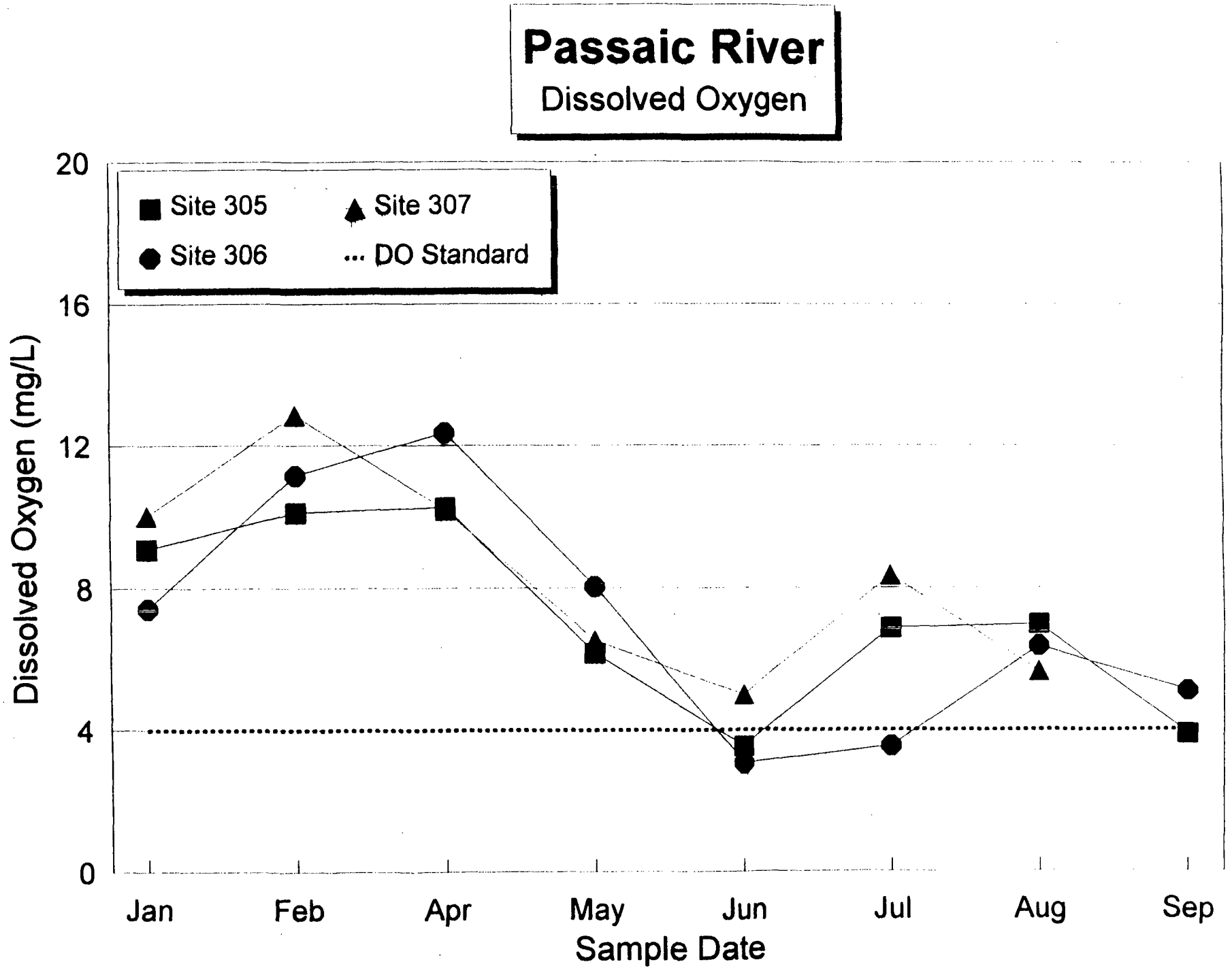
- √ Contraventions of the dissolved oxygen standard were generally measured in the months of June and July
- √ Chlorophyll a values are substantially higher in the rivers than in Newark Bay


Newark Bay
Dissolved Oygen
Site 301
DO Standard
Dissolved Oxygen (mg/L)
20
16
12
8
4
0
Jan
Feb
Apr
May
Jun
Jul
Aug
Sep
Sample Date

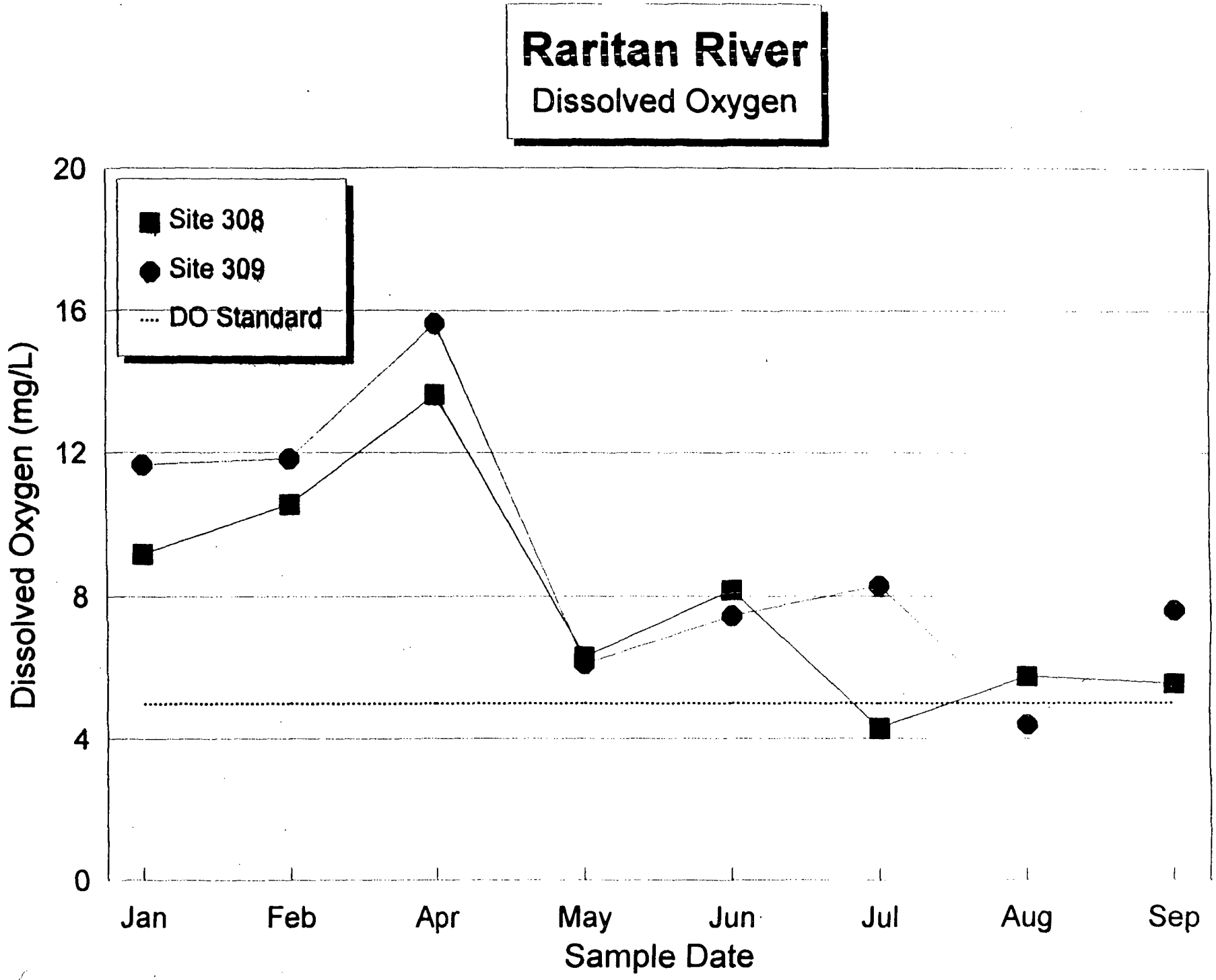
946530011


Hackensack River
Dissolved Oxygen
Site 302
Site 304
Site 303
DO Standard
Dissolved Oxygen (mg/L)
20
16
12
8
4
0
Jan
Feb
Apr
May
Jun
Jul
Aug
Sep
Sample Date

