Salt Lake Bay
Log Transfer Facility
Bark Monitoring Survey
303D List Transects

Survey Date May 27, 2002

Longitude 135° 38' 930"
Latitude 57° 58' 351"

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:

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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 27, 2002. The site surveyed is located approximately 12 miles south of Hoonah, in Port Frederick[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 William A. Hughes, Fish and Wildlife Biologist, U.S. Department of the Interior, October 1991 bark monitoring survey.

The reference hub was located as close as possible to the center of the discharge site to facilitate future reconnaissance. Five transects were established, radiating from the reference hub at 30-degree intervals. The transects followed the headings established in the 1991 bark monitoring survey 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

[1] Please see Appendix A for area and site map.

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.

The survey included five radial transects from the low angle slide to a depth of 60 feet MLLW. At each sample point observations were noted on the abundance and type of marine organisms present, the native vegetation, and the composition of the substrate. The survey quantified and identified species of organisms present at sample locations along the transects. Bottom composition and bathymetry are described as well as the depth and extent of existing bark deposits along the transects. Measurements of the depth of accumulated deposits covering the bark are incorporated into this report. Operational debris observed is also reported. Data including the water depth, current direction, and estimated current velocity also were incorporated into the field notes. Photographic documentation[2] 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 Nemeses IIA dive computer calibrated for saltwater and altitude.

Findings

Survey Area:
The total area covered by this survey was 0.49 acres (1986 m^2).

Zone of Deposit:
The ZOD for the Salt Lake Bay LTF is 0.30 acres. Consisting of 0.03 acres (125 m^2) continuous, 0.27 acres (1129 m^2) discontinuous and 0.19 acres within the survey area covered with natural sediments.

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 57°58.351 by 135'38.932 W.

Weather conditions during the survey consisted of clear skies with winds less than five knots. Diving commenced at 2 p.m. during high tide. The tidal station (subordinate station #1831) was used to correct depths to MLLW. The station reported a tide level of 14.7 ft at 2 p.m.. The current conditions remained negligible. Seawater temperature was recorded at 44 degrees F. The horizontal visibility was estimated to be 30 feet.

Five transects radiated out from the reference point on bearings labeled T^1 170°, T^2 200°, T^3 230°, T^4 260°, and T^5 290°. A total of 51 sample locations were assessed.

Site conditions remained steady with winds less than five knots and clear skies. Diving concluded at 5 p.m. during high tide. The tidal station (subordinate station #1831) was

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[2] Please see Appendix C for photographic documentation.

used for depth corrections, reporting a 5.4 ft tide level at 5 p.m.[3]. Current velocity was negligible. The horizontal visibility remained constant and was estimated to be 30 feet.

Each transect terminated by 60 FSW, corrected to MLLW at subordinate station #1831. The slope for these transects maintained a gradient of 1:1 or 45 degrees.

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 0.03 acres of total survey area between the separate reports.

The zone of deposit had similar results in a direct comparison. The zone of deposit reported in the most recent dive transect pattern was 0.02 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. It should be noted that the *combined* zone of deposit would exceed the amount reported in the "Findings" section of each report.

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.

