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NAS CECIL FIELD
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LETTER DISCUSSING VISIBLE SIGNS OF PETROLEUM CONTAMINATION AT OPERABLE UNIT 3 (OU 3) NAS CECIL FIELD FL
11/12/1993
ABB ENVIRONMENTAL

ABB

15 OCT 93 10:09

November 12, 1993

Joel Murphy
Code 1853
SOUTHNAVFAC ENG COM
P.O. Box 190010
North Charleston, SC 29419-9010

Mr. Murphy,

On September 14-15, 1993, ABB-ES completed a characterization of the St. Johns River adjacent to OU 3 at NAS Jacksonville. This task was necessary to characterize the river habitat that may be exposed to potential OU 3-related contaminants and provide a basis to justify a quantitative biomonitoring investigation during the RI.

Sediments were collected along 10 transects perpendicular to the shore, between the active fuel dock at the north end and Black Point at the south end of OU 3 (see attached map). Visible signs of petroleum contamination were observed approximately 150 meters south of the fuel dock at sample location 1D, the deepest station at transect 1. Further evidence of petroleum contamination was also observed at the deepest station within the second transect (2D) and one of the deeper stations in the third transect (3D). The presence of petroleum was evident in the three aforementioned samples due to a strong petroleum odor and visible sheen.

Please do not hesitate to call either Janet Burris at (703) 769-8168 or myself (703) 769-8127 with any questions regarding the aquatic characterization at OU 3.

Sincerely yours,

Anita Pease

Anita Pease
Senior Ecologist

cc: Janet Burris
Peter Redfern
File

ABB Environmental Services Inc.

2120 Washington Boulevard, Suite 300 Tel. (703) 769-8181 Fax (703) 769-8182
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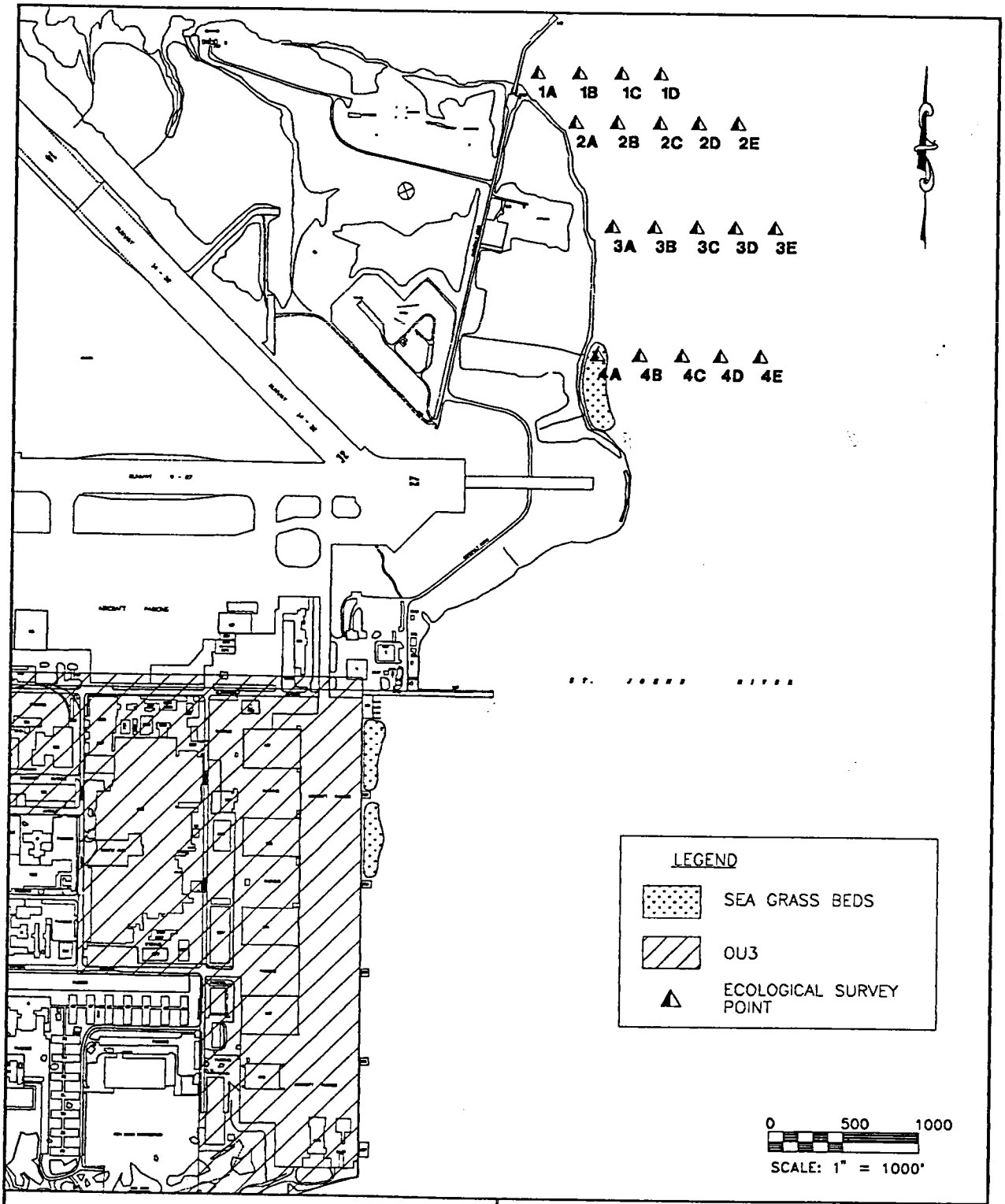