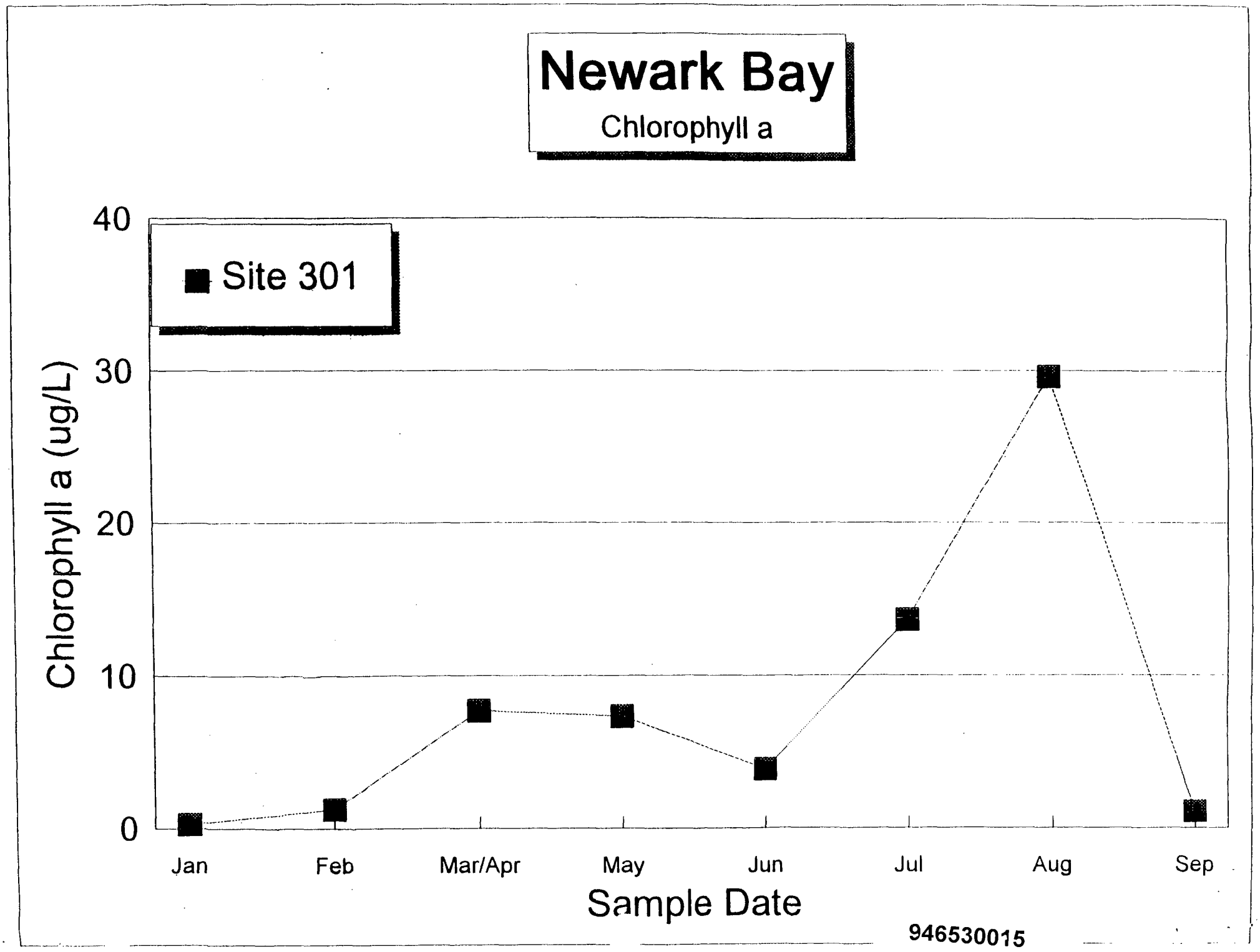
946530012

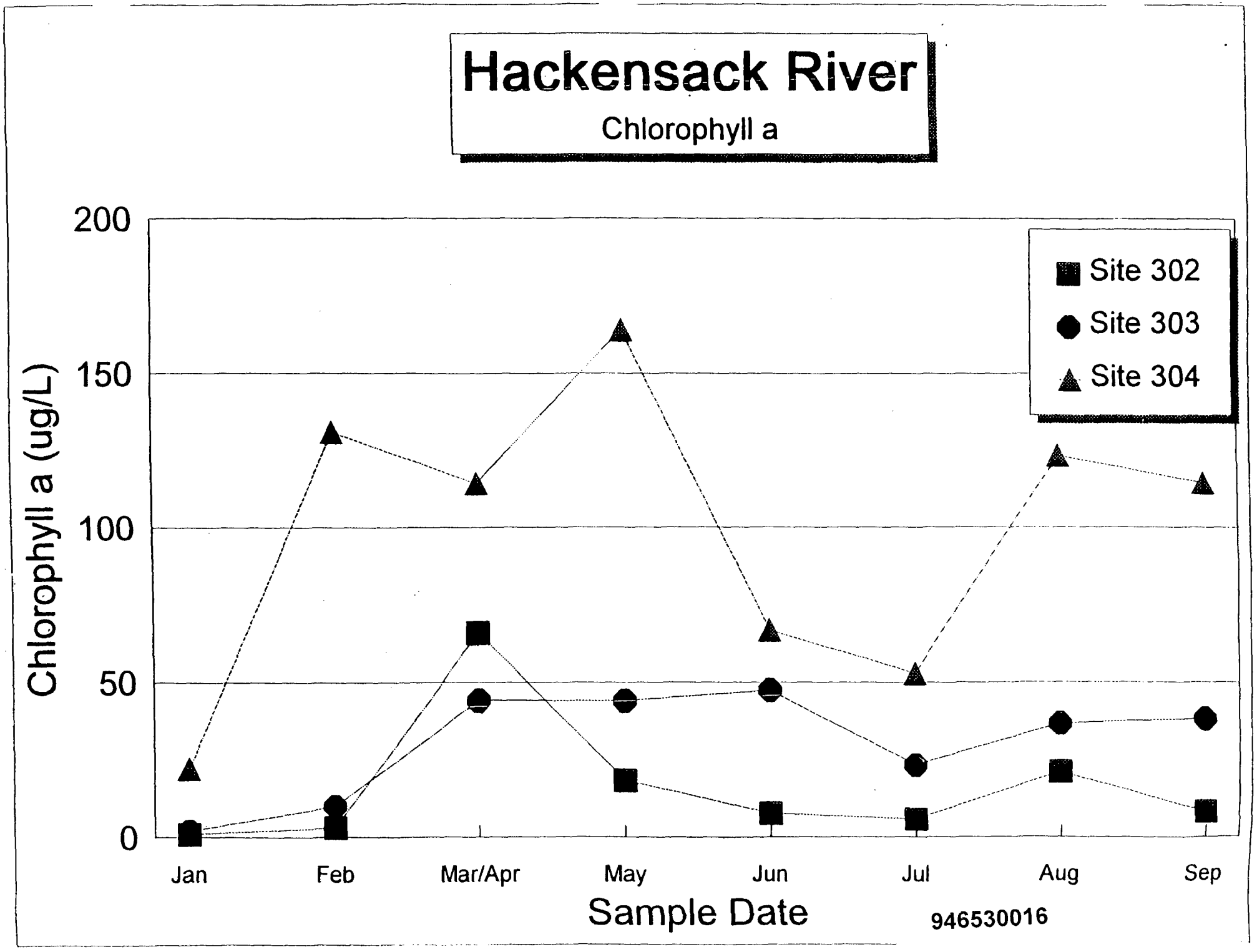

Passaic River
Dissolved Oxygen
Site 305
Site 307
Site 306
DO Standard
Dissolved Oxygen (mg/L)
20
16
12
8
4
0
Jan
Feb
Apr
May
Jun
Jul
Aug
Sep
Sample Date