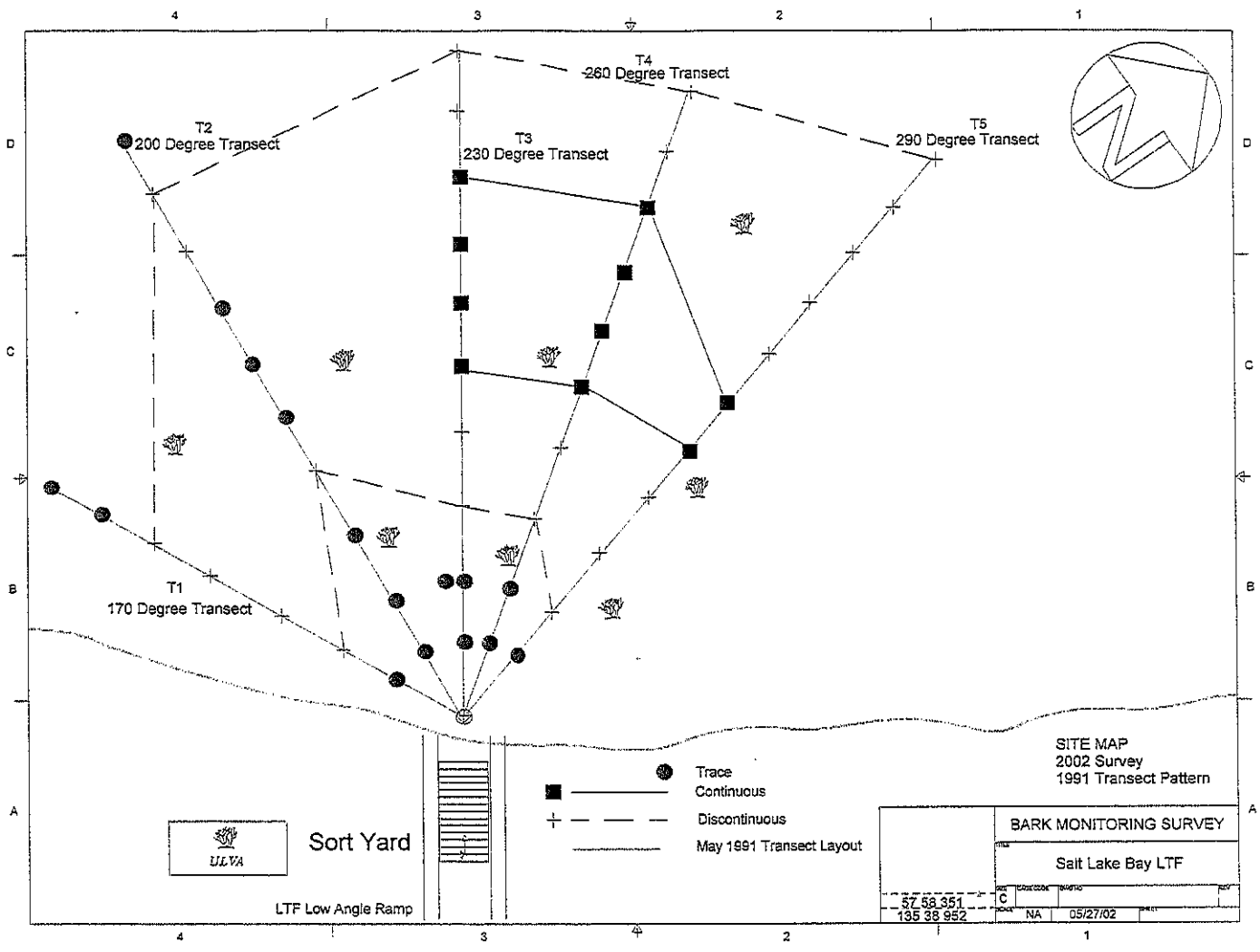
If you have need of further service regarding this report, please contact me directly at (253) 209 9380. E-mail correspondence can be forwarded to Haggitt1@juno.com. I appreciate the opportunity to provide you with this report.

