

Saganaw Bay
Log Transfer Facility
Bark Monitoring Survey
303D List Transects
Survey Date May 29, 2002

Longitude 134°10'483"
Latitude 56°51'170"

0.59 ac.

74 recal.

Submitted to:

United States Department of Agriculture
United States Forest Service, Region 10
Tongass National Forest
Federal Building
648 Mission Street
Ketchikan, Alaska 99901

Prepared by:

Stephen Haggitt
P.O. Box 61
Craig Alaska 99921

Submitted July 15, 2002

Introduction

An underwater reconnaissance was requested to determine the representative condition of an area operating as a Log Transfer Facility (LTF). The survey dive was conducted on May 29, 2002. The site surveyed is located on Kuiu Island.¹ This report was conducted under the authority of USFS contract Number 53-0116-2-00486.

This inspection documented findings according to the stipulations in the United States Forest Service (USFS) Permit Dive Monitoring contract No. 53-0116-2-00486, and the Alaska Department of Environmental Conservation (ADEC), Environmental Protection Agency (EPA) and NPDES requirements. The percentage of bark coverage was determined by using the protocol for operating a bark-monitoring program given in the EPA General Permit. An additional category was inserted into the sample point tables to report the depth and type of material covering the bark. The area calculation used in this report is outlined in the ADEC publication "**Required Method for Bark Monitoring Surveys under the LTF General Permits**".

Methods

Radial Transects:

The fixed hub reference point for the transects radiating from the log transfer ramp was initially located by assessing maps and diagrams created by Otto Cornthwaite in the May 1997 bark monitoring survey.

The reference hub was located as close as possible to the center of the discharge site to facilitate future reconnaissance. Seven transects were established, radiating from the reference hub at 30-degree intervals. The transects followed the headings established in previous bark monitoring surveys at the site. Two separate magnetic compasses were compared to determine the bearings. Transducers and transponders were used in conjunction with DGPS to monitoring the diver's progress.

Sample Points:

Samples were taken at intervals of 15 linear feet along each transect. This interval distance was established with the use of a metal ruler 48 inches in length, laid end over end. The sample points began at 15 linear feet from the fixed reference hub and continued along the transect, terminated by the requisite of beyond the area of bark accumulation, or to a water depth of 60 feet at MLLW, whichever is first.

¹ Please see Appendix A for area and site map.

At each sample point observations were noted on the abundance and type of marine organisms present, the native vegetation, and composition of the substrate. Data including the water depth, current direction, and estimated current velocity also were incorporated into the field notes. Each of the sample points also included relevant observations on operational debris and existing bark debris. Photographic documentation² was used at representative sample locations to record algal life, animal life, substrate, and debris present. Sample location depth notations are based on readings from a Cochran Consulting Nemesis IIA dive computer calibrated for saltwater and altitude.

Findings

Survey Area:

The total area covered by this survey was 1.70 acres (6905 m²).

MAY 29, 2002

Zone of Deposit:

The ZOD for the Saganaw Bay LTF is 0.69 acres. Consisting of 0.59 acres (2399 m²) continuous and, 0.10 acres (413 m²) discontinuous bark cover.

Log Transfer Ramp:

The reference point hub position, located at the seaward end of the beaver slide was recorded using a Raytheon DGPS. The coordinates for this hub are N 56° 51' 170 by W 134' 10' 483.

Weather conditions during the survey consisted of clear skies with winds less than five knots. Diving commenced at 9 a.m. during low tide. The tidal station (subordinate station #1717) was used to correct depths to MLLW. The station reported a tide level of -2.0 ft at 9 a.m. The current conditions remained negligible. Seawater temperature was recorded at 45 degrees F. The horizontal visibility was estimated to be 10 feet.

Seven transects radiated out from the reference point on bearings labeled T¹ 320°, T² 350°, T³ 020°, T⁴ 050°, T⁵ 080°, T⁶ 110° and T⁷ 140°. A total of 112 sample locations were assessed.

Site conditions remained steady with winds less than five knots and clear skies. Diving concluded at 12 p.m. during low tide. The tidal station (subordinate station #1717) was used for depth corrections, reporting a 0.0 ft tide level at 12 p.m.³ Current velocity was negligible. The horizontal visibility remained constant and was estimated to be 10 feet.

Each transect terminated by 60 FSW, corrected to MLLW at subordinate station #1717. The slope for these transects remained consistent at 2:1 or 30 degrees.

² Please see Appendix C for photographic documentation.

³ Please see Appendix B for tidal information.

Observations

Log Transfer Ramp:

The LTF zone of deposit has reduced in size since last observed. This years survey required that two dive reports be completed; one based on the previous dive reports transect layout and one based on the transect layout that had placed the site on the impaired water body list (303D). In comparison the total area covered by these surveys differed as each was to follow the respective headings until the criteria established for transect termination was met. This resulted in a difference of 0.51 acres of total survey area between the separate reports.

The zone of deposit had the greatest difference in a direct comparison. The zone of deposit reported in the most recent dive transect pattern was 1.52 acres higher than that of the original transect pattern. This was a result of the most recent transect pattern more accurately delineating the debris field.

Conclusions

The General Permit AK-G70-1000 requires the bark monitoring survey to evaluate whether the discharge site has exceeded the zone of deposit. The ADEC has defined the ZOD as the outer boundary of the project area.

In accordance with the requirements listed above and with regard to the project area that was surveyed according to the methods approved by the EPA and ADEC, it is my opinion that the discharge site has not exceeded the zone of deposit. This determination is based on the calculations derived from the transect data collected for this report only.

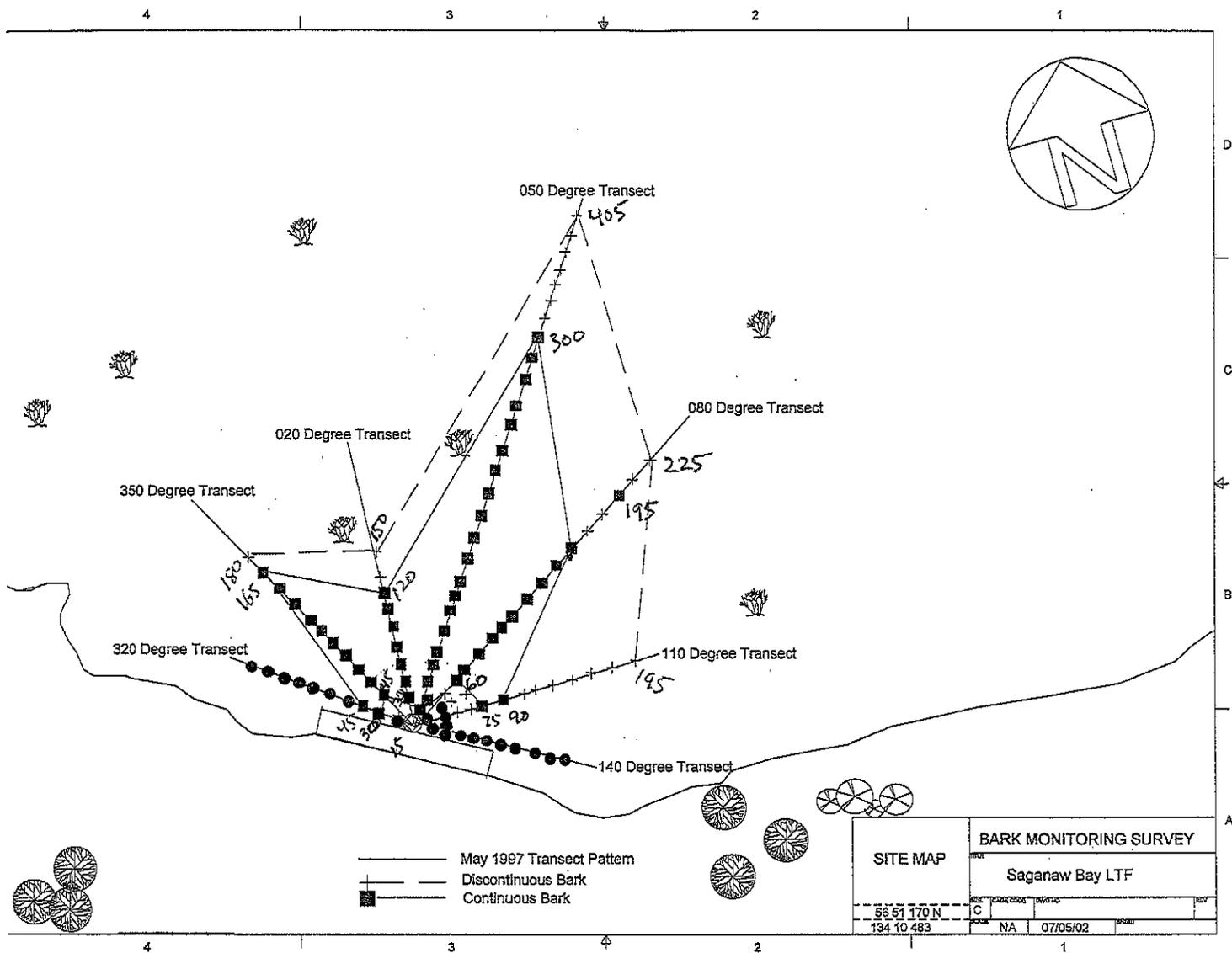
If you have need of further service regarding this report, please contact me directly at (253) 209 9380. E-mail correspondence can be forwarded to Haggitt1@juno.com. I appreciate the opportunity to provide you with this report.