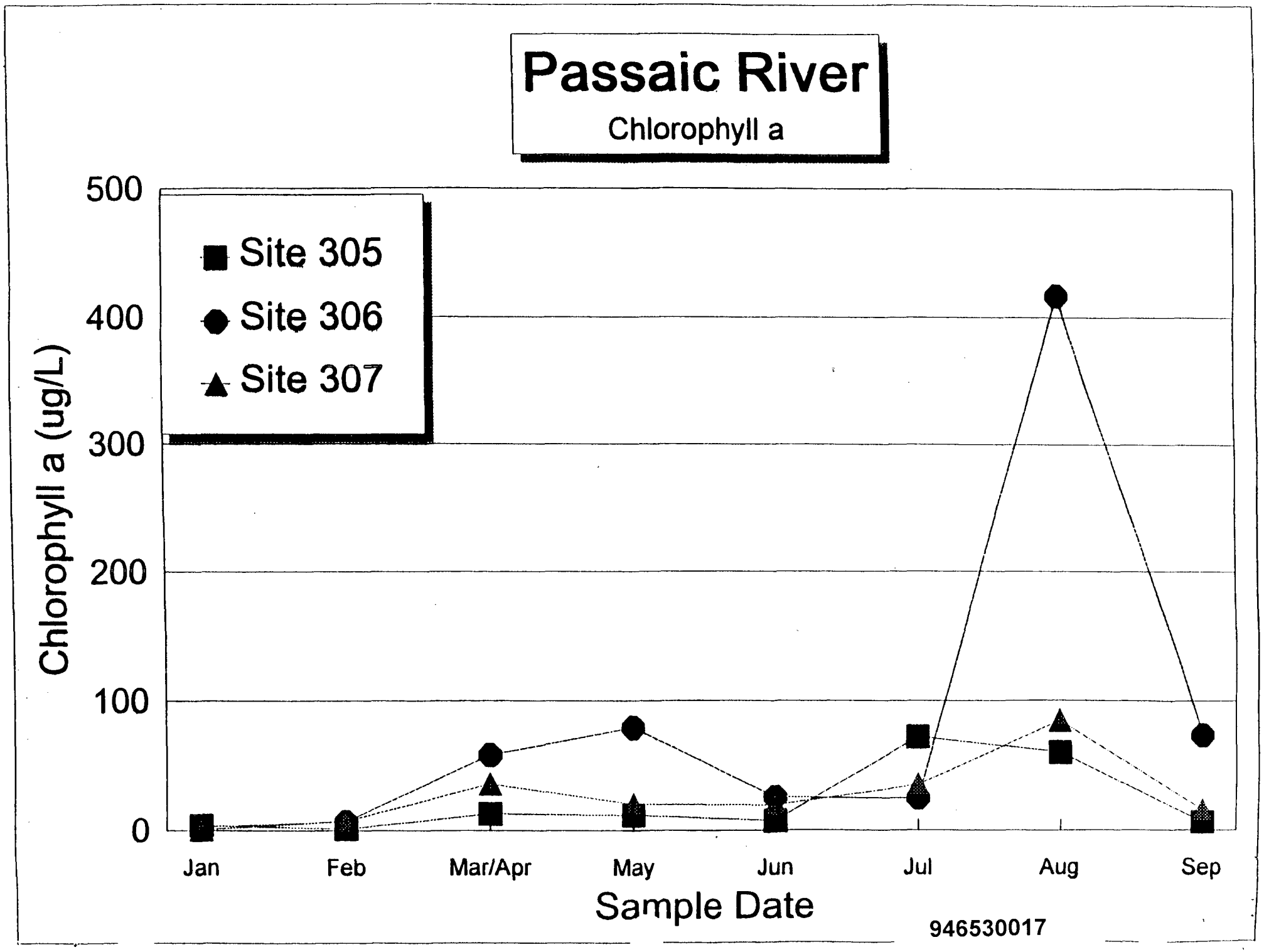
946530013

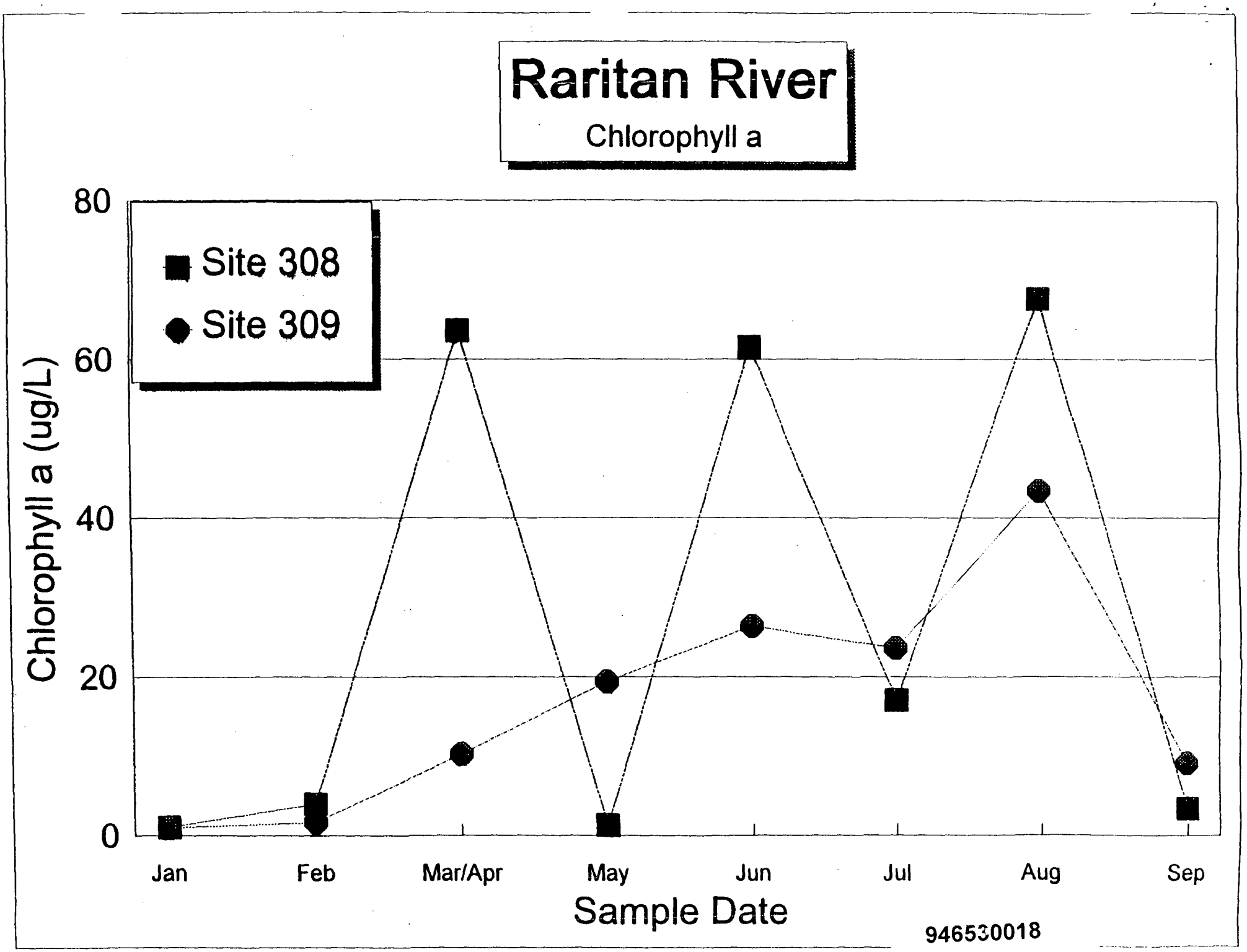

Raritan River
Dissolved Oxygen
Site 308
Site 309
DO Standard
Dissolved Oxygen (mg/L)
20
16
12
8
4
0
Jan
Feb
Apr
May
Jun
Jul
Aug
Sep
Sample Date