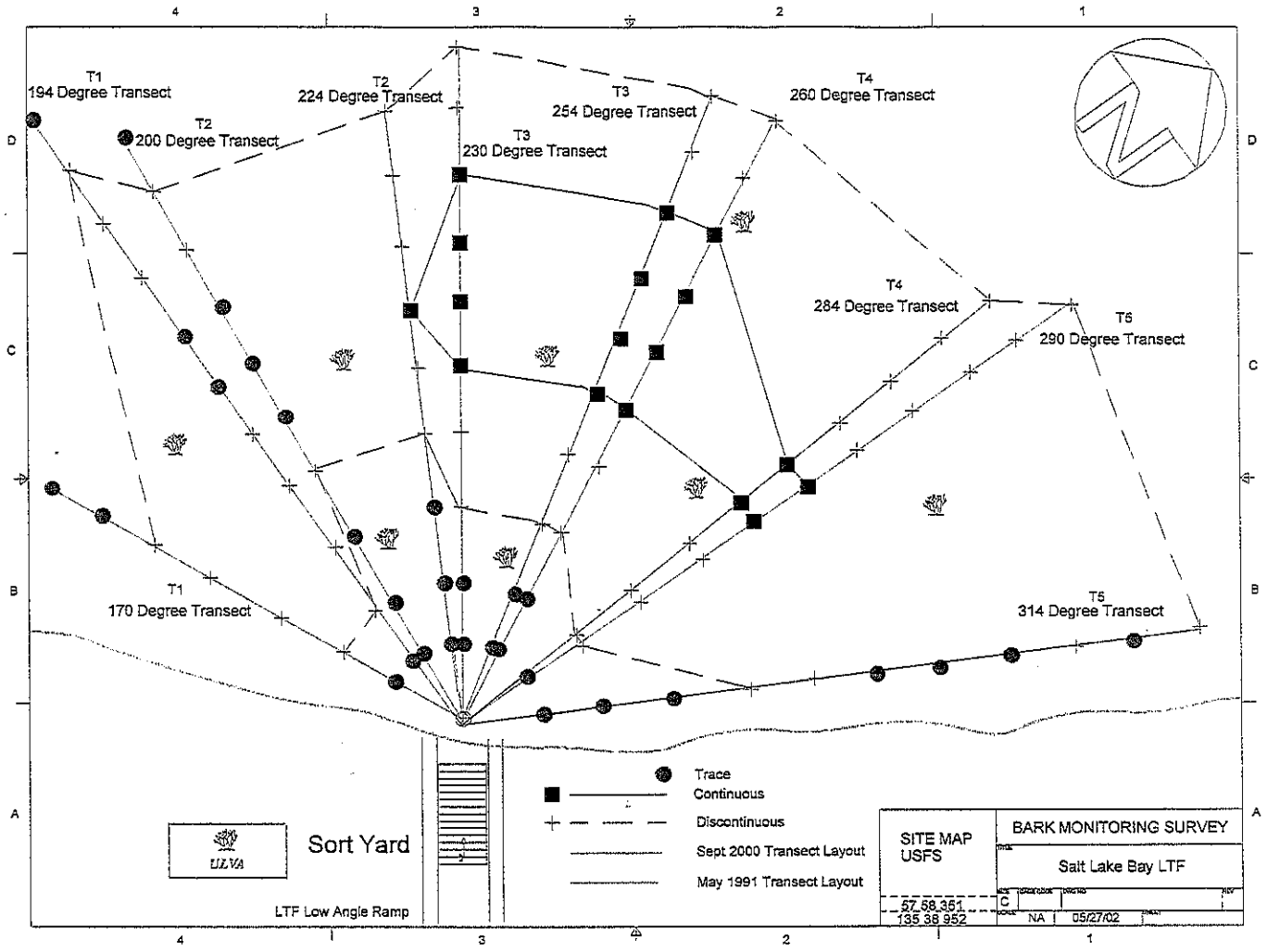
Respectfully submitted,

Stephen Haggitt
June 30, 2002

[3] Please see Appendix B for tidal information.

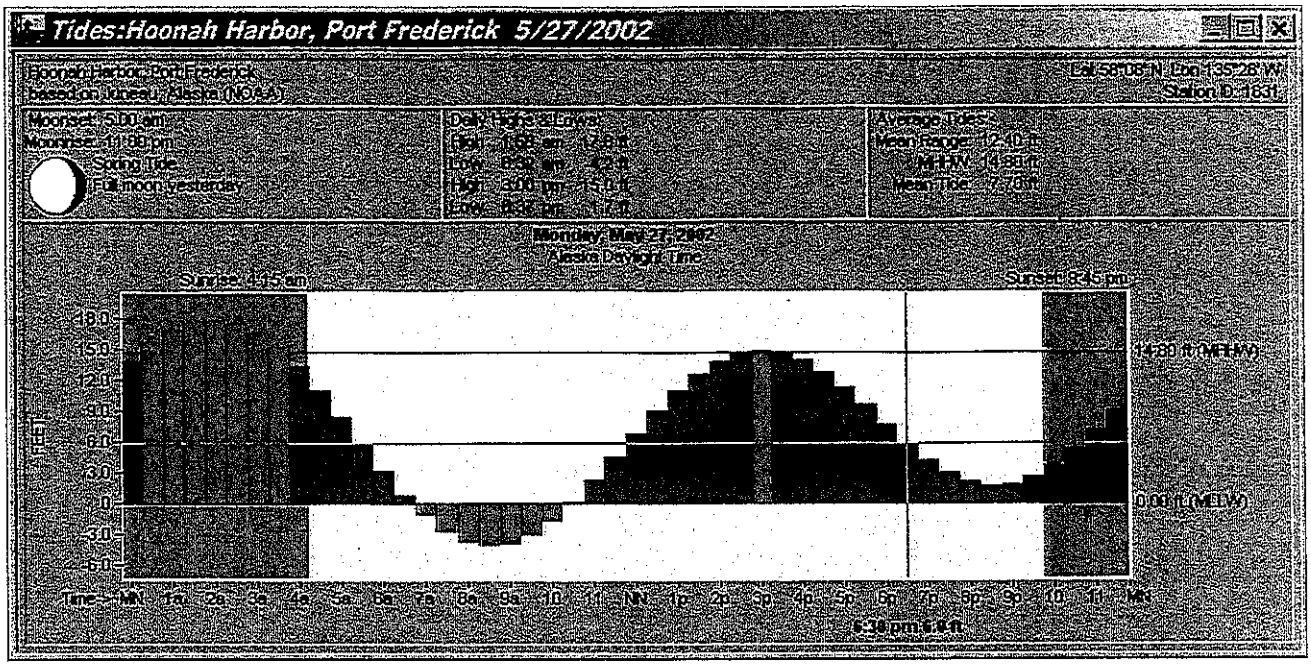
Appendix A


T1
170 Degree Transect
T2
200 Degree Transect
T3
230 Degree Transect
T4
260 Degree Transect
T5
290 Degree Transect
Sort Yard
LTF Low Angle Ramp
Trace
Continuous
Discontinuous
May 1991 Transect Layout
SITE MAP
2002 Survey
1991 Transect Pattern
BARK MONITORING SURVEY
Salt Lake Bay LTF
57 58 351
135 38 952
NA
05/27/02