FIGURE 1
ECOLOGICAL SURVEY POINT LOCATIONS

SCOPING STUDY FOR OU3

NAS JACKSONVILLE
JACKSONVILLE, FLORIDA

JAX200/DRM/11-12-93

cc: W. MURRAY
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MEMORANDUM

PROJECT NO.: 758635 **DATE:** September 22, 1993

PROJECT DESCRIPTION: NAS Jacksonville

TO: Peter Redfern

FROM: Anita Pease AP

SUBJECT: Trip Report of the OU 3 Aquatic Habitat Characterization

Characterization of the aquatic habitat, including the segment of the St. Johns River adjacent to OU 3 at NAS Jacksonville, was completed on September 14-15, 1993. This task was necessary to characterize the river habitat that may be exposed to potential OU 3-related contaminants and provide a basis to justify a quantitative biomonitoring investigation during the RI.

A trip report of the aquatic habitat characterization is enclosed. Please contact me at (703) 769-8127 or Janet Burris at (703) 769-8168 if you have any questions.

DISTRIBUTION:
Janet Burris
Franco Godoy
Greg Beumel
Norm Richardson
File

Trip Report
NAS Jacksonville OU 3 Aquatic Habitat Characterization
14 September to 15 September 1993

This trip report summarizes the aquatic habitat characterization at Operable Unit (OU) 3 completed by ABB Environmental Services, Inc. (ABB-ES) at Naval Air Station (NAS) Jacksonville from 14 September to 15 September 1993. This task was completed to characterize the St. Johns River habitat that may be exposed to potential OU 3-related contaminants and provide a basis to justify a quantitative biomonitoring investigation during the Remedial Investigation (RI). Specifically, a survey of the sea grass beds on the western shore of the St. Johns River adjacent to OU 3 was completed.

OVERVIEW OF SITE VISIT. The following paragraphs provide a summary of the aquatic habitat characterization completed by ABB-ES. A figure showing the locations of the transects is provided. The characterization was conducted by Ms. Janet Burris and Ms. Anita Pease.

Tuesday, September 14, 1993

Ms. Burris and Ms. Pease arrived at the NAS Jacksonville marina at approximately 9:00 am. They met with Mr. Richard Mackowsky of NAT, who guided the boat during the survey.

Using a site map, 10 transects were established in the St. Johns River, perpendicular to the shore, between the active fuel dock at the north end and Black Point at the south end of OU 3. Depending on depth, sampling intervals were established along each transect (Figure 1). A sediment corer was used to collect a sediment sample. Sediment composition (i,e,. grain size, relative amounts of organic matter, sands, and silts) was qualitatively evaluated. In addition, a Ponar grab was used to determine the presence, coverage, and composition of submerged vegetation. A secchi disk was used to calculate the depth of light penetration. Measurements of temperature, salinity, and conductivity were also taken at each sampling location. Table 1 provides information on depth, temperature, salinity, conductivity, secchi measurements, sediment type, and presence of vegetation and living matter at each of the sampling locations.