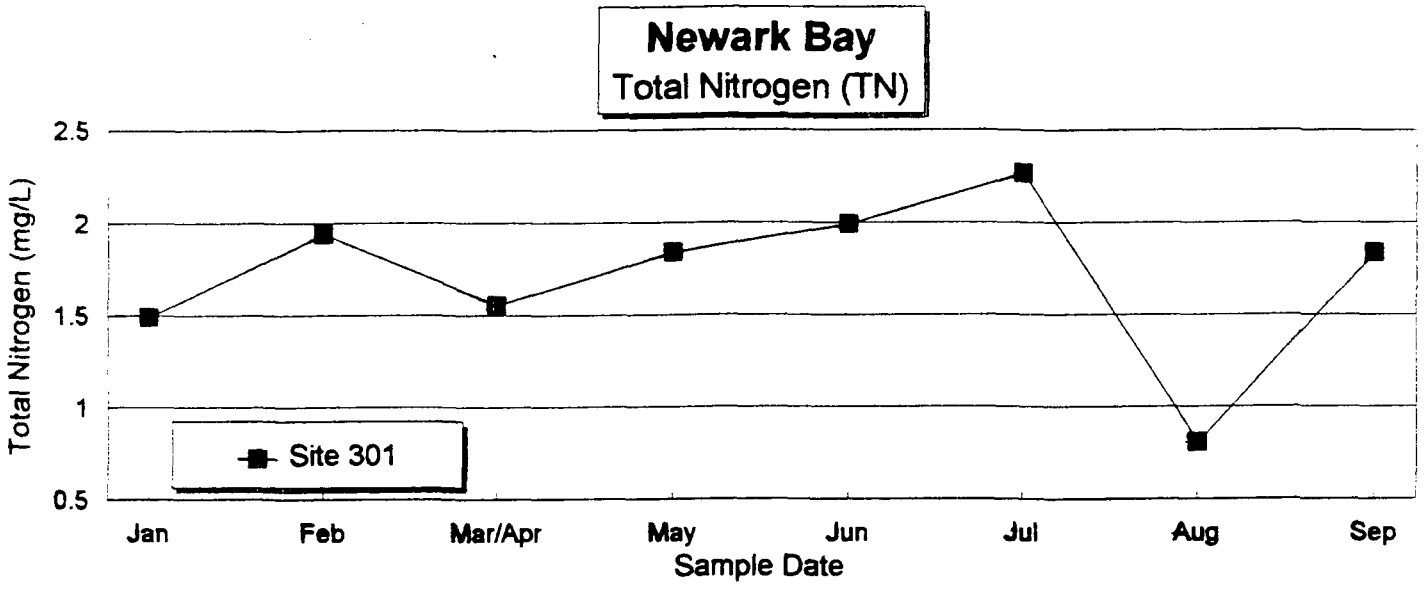
946530014

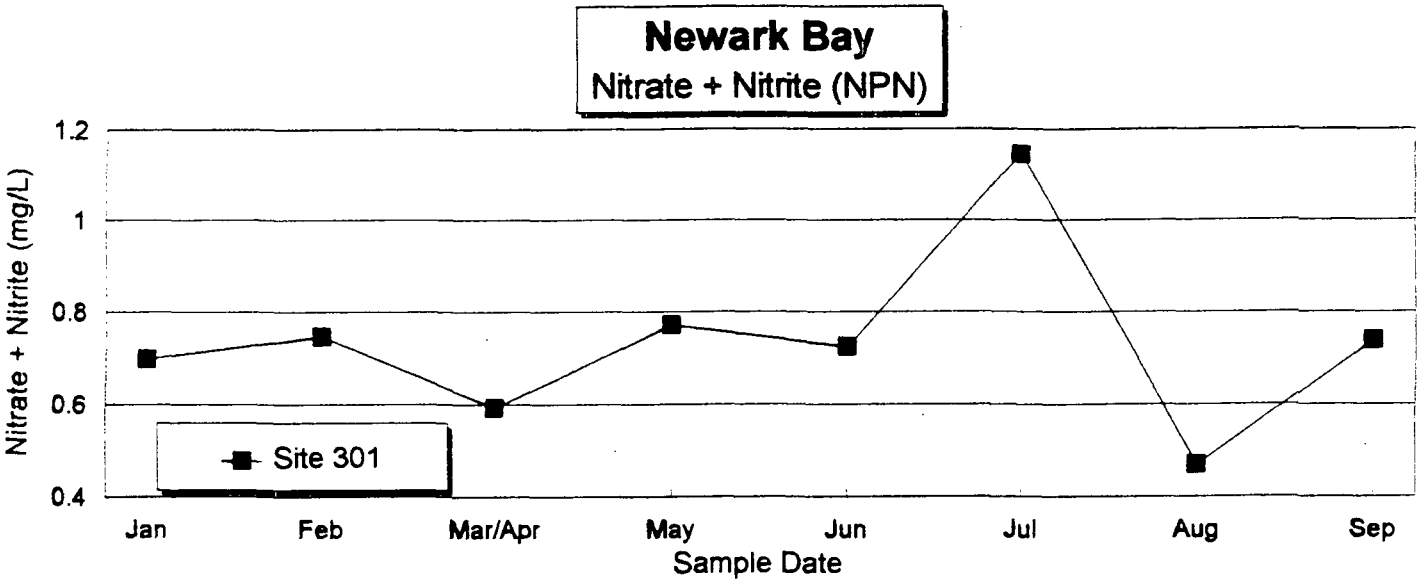

Newark Bay
Chlorophyll a
Site 301
Chlorophyll a (ug/L)
40
30
20
10
0
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date
946530015