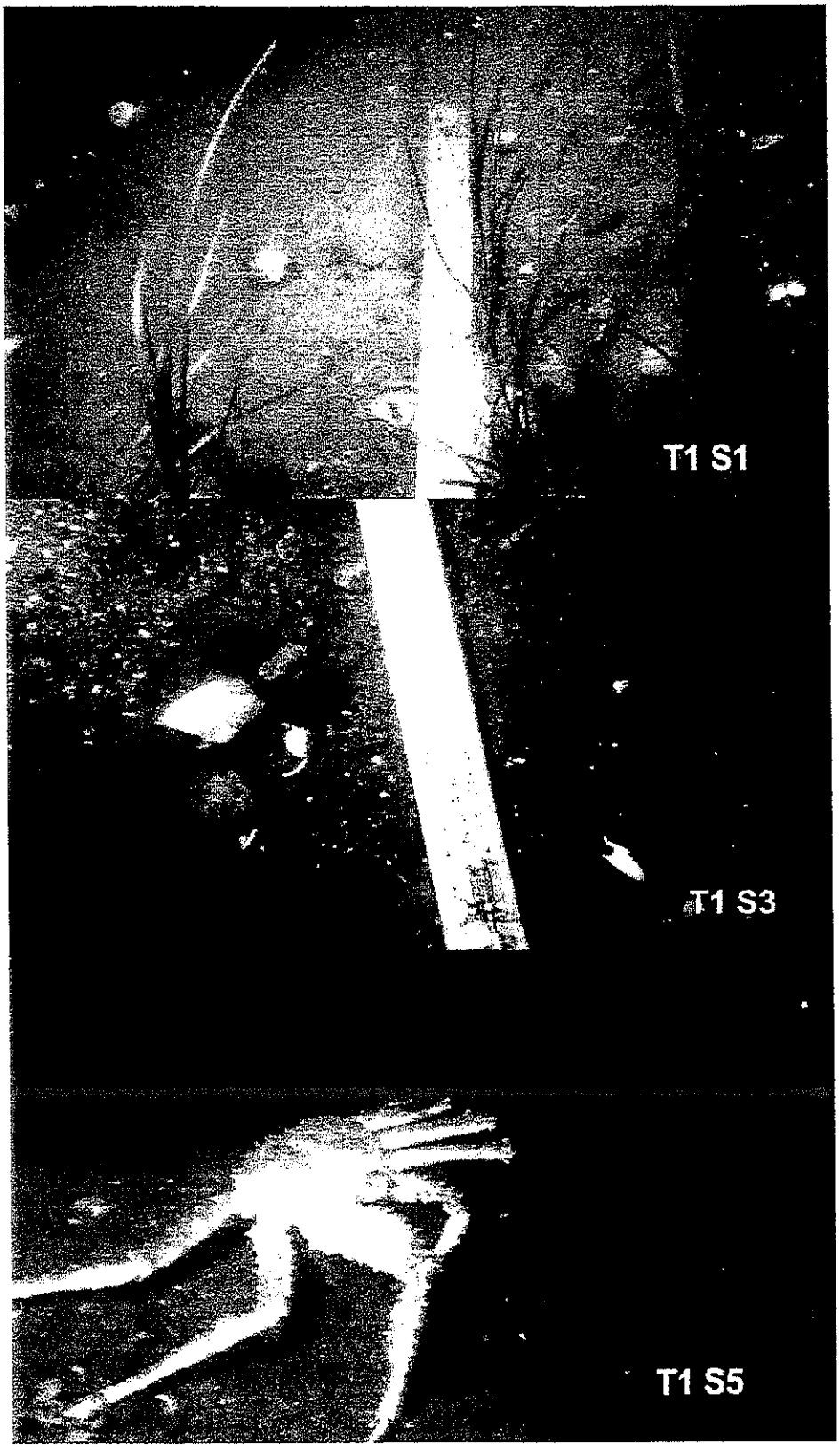


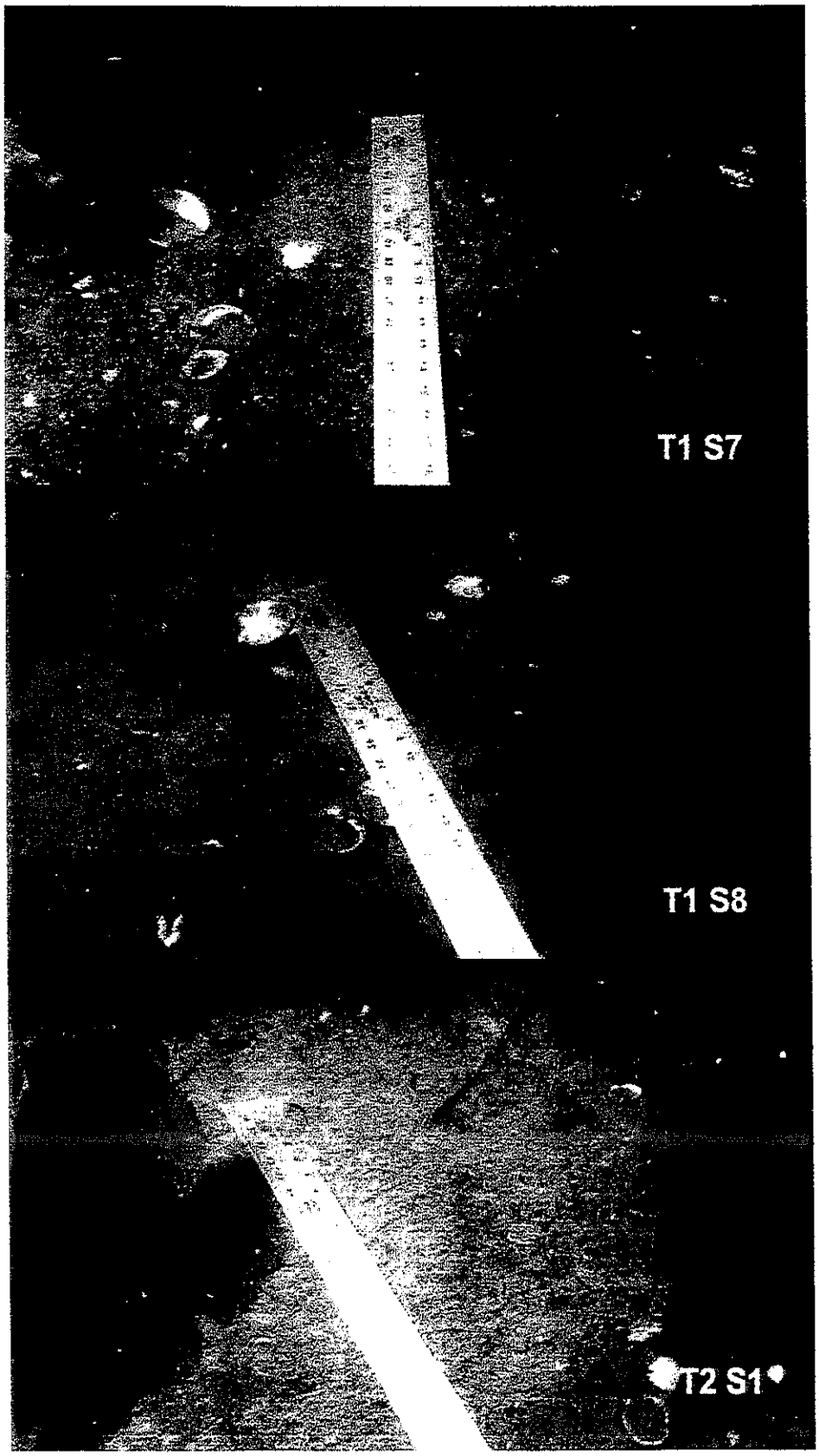
A comparison of the transect patterns of 2000 and 1991 is limited to further defining those areas of continuous cover and discontinuous cover. A comparison of the progress of advancement or remission is not possible as the both survey patterns were accomplished on the same day.