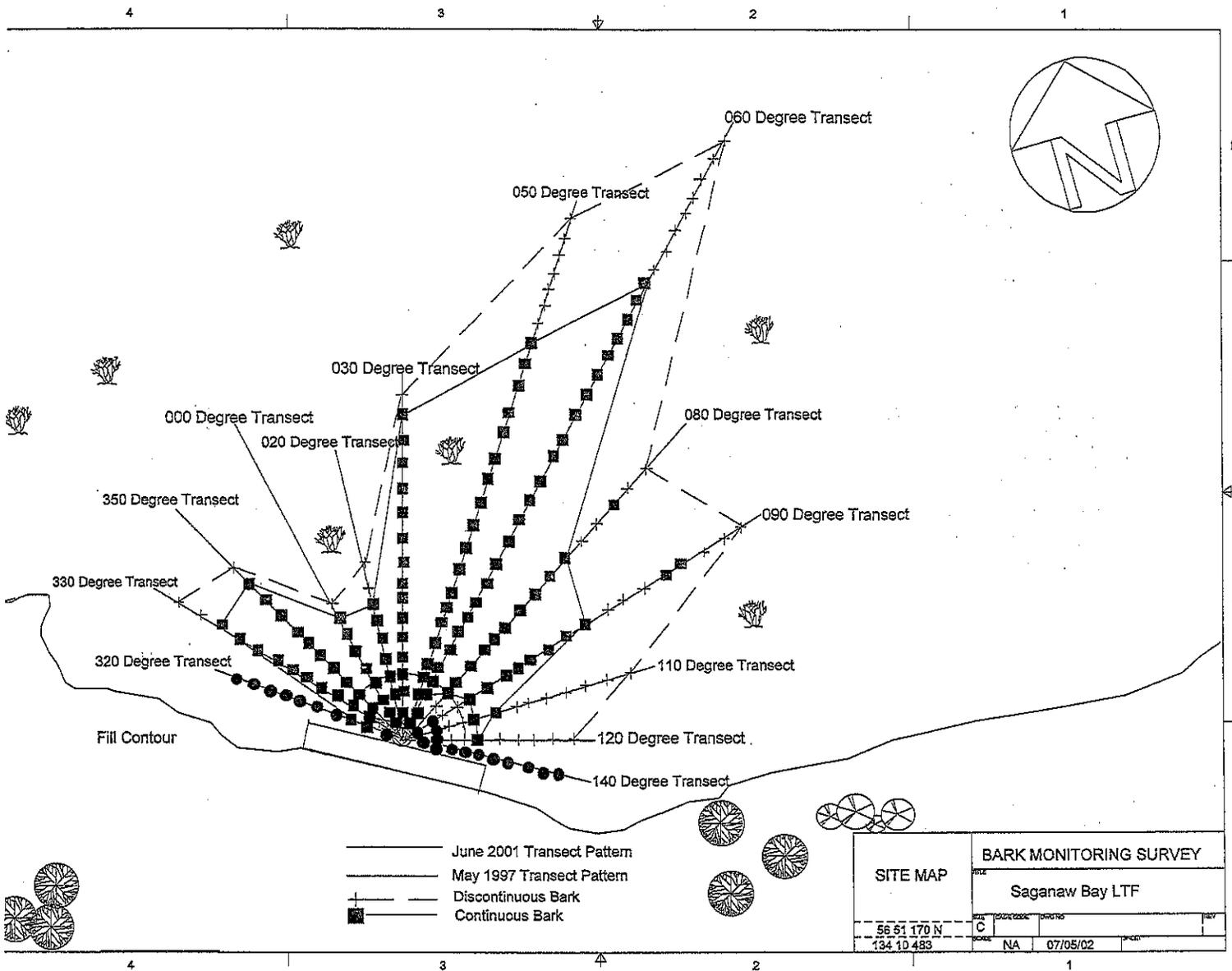
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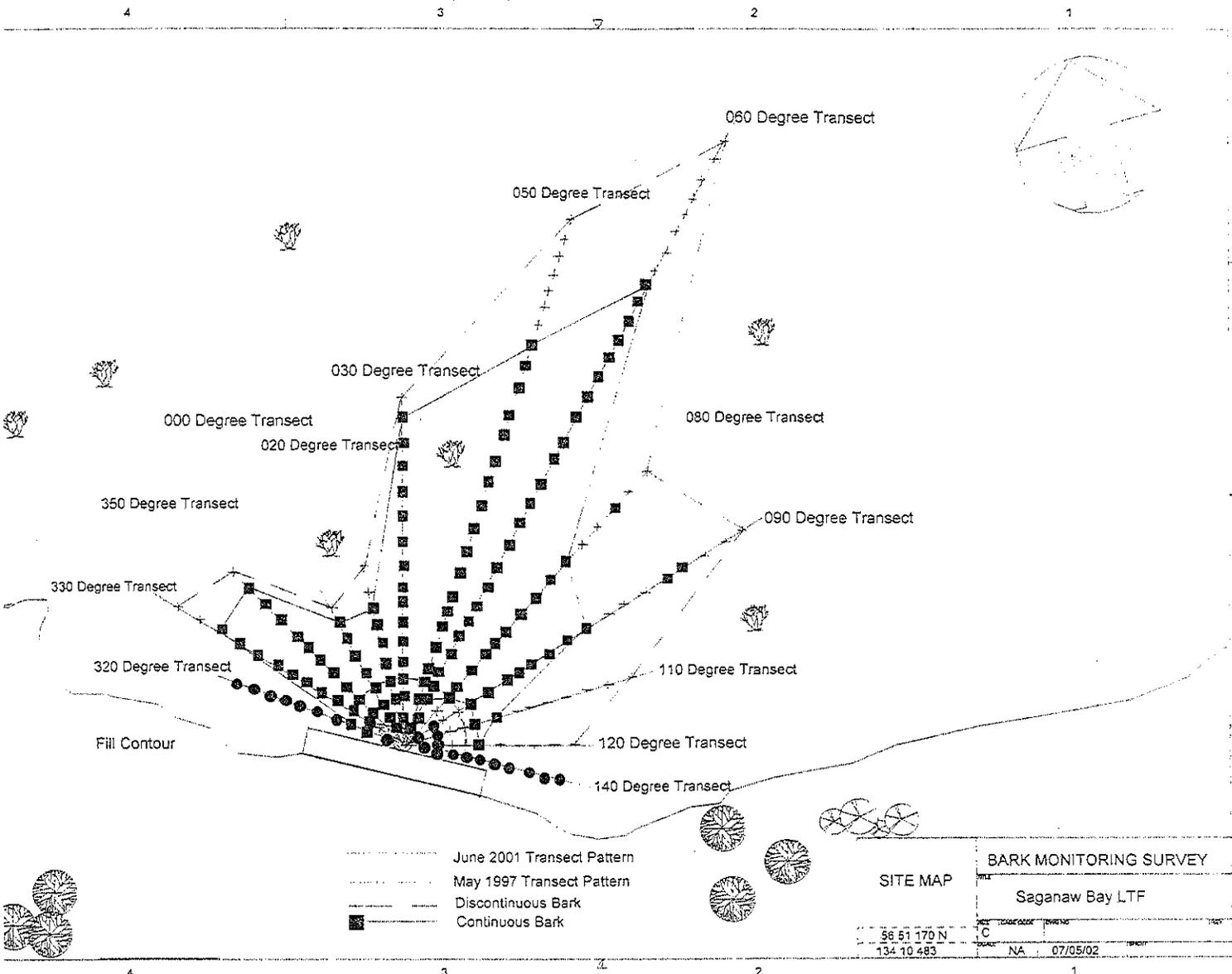