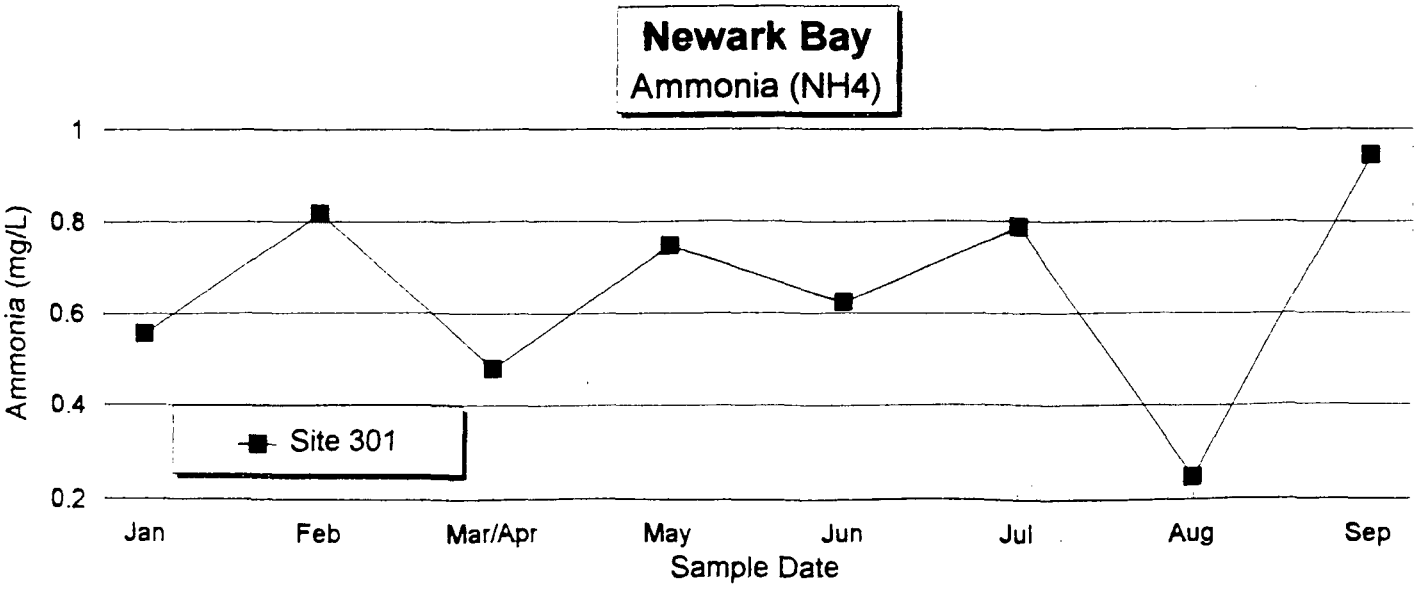

Hackensack River
Chlorophyll a
Site 302
Site 303
Site 304
Chlorophyll a (ug/L)
200
150
100
50
0
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date
946530016

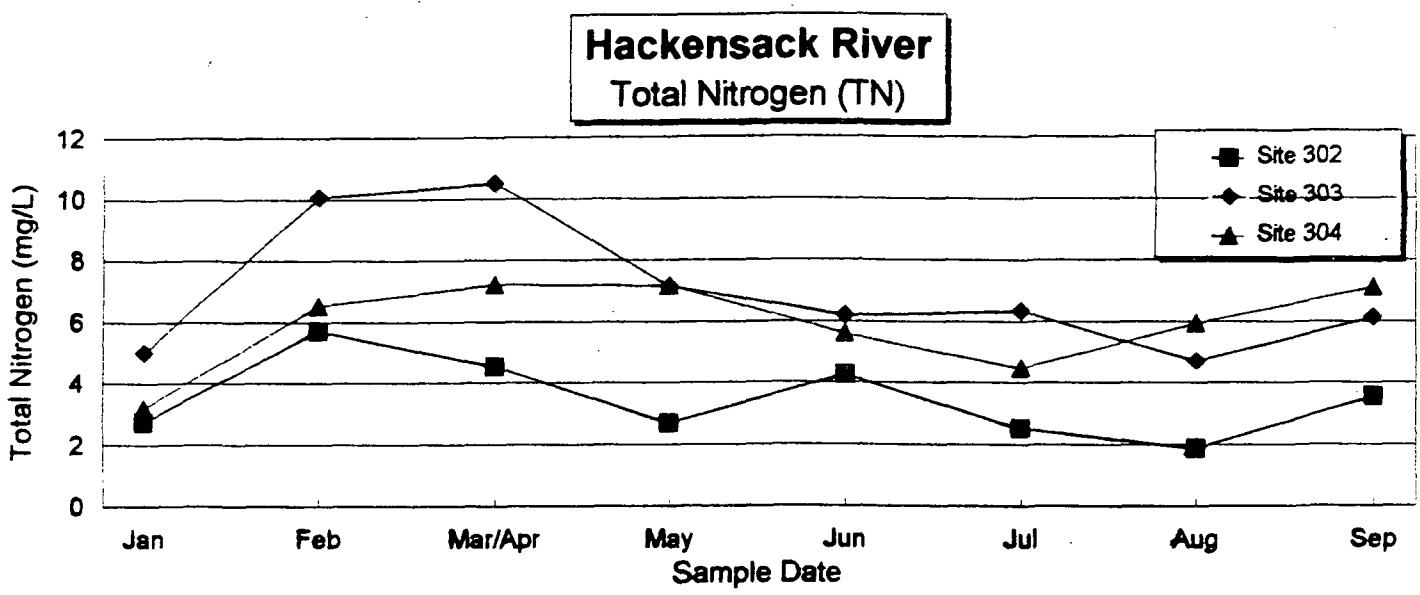

Passaic River
Chlorophyll a
Site 305
Site 306
Site 307
Chlorophyll a (ug/L)
500
400
300
200
100
0
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date
946530017

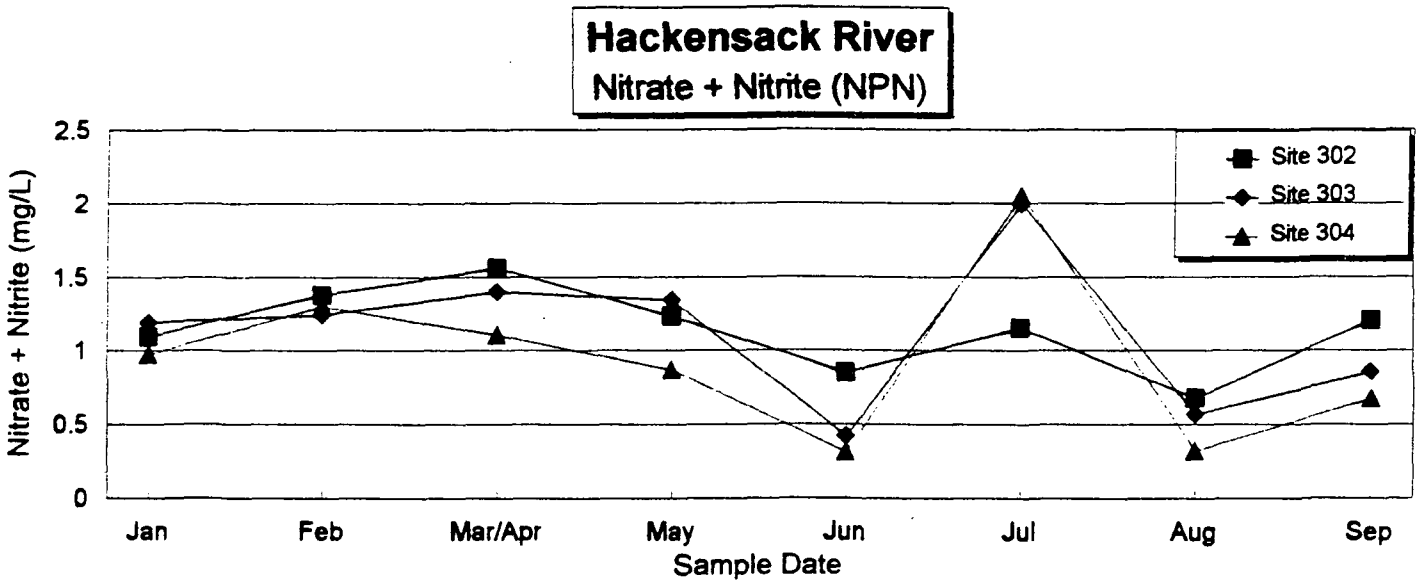

Raritan River
Chlorophyll a
Site 308
Site 309
Chlorophyll a (ug/L)
80
60
40
20
0
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date
946530018