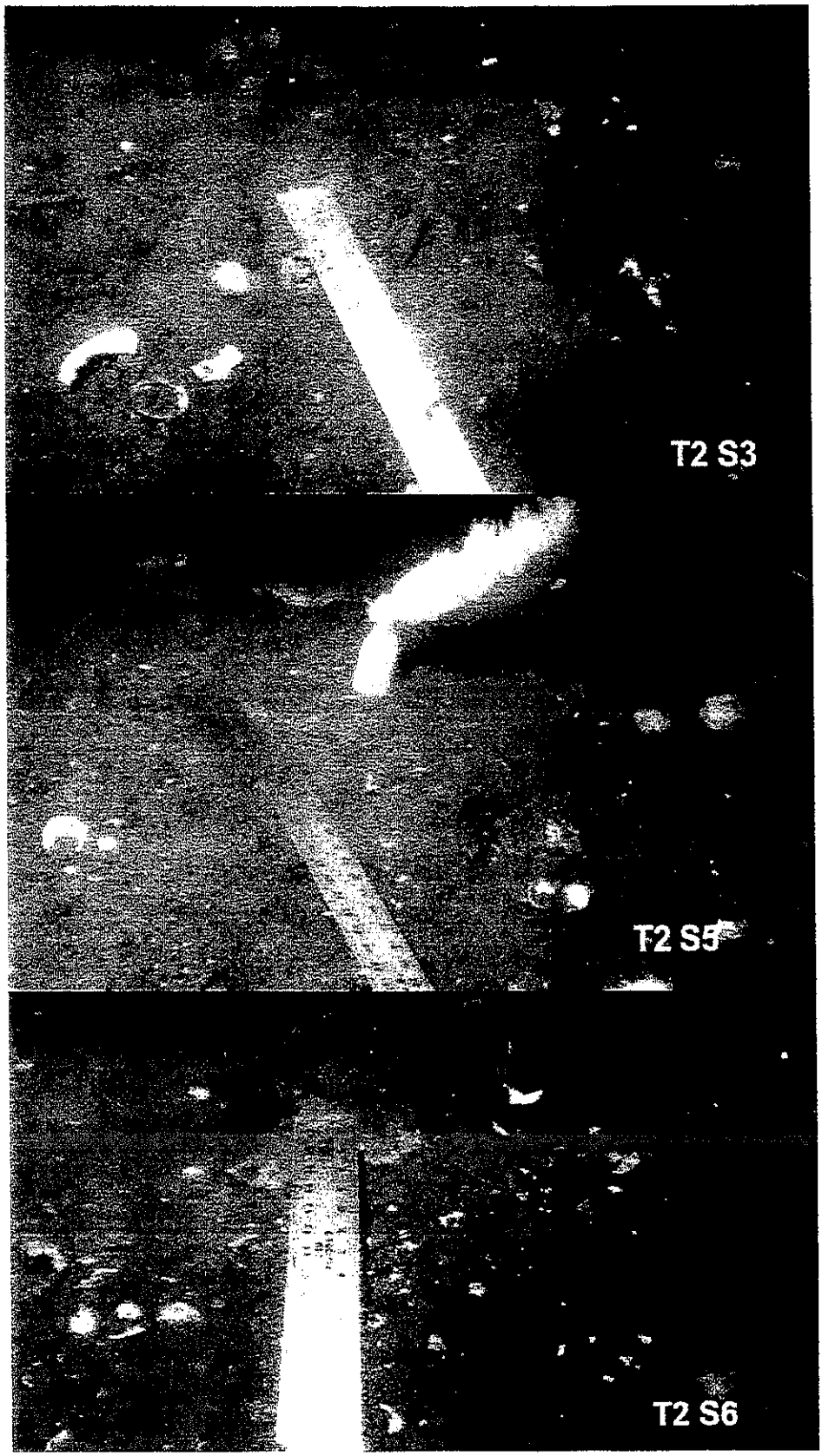
Appendix B

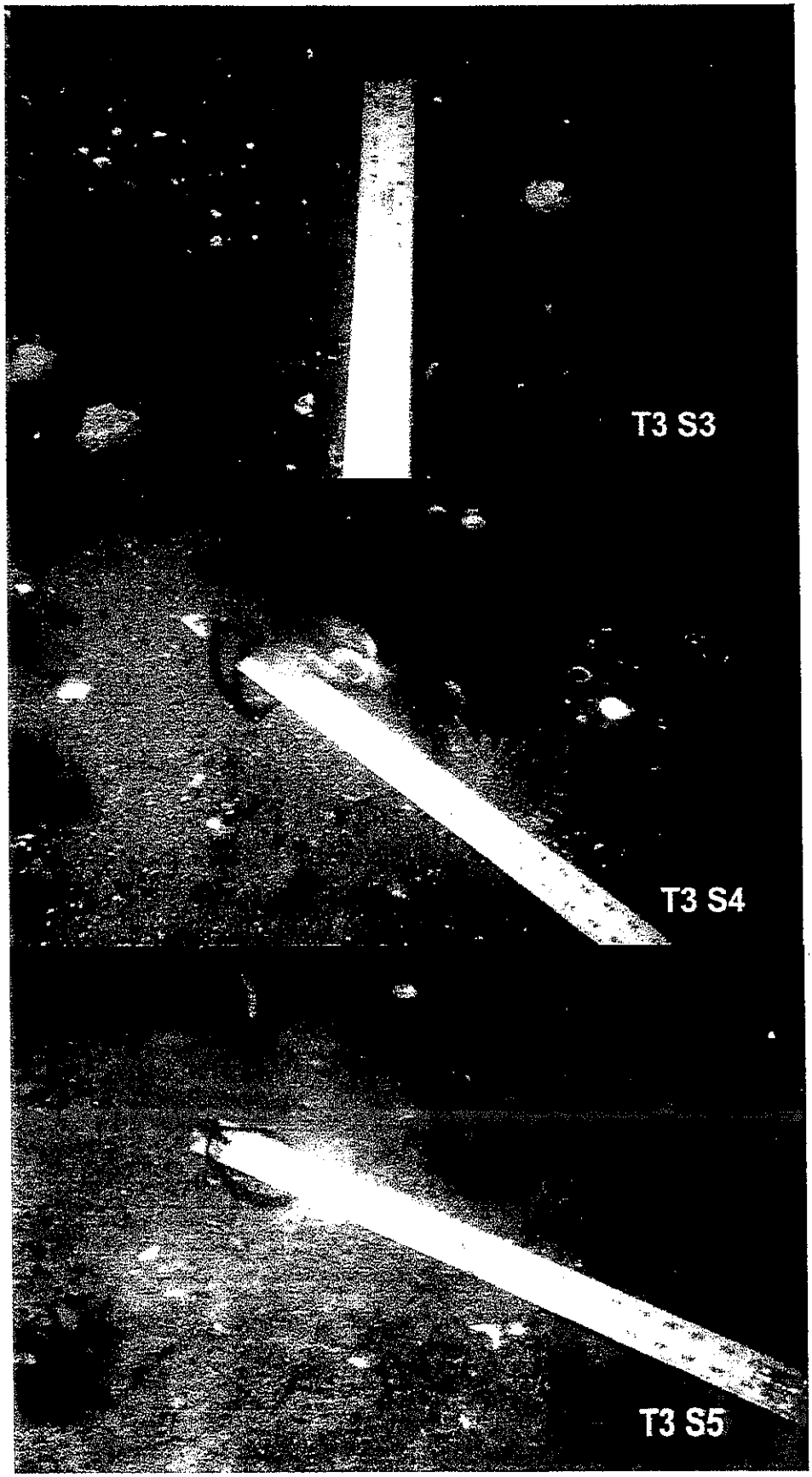

Tides:Hoonah Harbor, Port Frederick 5/27/2002
Hoonah Harbor, Port Frederick
based on Juneau, Alaska (NOAA)
Lat 58°08' N Lon 135°26' W
Station ID: 1631
Moonset: 5:00 am
Moonrise: 11:30 pm
Spring Tide
Full moon yesterday
Daily Highs & Lows:
Average Tides:
Mean Range: 12.40 ft
Mean Tide: 7.76ft
Monday, May 27, 2002
Alaska Daylight Time
Sunrise: 4:15 am
Sunset: 9:45 pm
18.0
15.0
12.0
9.0
6.0
3.0
0
-3.0
-6.0
FEET
14.88 ft (MLLW)
0.00 ft (MLLW)
Time
6:30 pm, 5.9 ft