Sampling began at 10:00 am at the northernmost point of OU 3, approximately 150 meters south of the fuel dock and 50 meters due east of the shore. Sediment samples and measurements were taken from four intervals along the first transect (1A - 1D). The distance between intervals varied from 50 to 100 meters, depending on depth. No sea grass beds were observed, however several species of bivalves and one mud crab were collected in the shallower stations. Sediments collected from sample 1D, the deepest station at transect 1, showed visible signs of petroleum contamination.

The second transect originated approximately 100 meters south of the transect 1, at a depth of 0.7 meters. Although blades of dead sea grass were observed floating, no live vegetation was collected with the Ponar dredge. Mr. Mackowsky walked toward the shore and observed no submerged vegetation. Dead bivalves were observed in a number of the sediment samples. Further evidence of petroleum contamination was also observed at the deepest station within the second transect

(2D).

Transect #3 was located just north of the old dock adjacent to the antenna. With the tide moving out, five locations were sampled. No vegetation was observed. Live bivalves including one juvenile were collected at one of the shallower stations. Evidence of petroleum contamination was observed in the sediments at sample 3D.

Wednesday, September 15, 1993

Ms. Burris and Ms. Pease arrived at the marina at 8:15 am. Sampling continued at the north end just south of the old dock. Emergent sea grasses were observed along the shoreline. Submerged sea grasses were collected via the Ponar dredge at station 4A. It is assumed that the majority of submerged aquatic vegetation (SAV) is close to the shore adjacent to the emergent grass beds. Sediments were sandy at the shallow stations and gradually became more silty and muddy as depth increased. A number of live clams were observed.

Sampling at the fifth transect occurred north of the main runway lights. Mr. Mackowsky reported sparse submerged vegetation close to shore, however none was collected with the Ponar dredge. Clams and snails were observed.

Because of a break in the training of helicopter pilots adjacent to the landing pad on the St. Johns River, samples were collected at the southernmost point along Black Point off of the sea wall. Because depth increased rapidly off of the sea wall, only two sampling intervals were collected along the two southernmost transects (i.e., 10A, 10B, 9A and 9B). The sediments at the ninth and tenth transects were similar; sands were observed at the shallow station while black mud was observed at the deeper sampling locations. No sea grasses were observed and live clams were present at 10A.

At the northern edge of the sea wall (transect 8A), sea grasses were observed to extend approximately 10-20 feet from the wall. To determine the extent of vegetation adjacent to the sea wall, the boat cruised parallel to the entire sea wall. The majority of submerged sea grasses are located at the northern end of the sea wall just south of the NAS Jacksonville dock.

Samples were collected north of the sea wall at transect #7. It appeared that the sediments were composed of fine black mud. No vegetation or living matter were observed.

The final transect was located south of the runway lights. Although emergent sea grasses were apparent, the substrate adjacent to the shore was composed of all rock and hard sand with no visible submerged grasses. Several live clams were collected.

Table 1
Results of Aquatic Habitat Characterization
NAS Jacksonville, OU 3

Sampling location	Depth (m)	Temperature (degrees Celsius)	Salinity (ppt)	Conductivity (uohms)	Secchi (m)	Sediment type	Presence of SAV/living matter
1A	0.8	28.5	8.0	1400	0.8	green clay	No/dead bivalves; one small mud crab
1B	0.8	29.0	7.0	1450	0.8	mostly sands with some black silt; sulphur odor	No/worms, bivalves
1C	1.1	30.0	7.0	1500	0.9	black fines (muck) with organic sheen; no odor	No/no
1D	3.1	29.0	7.0	1500	0.9	black fines (muck) with petroleum odor and sheen	No/no
2A	0.6	30.0	8.0	1400	0.6	mostly sands with some black fines	No/no
2B	0.8	30.0	8.0	1400	0.8	all sands	No/no
2C	1.7	30.0	8.0	1450	1.2	black fines	No/no
2D	2.1	30.0	8.0	1400	1.2	black fines (ooze); evidence of petroleum	No/no
2E	3.0	30.0	7.5	1400	1.2	black fines with some sands	No/no
3A	0.3	30.5	7.5	1380	0.3	sands with some black silts	No/no