Stephen Haggitt
July 4, 2002

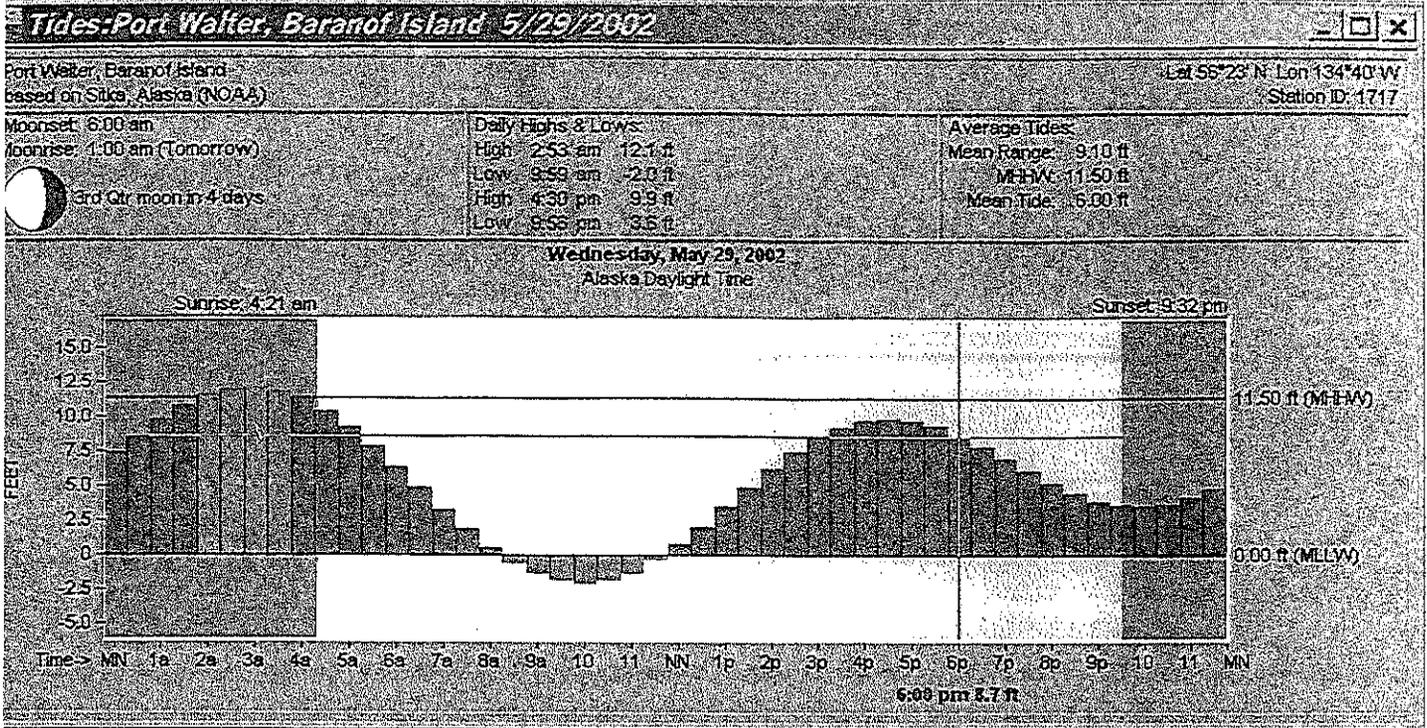
Appendix A



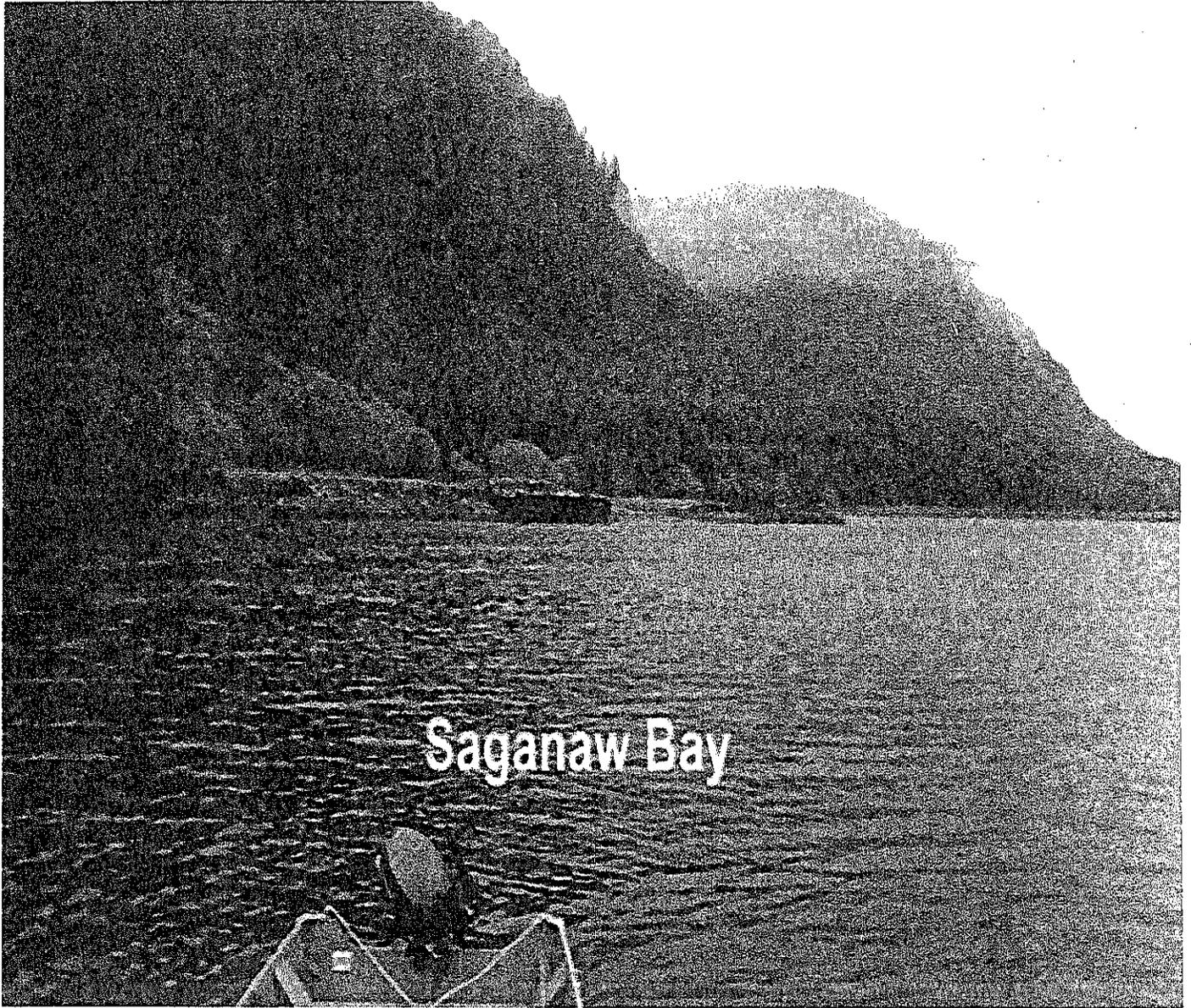


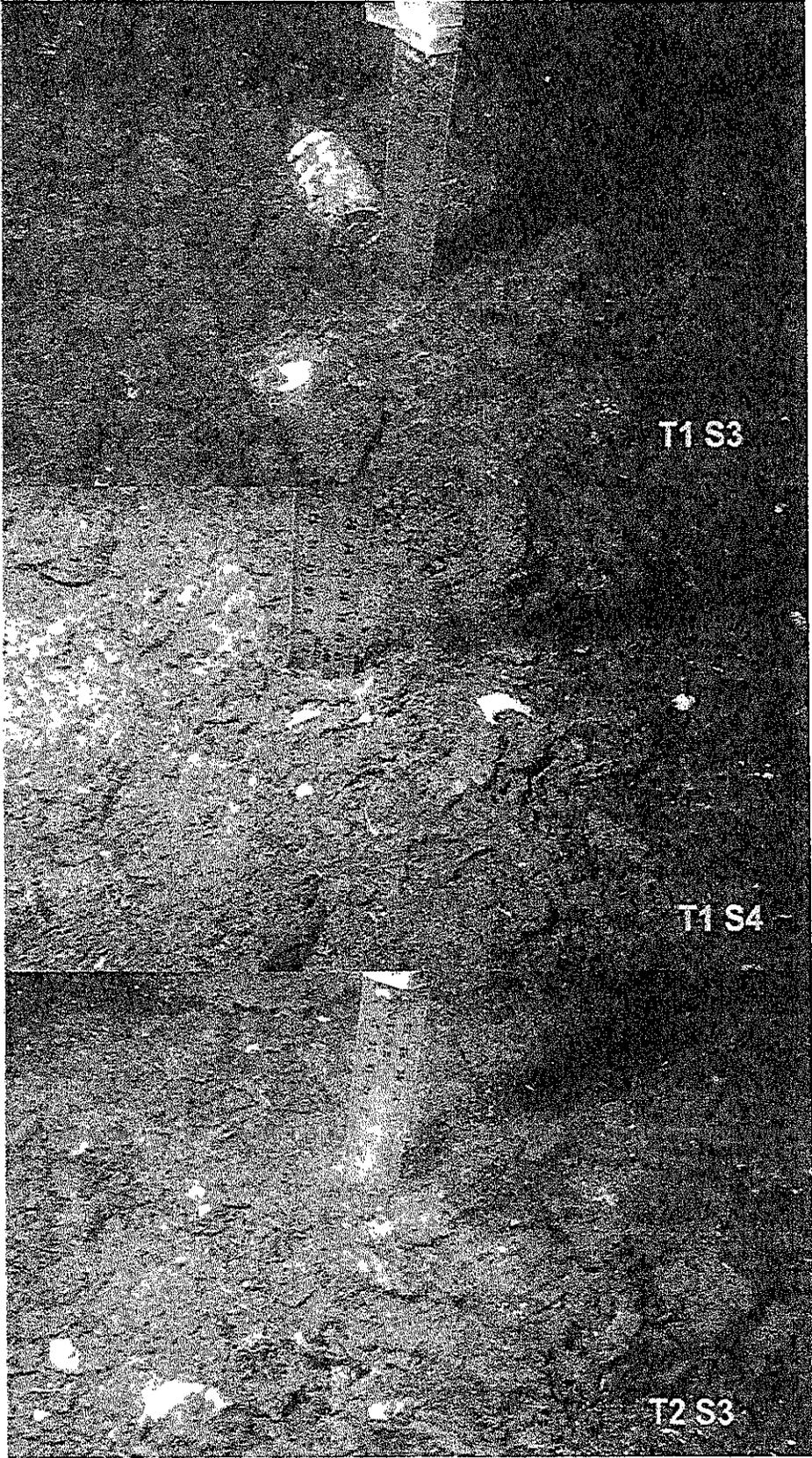