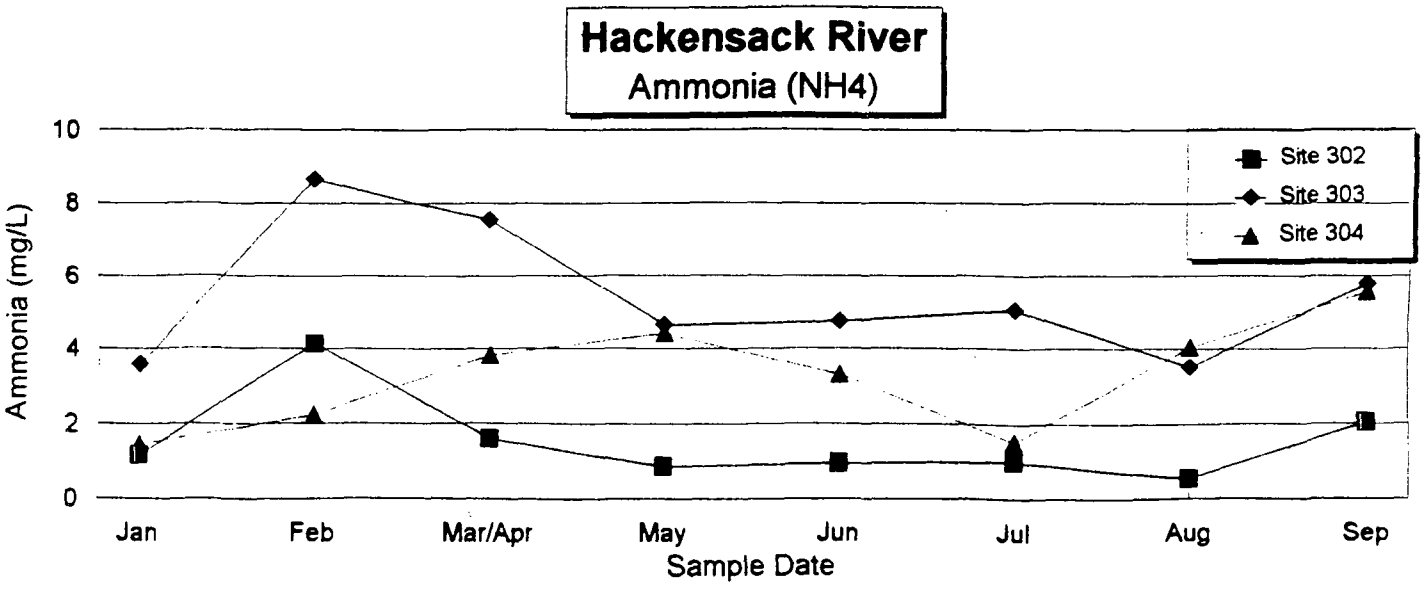

Newark Bay
Total Nitrogen (TN)
Total Nitrogen (mg/L)
2.5
2
1.5
1
0.5
Site 301
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date


Newark Bay
Nitrate + Nitrite (NPN)
Nitrate + Nitrite (mg/L)
1.2
1
0.8
0.6
0.4
Site 301
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date

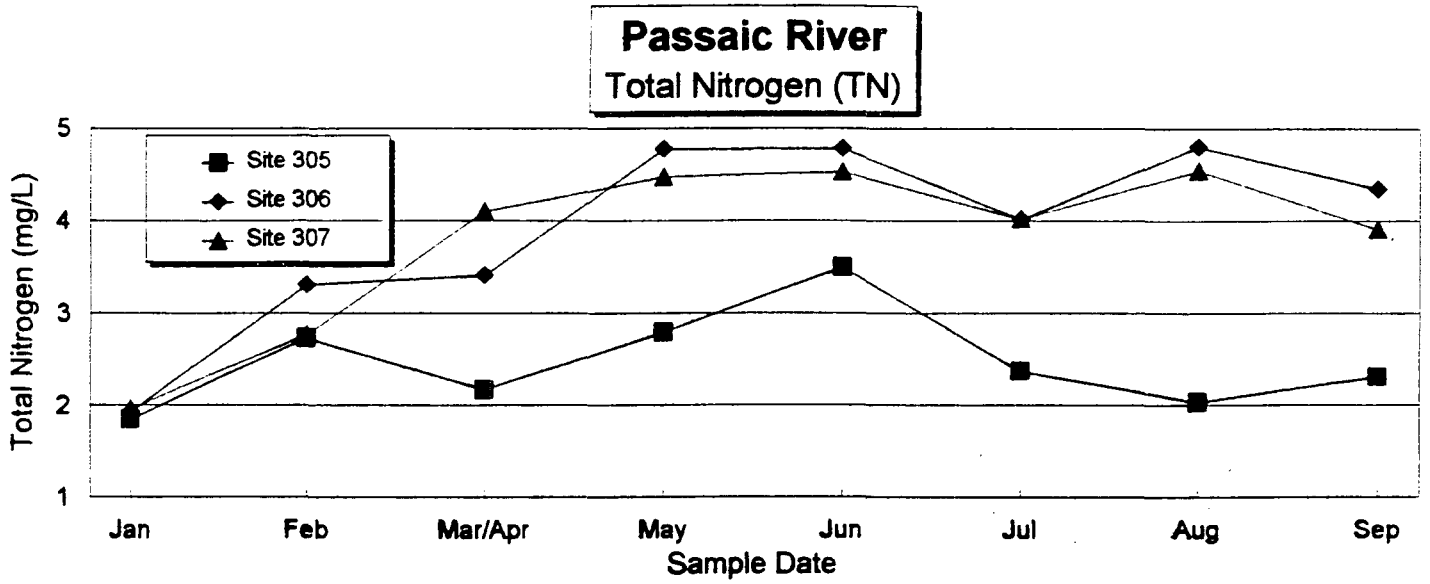

Newark Bay
Ammonia (NH4)
Ammonia (mg/L)
1
0.8
0.6
0.4
0.2
Site 301
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date