Table 1
Results of Aquatic Habitat Characterization
NAS Jacksonville, OU 3

Sampling location	Depth (m)	Temperature (degrees Celsius)	Salinity (ppt)	Conductivity (uohms)	Secchi (m)	Sediment type	Presence of SAV/living matter
3B	0.6	30.5	7.5	1350	0.6	sands with some black fines	No/live bivalves and 1 seed
3C	1.2	30.0	7.5	1400	1.2	black mud with some sands	No/live bivalves
3D	1.2	30.5	8.0	1400	1.2	black shiny mud with some sand; organic sheen	No/no
3E	2.2	30.0	7.5	1400	1.2	black fines with some sand	No/no
4A	0.6	28.0	7.5	1380	0.6	all sands	Yes/no animals
4B	1.1	28.0	8.0	1400	1.1	black fines with some sand; sulphur odor	No/no
4C	1.4	28.5	8.5	1500	1.1	black shiny mud with some sand	No/no
4D	1.8	29.0	8.5	1500	0.8	black shiny mud	No/no
4E	2.9	29.0	8.8	1520	0.6	black shiny mud	No/no
5A	0.8	29.0	8.5	1500	0.8	all sands	Sparse veg./seeds and bivalves
5B	0.9	29.0	8.5	1480	0.9	mostly sands with some black silt; sulphur odor	No/bivalves

Table 1
Results of Aquatic Habitat Characterization
NAS Jacksonville, OU 3

Sampling location	Depth (m)	Temperature (degrees Celsius)	Salinity (ppt)	Conductivity (uohms)	Secchi (m)	Sediment type	Presence of SAV/living matter
5C	1.1	29.0	8.5	1500	0.9	mostly sands with some black silt	No/snail
5D	1.8	29.0	8.5	1500	1.0	mostly sands	No/no
5E	2.4	29.5	8.5	1500	0.8	sands with some fines	No/no
6A	1.2	31.0	8.0	1400	1.0	all sands	No/no
6B	1.8	31.0	8.0	1400	1.1	sands with shell fragments and some silt	No/bivalves
6C	2.1	31.0	8.0	1450	1.1	sands with some silts	No/bivalves
6D	2.4	31.0	8.0	1450	1.2	mostly sands with some black silts	No/bivalves
7A	1.2	30.5	7.8	1400	1.1	all fines; black mud	No/no
7B	1.5	31.0	8.0	1400	1.1	all fines; black mud	No/no
7C	1.8	31.0	8.0	1400	0.9	all fines; black mud	No/no
8A	0.7	30.0	7.5	1350	0.7	all sands	Yes/no
8B	1.2	30.0	8.0	1400	1.2	sands with a clay layer	No/no
9A	1.2	30.0	7.7	1390	1.2	sands with some silt	No/no

Table 1
Results of Aquatic Habitat Characterization
NAS Jacksonville, OU 3

Sampling location	Depth (m)	Temperature (degrees Celsius)	Salinity (ppt)	Conductivity (uohms)	Secchi (m)	Sediment type	Presence of SAV/living matter
9B	1.8	30.0	8.0	1450	1.0	black mud	No/no
10A	1.2	30.0	7.7	1390	1.1	sands with some silt	No/bivalves
10B	2.0	30.0	7.9	1400	1.1	sands with some silt	No/no