Appendix B



Appendix C

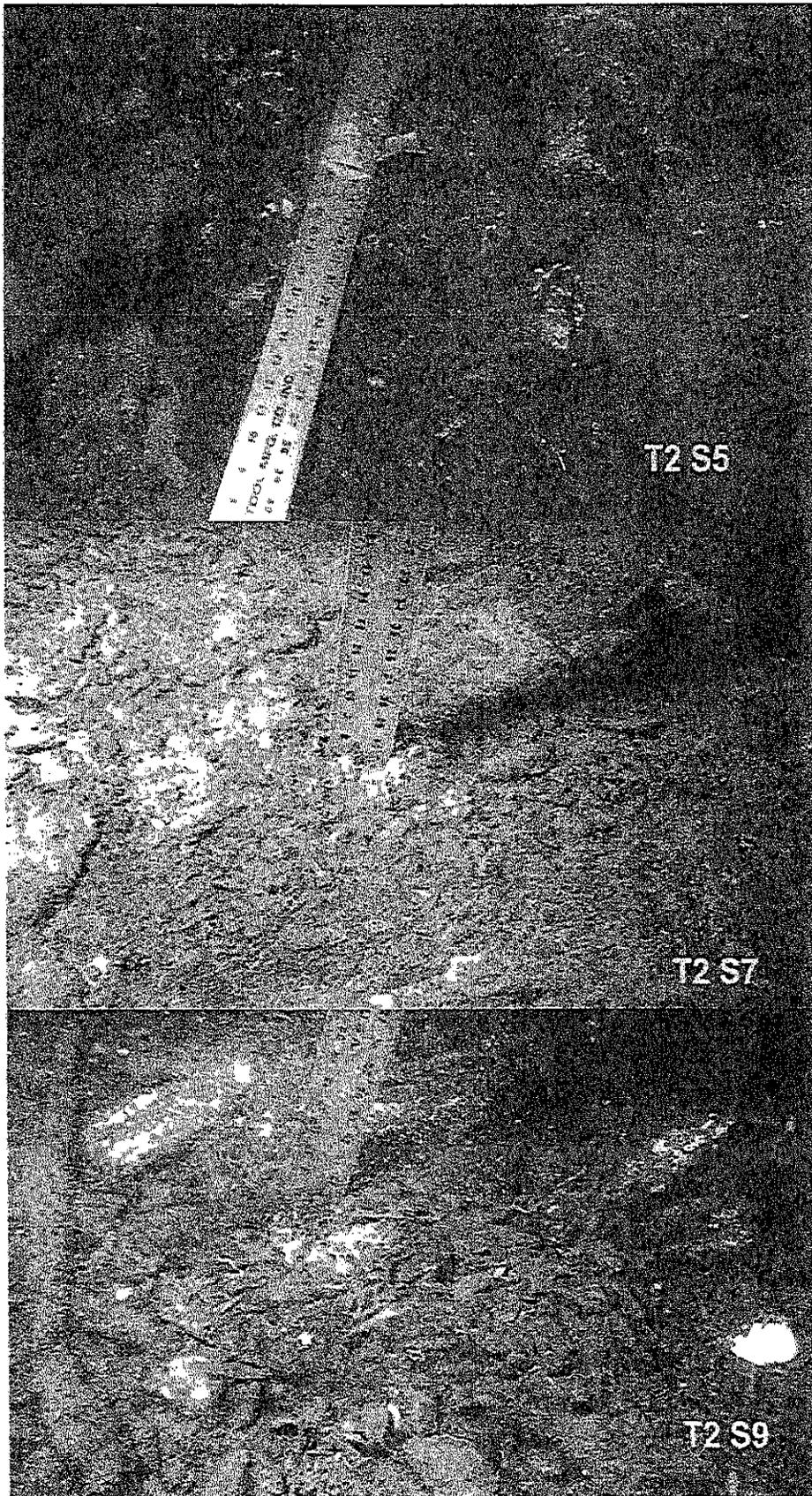




T1 S3

T1 S4

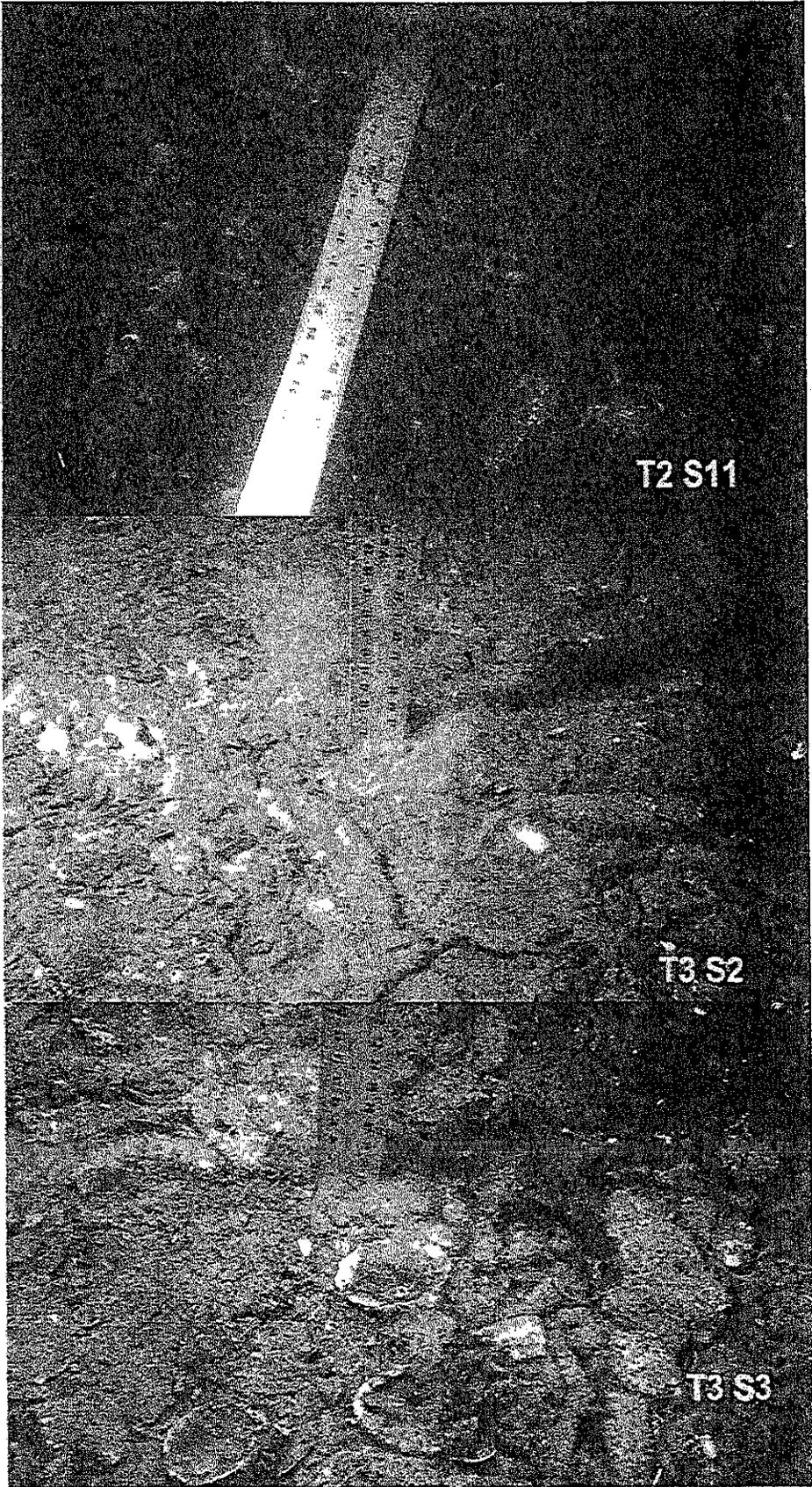