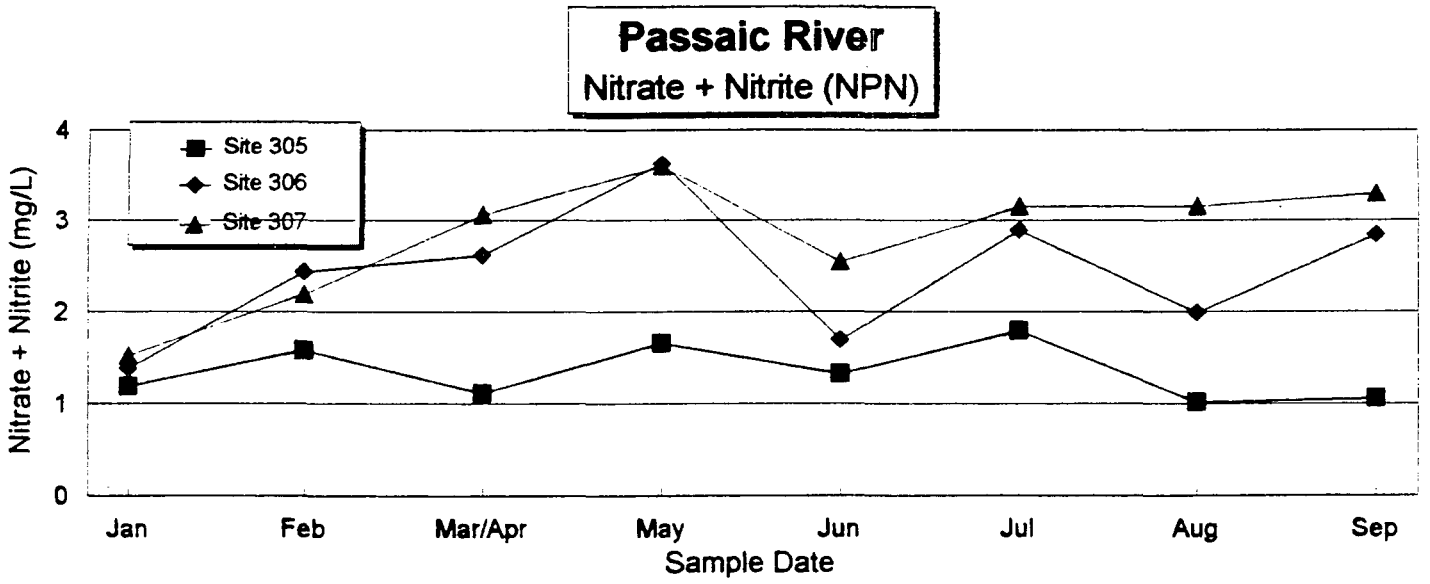

Hackensack River
Total Nitrogen (TN)
Total Nitrogen (mg/L)
12
10
8
6
4
2
0
Site 302
Site 303
Site 304
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date

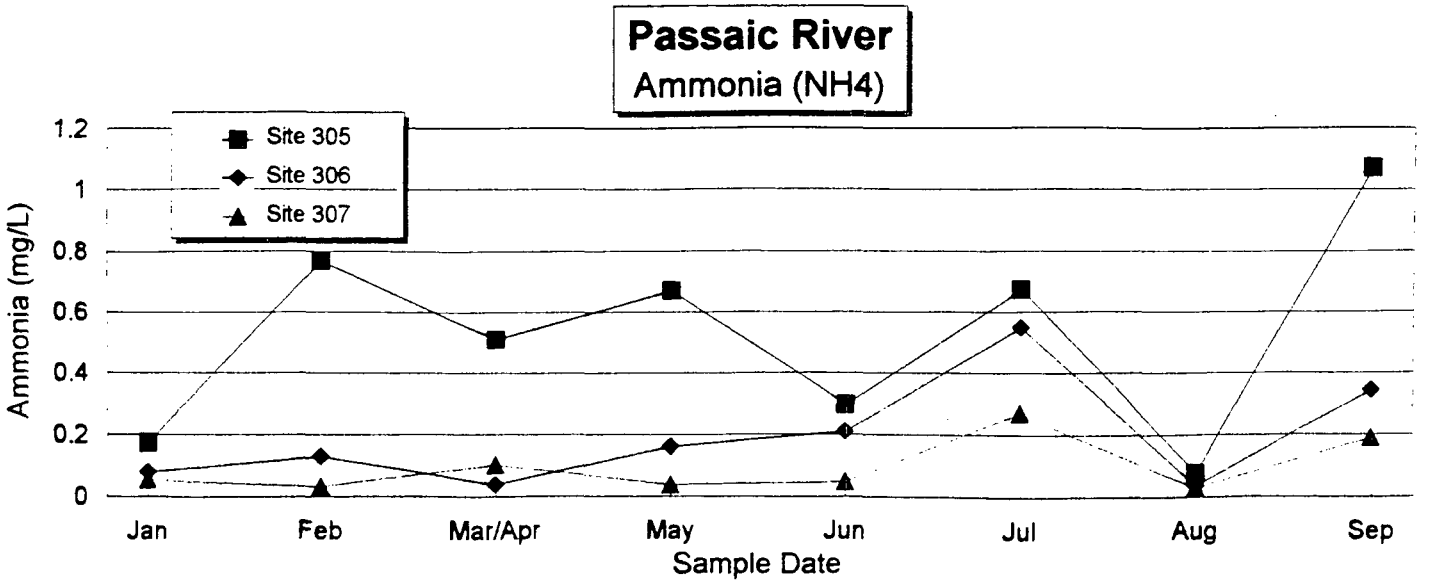

Hackensack River
Nitrate + Nitrite (NPN)
Nitrate + Nitrite (mg/L)
2.5
2
1.5
1
0.5
0
Site 302
Site 303
Site 304
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date

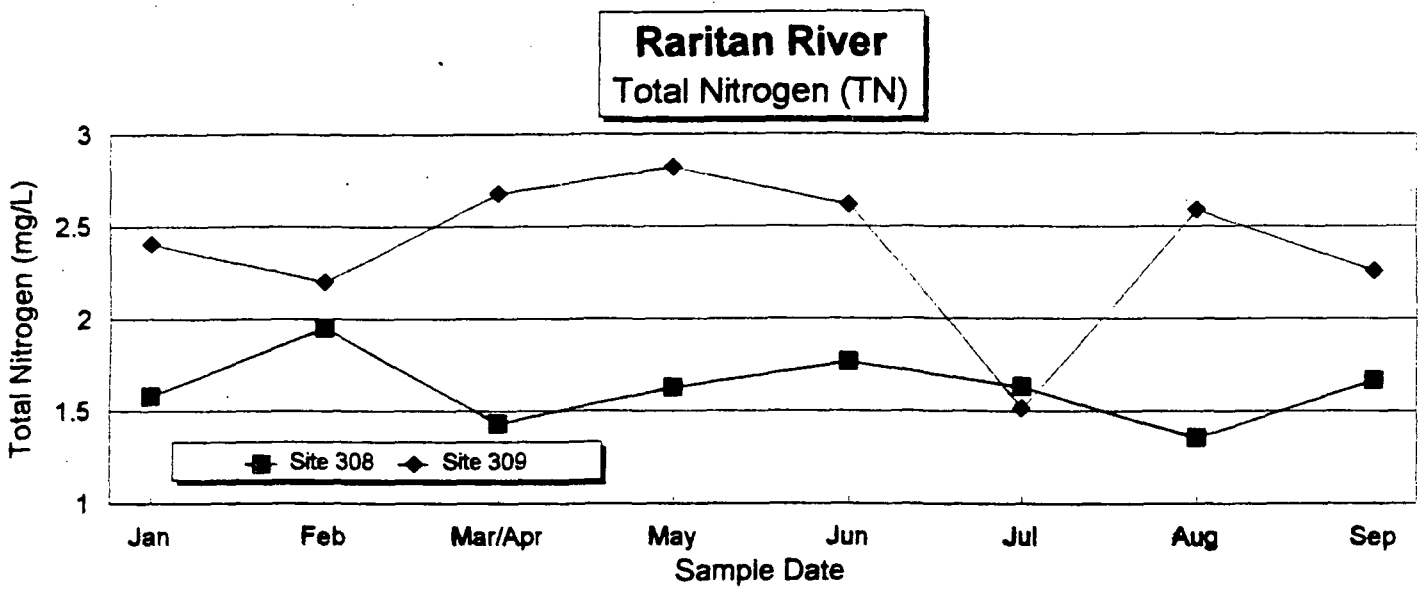

Hackensack River
Ammonia (NH4)
Ammonia (mg/L)
10
8
6
4
2
0
Site 302
Site 303
Site 304
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date