FIGURE 1

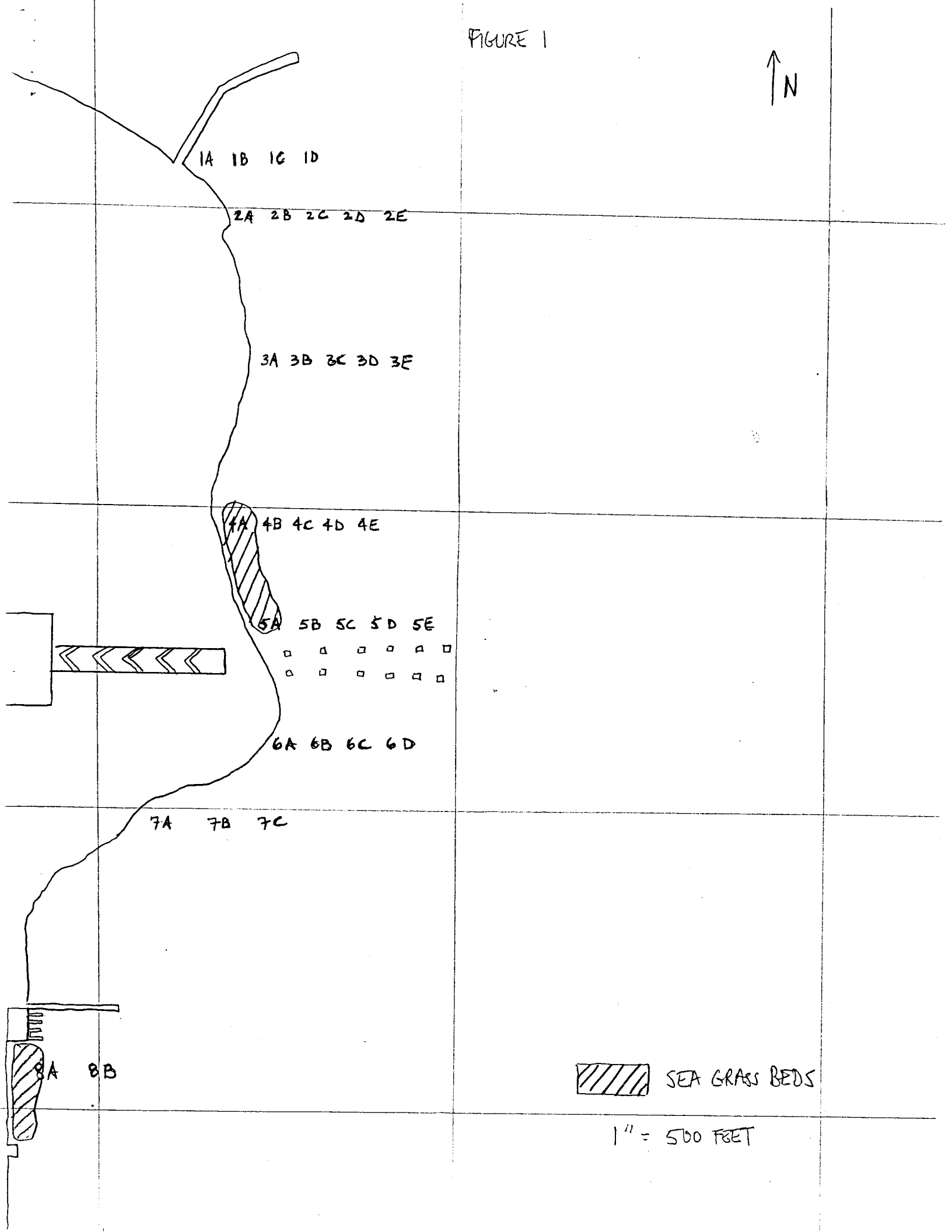
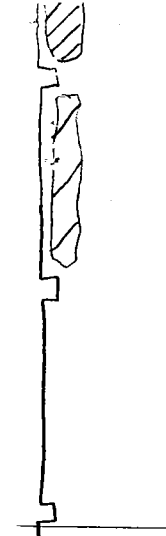

N
1A 1B 1C 1D
2A 2B 2C 2D 2E
3A 3B 3C 3D 3E
4A 4B 4C 4D 4E
5A 5B 5C 5D 5E
6A 6B 6C 6D
7A 7B 7C
8A 8B
SEA GRASS BEDS
1" = 500 FEET

FIGURE 1 (CONT)



9A 9B

10A 10B

BLACK POINT

SEA GRASS BEDS

1" = 500 FEET