T2 S3



T2 S5

T2 S7

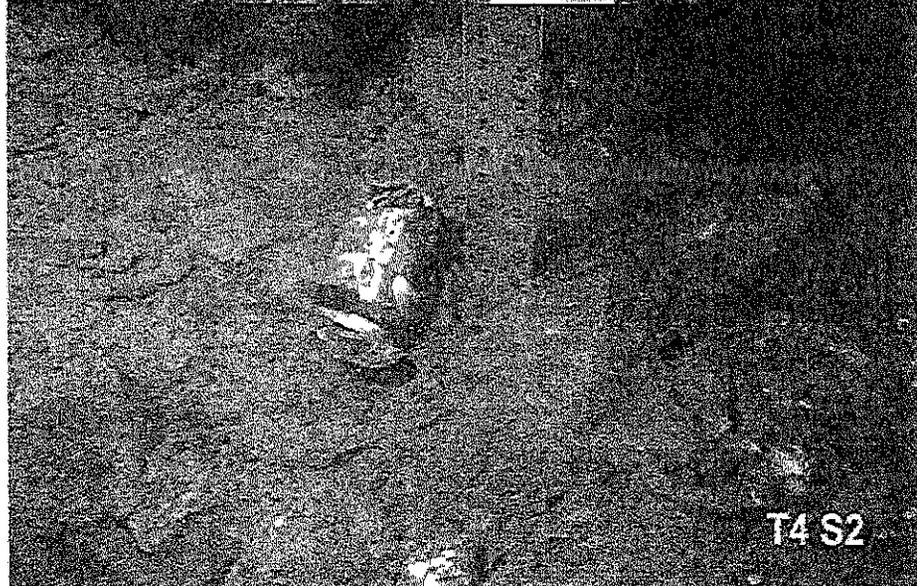
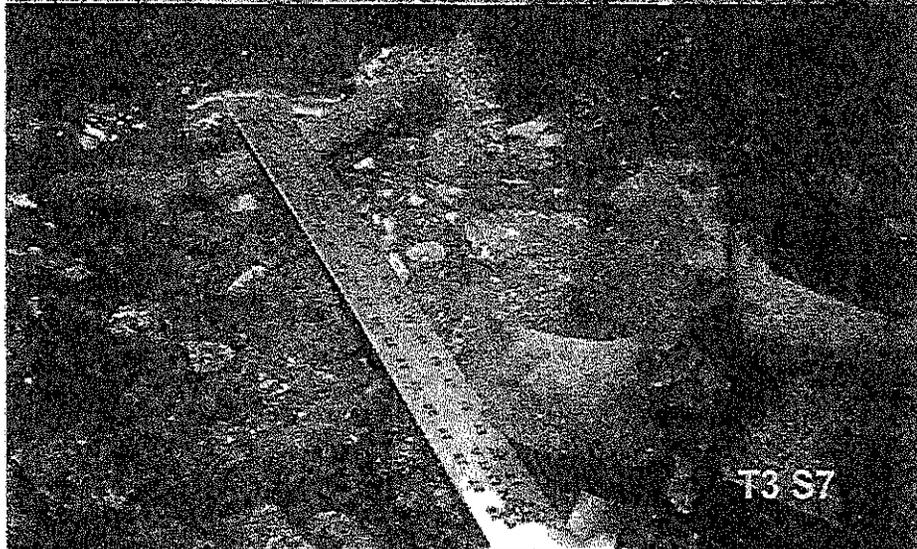
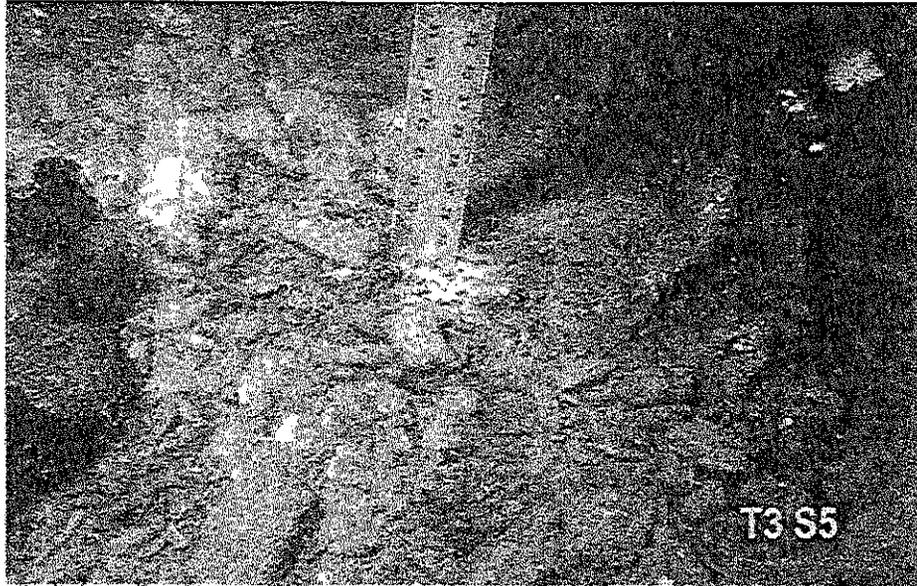
T2 S9