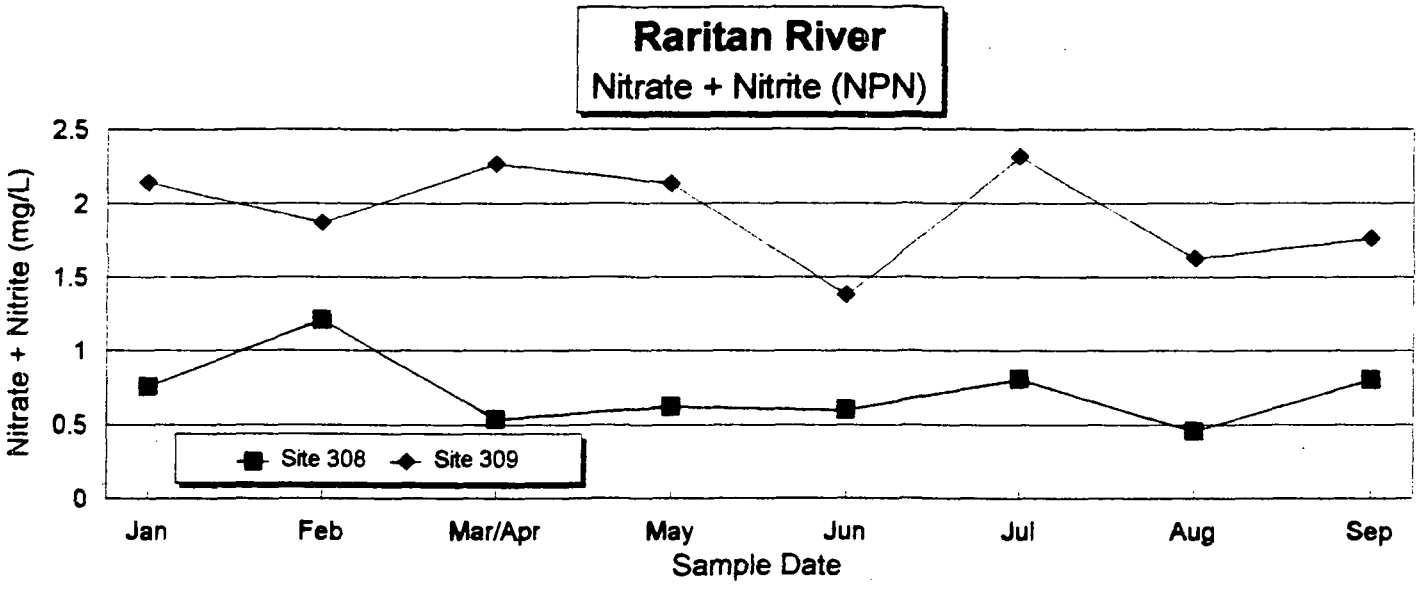
946530020

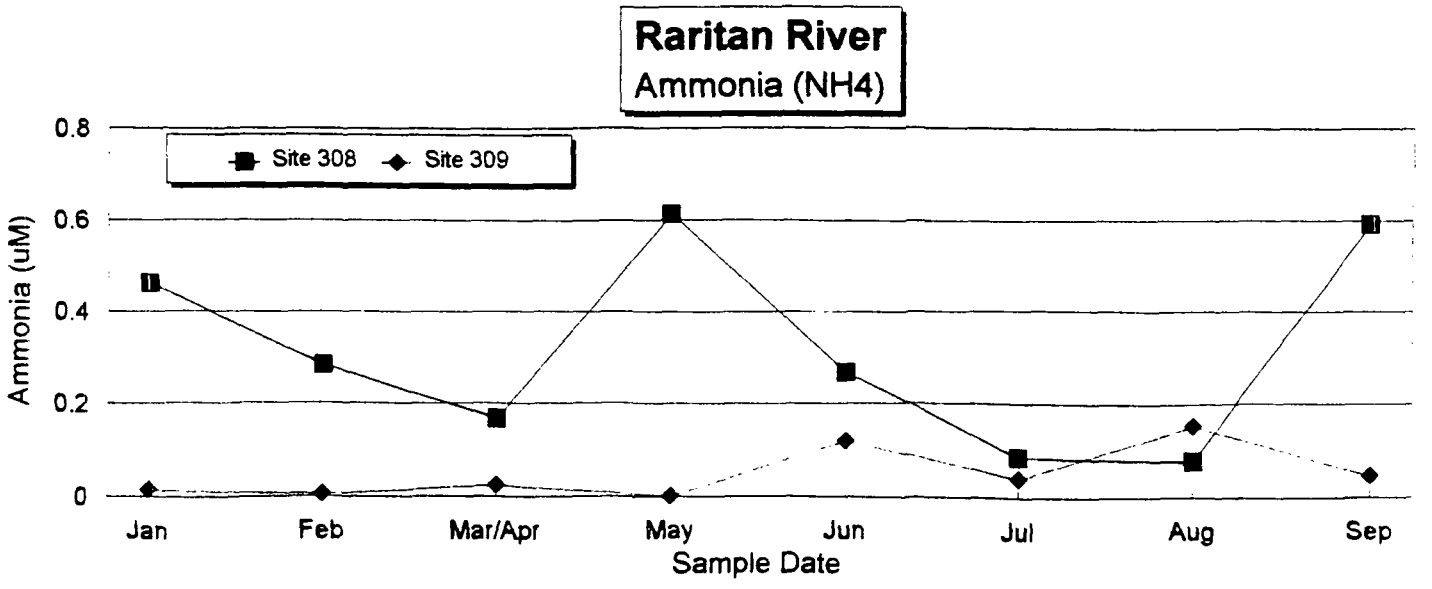

Passaic River
Total Nitrogen (TN)
Site 305
Site 306
Site 307
Total Nitrogen (mg/L)
5
4
3
2
1
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date


Passaic River
Nitrate + Nitrite (NPN)
Site 305
Site 306
Site 307
Nitrate + Nitrite (mg/L)
4
3
2
1
0
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date


Passaic River
Ammonia (NH4)
Site 305
Site 306
Site 307
Ammonia (mg/L)
1.2
1
0.8
0.6
0.4
0.2
0
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date


Raritan River
Total Nitrogen (TN)
Total Nitrogen (mg/L)
3
2.5
2
1.5
1
Site 308
Site 309
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date


Raritan River
Nitrate + Nitrite (NPN)
Nitrate + Nitrite (mg/L)
2.5
2
1.5
1
0.5
0
Site 308
Site 309
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date


Raritan River
Ammonia (NH4)
Ammonia (uM)
0.8
0.6
0.4
0.2
0
Site 308
Site 309
Jan
Feb
Mar/Apr
May
Jun
Jul
Aug
Sep
Sample Date

946530022