T2 S11

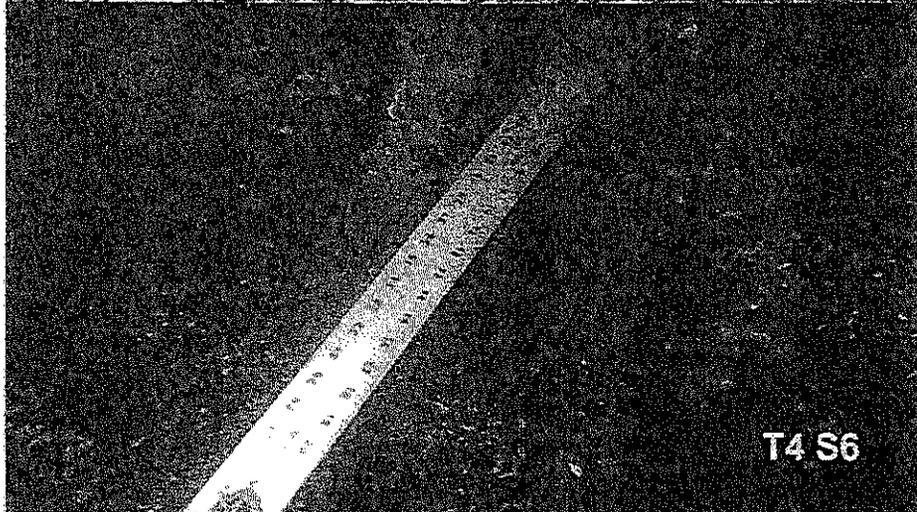
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T3 S3

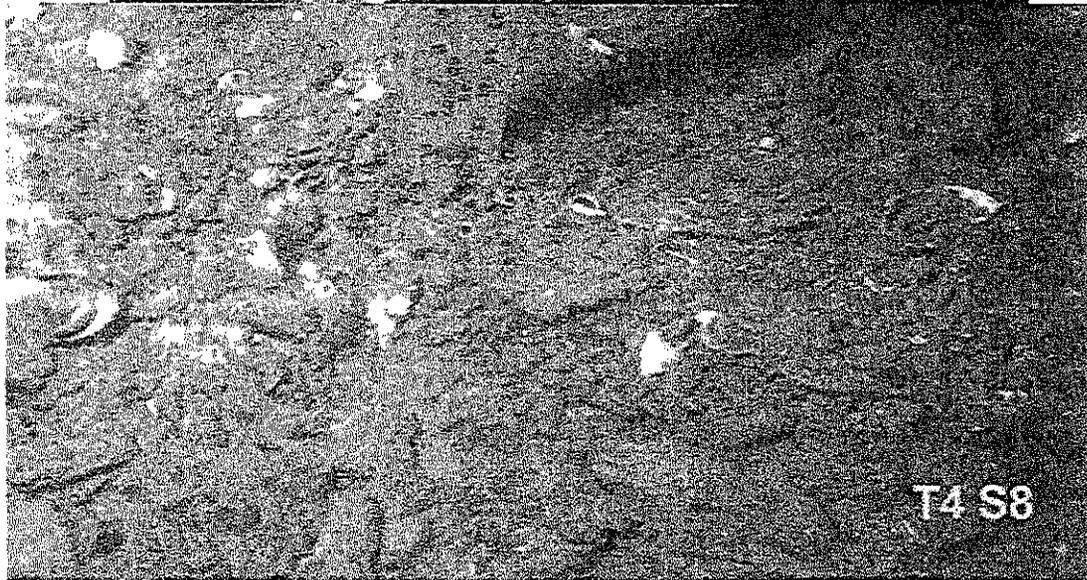




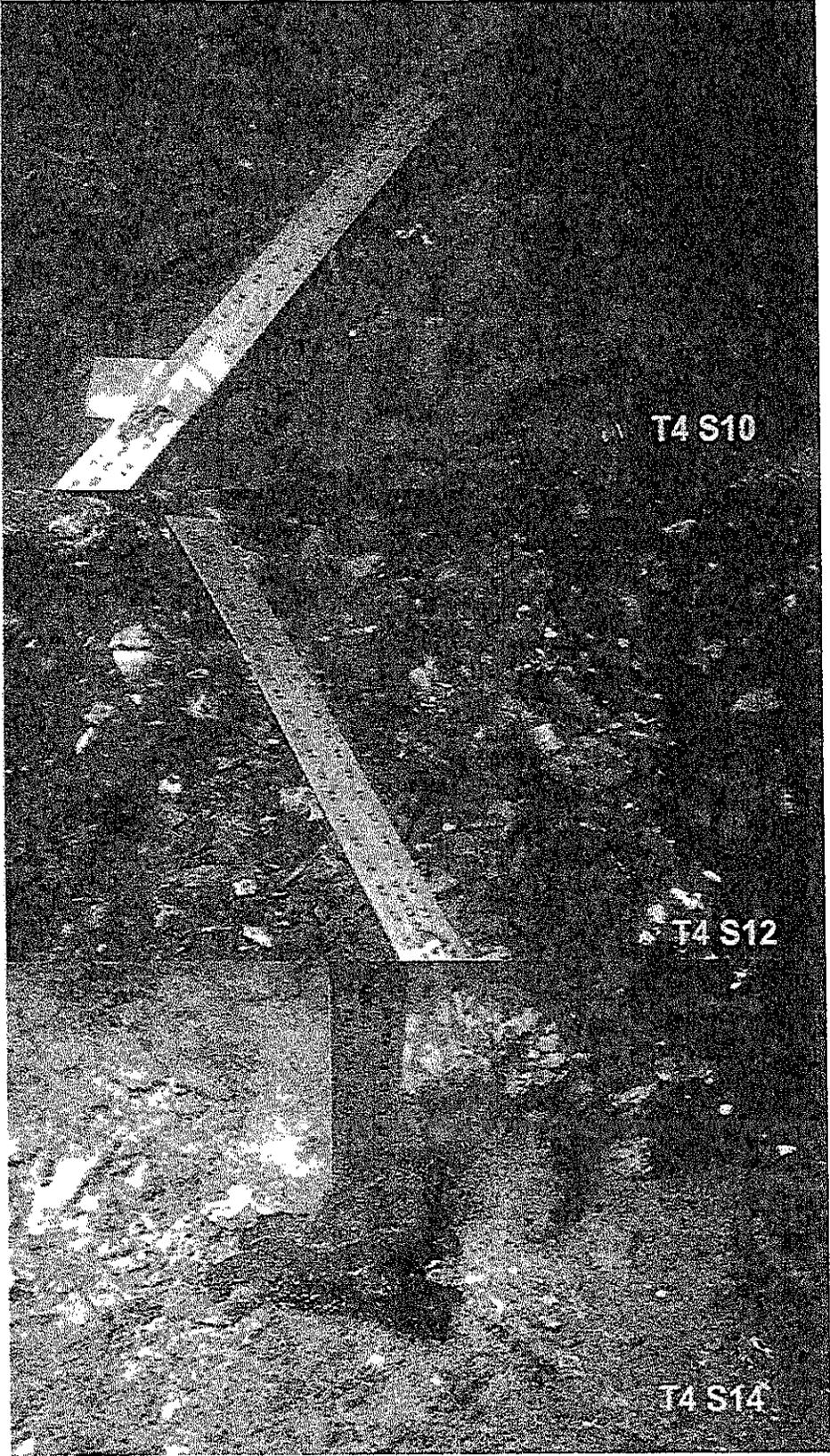
T4 S4



T4 S6



T4 S8





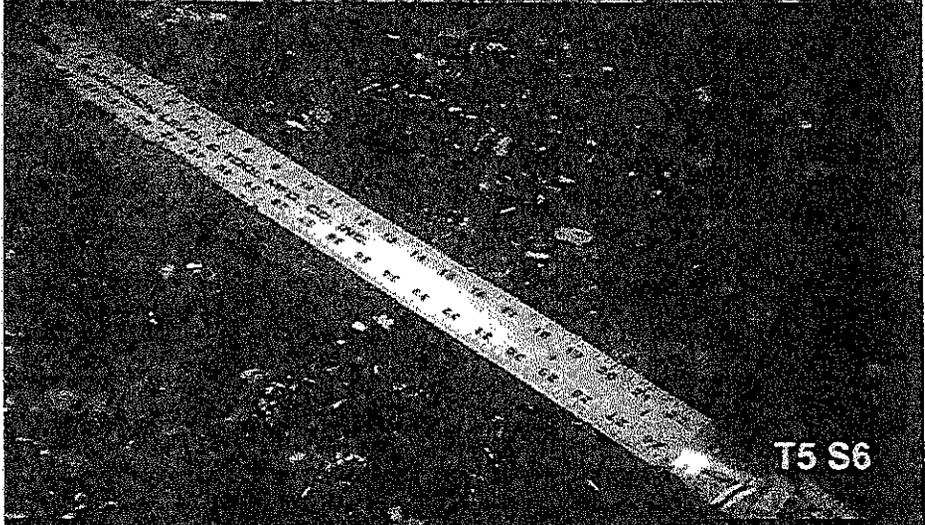
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T4 S18

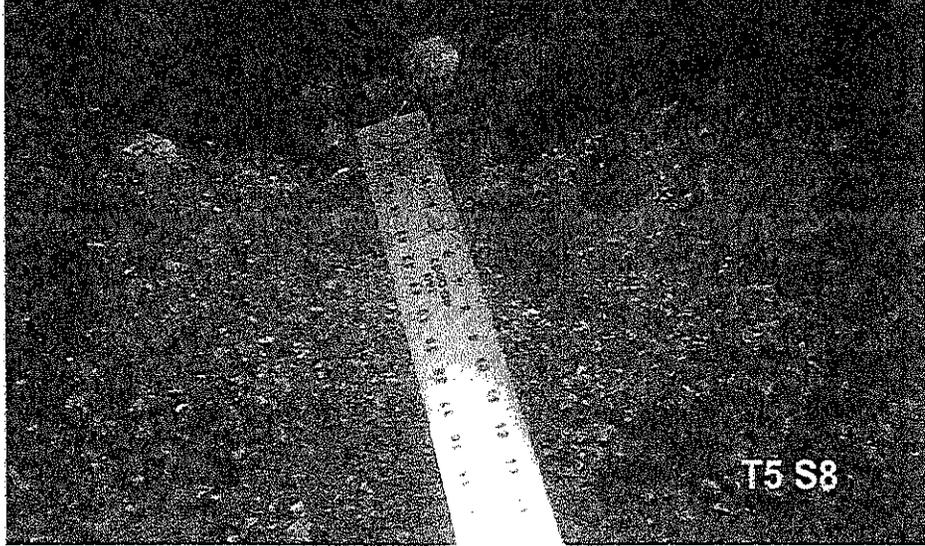
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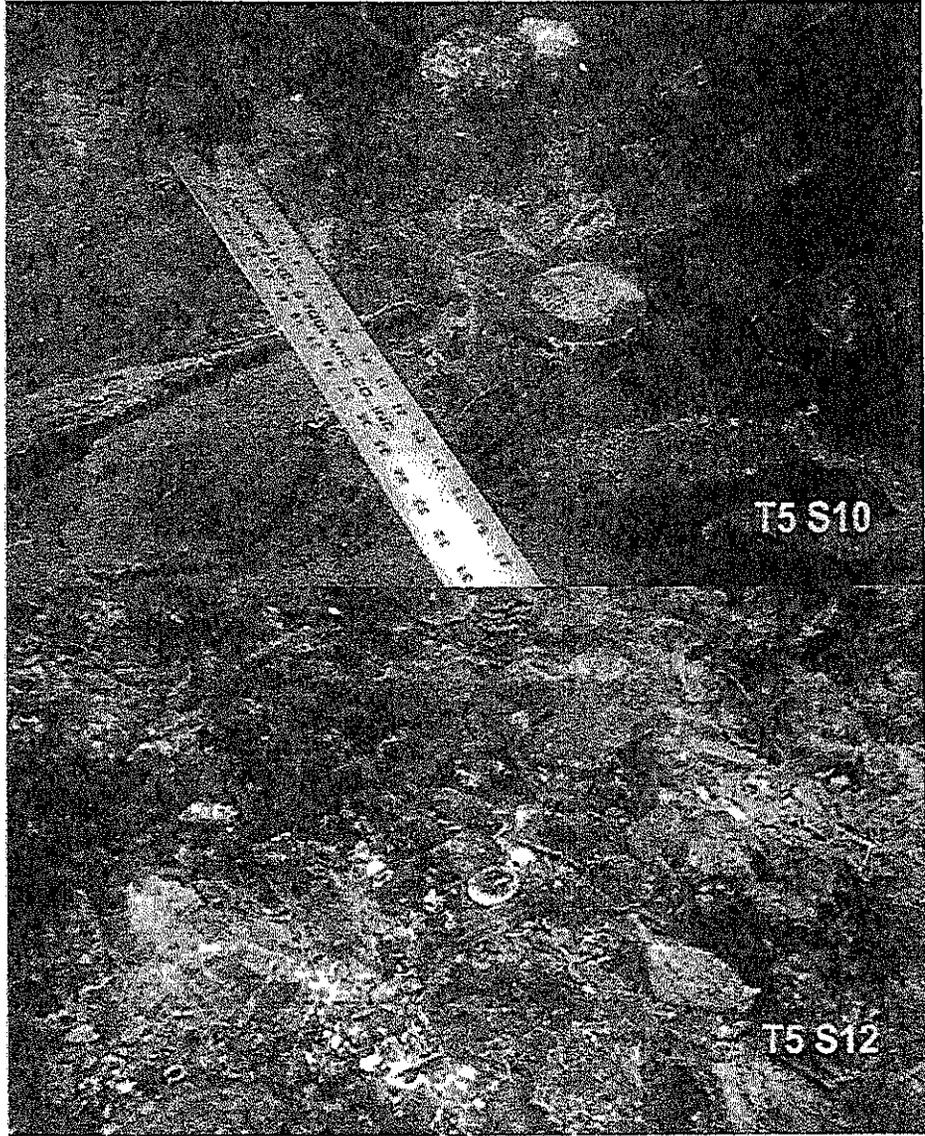
T5 S4

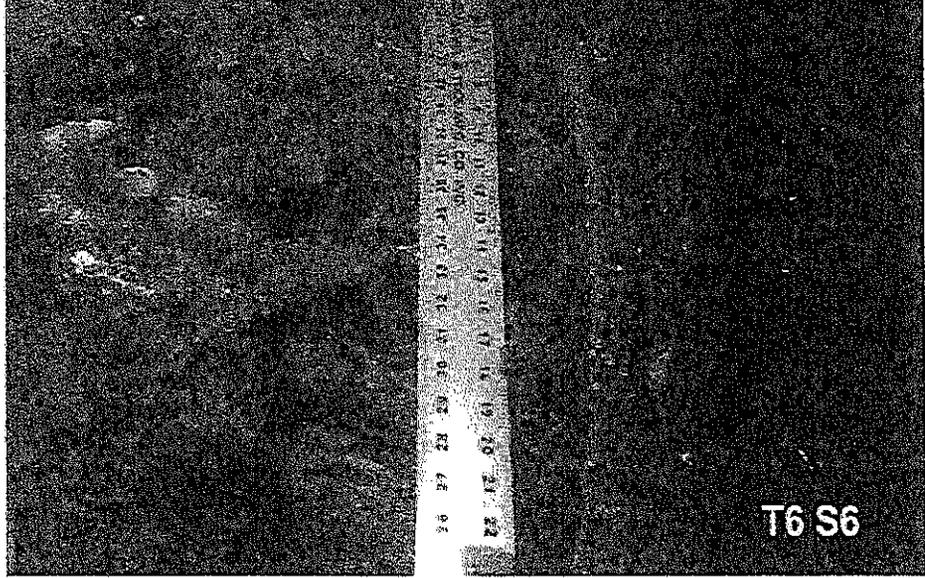
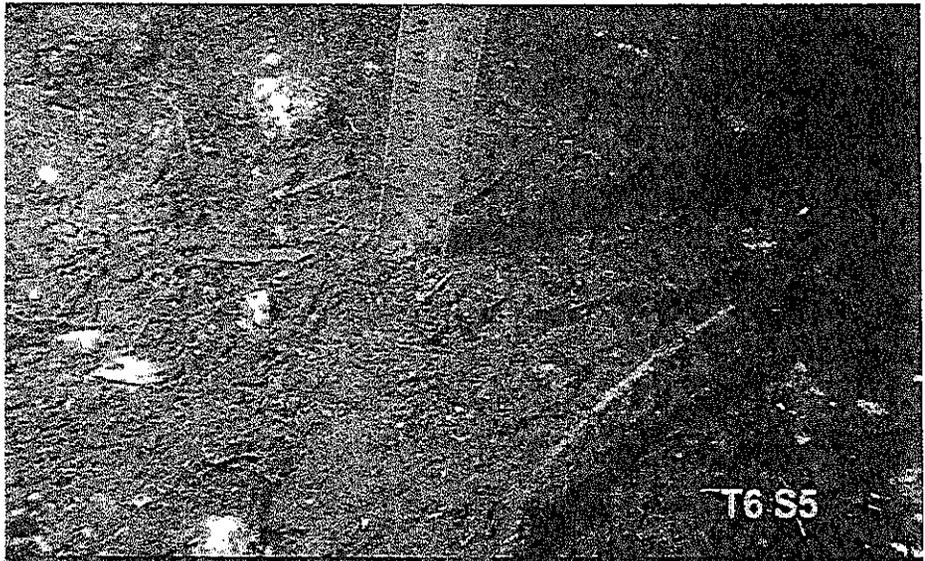


T5 S6



T5 S8





Key:
 Substrate Type; S=Sand, M=Mud, Sl=Silt, R=Rock, C=Cobble, G=Gravel
 Bark Depth recorded in inches

Log Transfer Ramp Transect 1: 320° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	5			G-S		<i>Ulva</i>
2	9			G-S		
3	9	3	100 ⁴⁵	M-SL		<i>Ulva</i>
4	8	4	100 ⁵⁰	M-SL		
5	8			M-SL		<i>Ulva</i>
6	9			M-SL		
7	10			M-SL		<i>Ulva</i>
8	10			M-SL		
9	12			M-SL		
10	12			M-SL		<i>Ulva</i>

Log Transfer Ramp Transect 2: 350° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	3			C-G		<i>Ulva</i>
2	5	5	50	C-G		<i>Ulva</i>
3	6	12	100 ⁴⁵	C-G		
4	9	4	100	C-G		<i>Ulva</i>
5	11	8	100	C-G		
6	14	10	100	S-M		<i>Ulva</i>
7	15	7	100	S-M		
8	17	11	100	S-M		Sea star
9	19	13	100	S-M		
10	20	8	100	S-M		<i>Ulva</i>
11	18	11	100 ¹⁶⁵	S-M		<i>Ulva</i>
12	17	8	40	S-M		

Log Transfer Ramp Transect 3: 020° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	4			S		<i>Ulva</i>
2	7	9	100 ³⁰	S		<i>Ulva</i>
3	9	7	100	S		
4	9	8	100	S		
5	13	8	100	S		
6	15	6	100	S		<i>Ulva</i>
7	18	5	100	S		<i>Ulva</i>
8	21	5	100 ¹²⁰	S		<i>Ulva</i>
9	20	3	80	S	1	
10	21	1	20	S		

Log Transfer Ramp Transect 4: 050° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	4	4	100 ¹⁵	C		
2	7	10	100	M-SL		<i>Beggiatoa</i>
3	8	8	100	S-M		<i>Ulva</i>
4	6	6	100	S-M		
5	9	8	100	S-M		<i>Ulva</i>
6	10	5	100	S-M		<i>Ulva</i>
7	11	7	100	S-M		
8	12	3	100	S-M		
9	14	5	100	S-M		
10	16	9	100	S-M		
11	18	7	100	S-M		
12	18	8	100	S-M		
13	19	10	100	S-M		
14	20	12	100	S-M		<i>Ulva</i>
15	19	9	100	S-M		
16	19	7	100	S-M		
17	22	6	100	S-M		
18	24	9	100	S-M		
19	23	8	100	S-M		<i>Ulva</i>
20	25	10	100 ³⁰⁰	S-M		<i>Ulva</i>
21	27	6	80	S-M		<i>Ulva</i>
22	29	4	80	S-M		
23	31	5	60	S-M		<i>Ulva</i>
24	34	3	60	S-M		<i>Ulva</i>
25	35	3	40	S-M	1	<i>Ulva</i>
26	38	2	25	S-M	1	
27	41	2	10	S-M	1	<i>Ulva</i>

Log Transfer Ramp Transect 5: 080° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	5			G		<i>Ulva</i>
2	7	4	25	G		<i>Ulva</i>
3	8	4	25	G		<i>Ulva</i>
4	7	6	100 ⁶⁰	S-M		<i>Ulva</i>
5	9	7	100	S-M		<i>Ulva</i>
6	10	9	100	S-M		
7	13	11	100	S-M		
8	12	13	100	S-M		<i>Ulva</i>
9	13	10	100	S-M		<i>Ulva</i>
10	16	9	100	S-M		
11	17	9	100	S-M		<i>Ulva</i>
12	18	12	100	S-M		<i>Ulva</i>
13	19	7	100 ¹⁴⁵	S-M		
14	20	5	80	S-M		<i>Ulva</i>
15	22	4	75	S-M	>1	<i>Ulva</i>
16	24	3	100	S-M	>1	<i>Ulva</i>
17	25	2	50	S-M		<i>Ulva</i>
18	29	2	10	S-M		<i>Ulva</i>

Log Transfer Ramp Transect 6: 110° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	4	3	60	S-G		<i>Beggiatoa</i>
2	4	3	60	S-G		<i>Beggiatoa</i>
3	4	2	100 ⁴⁵	S-G		<i>Beggiatoa</i>
4	9	2	100 ⁶⁰	R-S		<i>Ulva</i>
5	9	2	80	S-S		<i>Ulva</i> , Shrimp
6	7	6	50	S-S		<i>Ulva</i>
7	10	4	70	M-S		<i>Ulva</i>
8	10	4	50	S-G		<i>Ulva</i>
9	12	2	40	S-G		
10	14	1	20	S-G		
11	13	1	10	S-G		
12	15	1	10	S-G		
13	17	1	>10	S-M		

Log Transfer Ramp Transect 7: 140° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	4			S		<i>Ulva</i>
2	5			S		<i>Ulva</i>
3	6			S		<i>Ulva</i>
4	7			S		<i>Ulva</i>
5	9			S		<i>Ulva</i>
6	7			S		<i>Ulva</i>
7	8			S		<i>Ulva</i>
8	9			S		<i>Ulva</i>
9	10			S		<i>Ulva</i>
10	12			S		<i>Ulva</i>