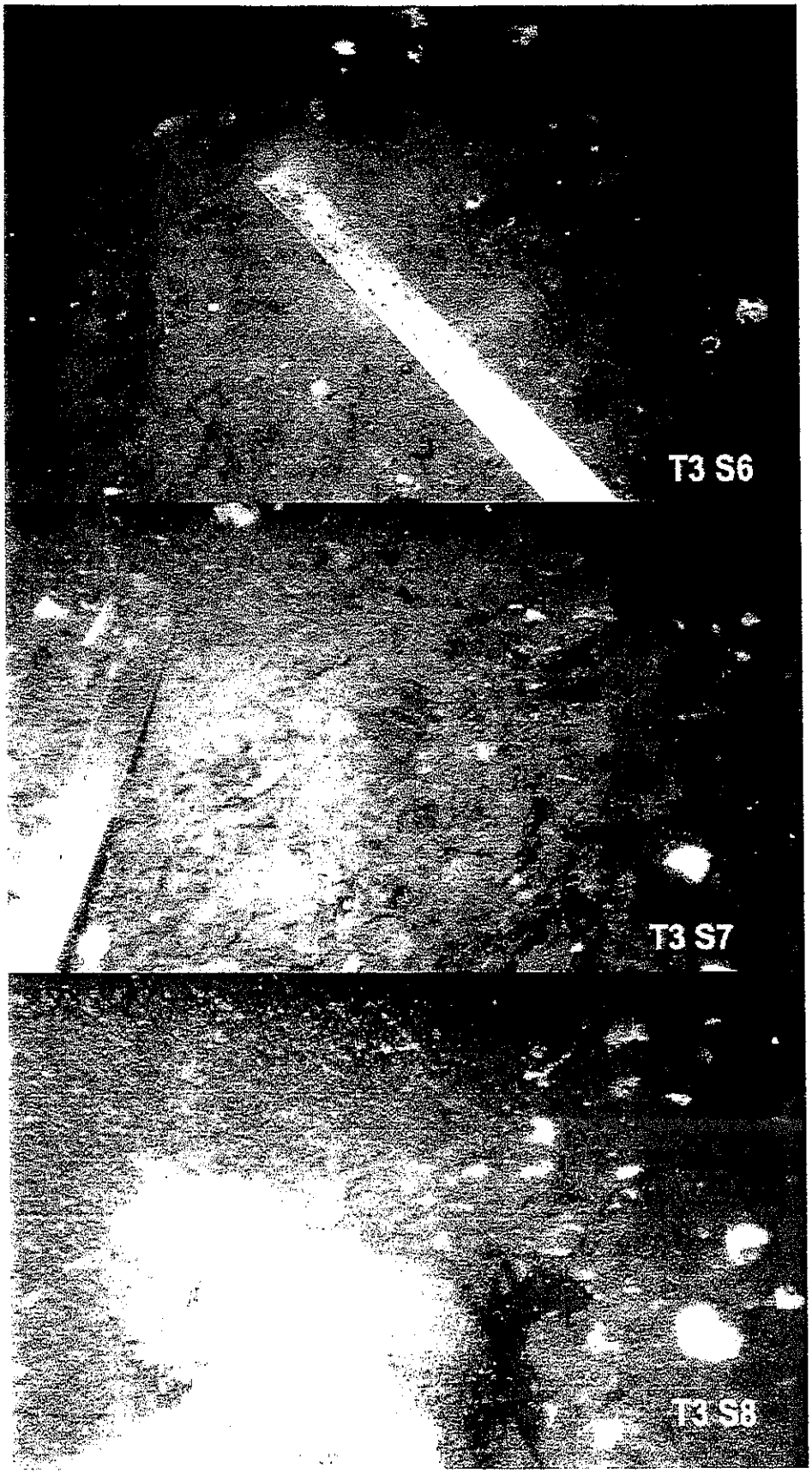
Appendix C

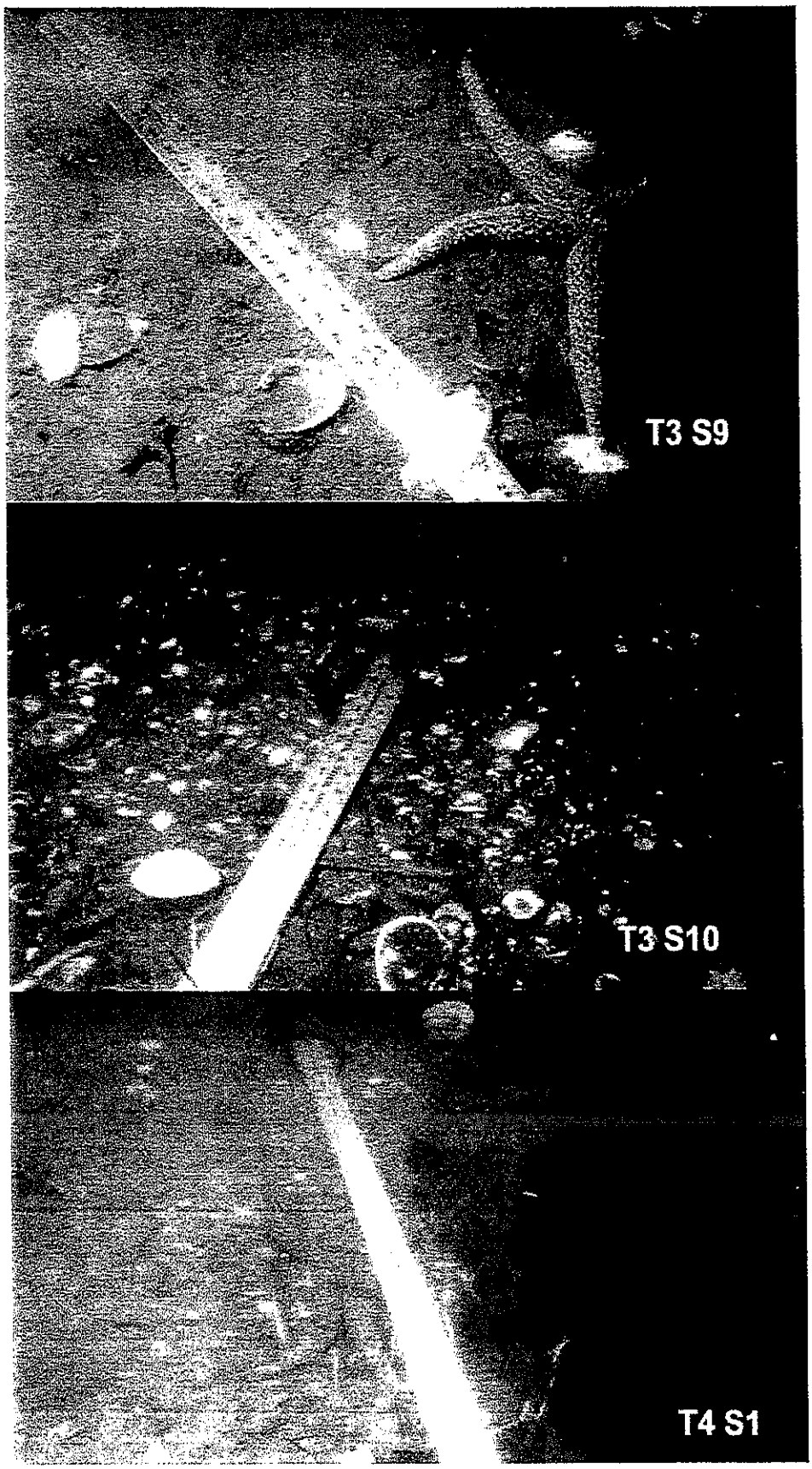


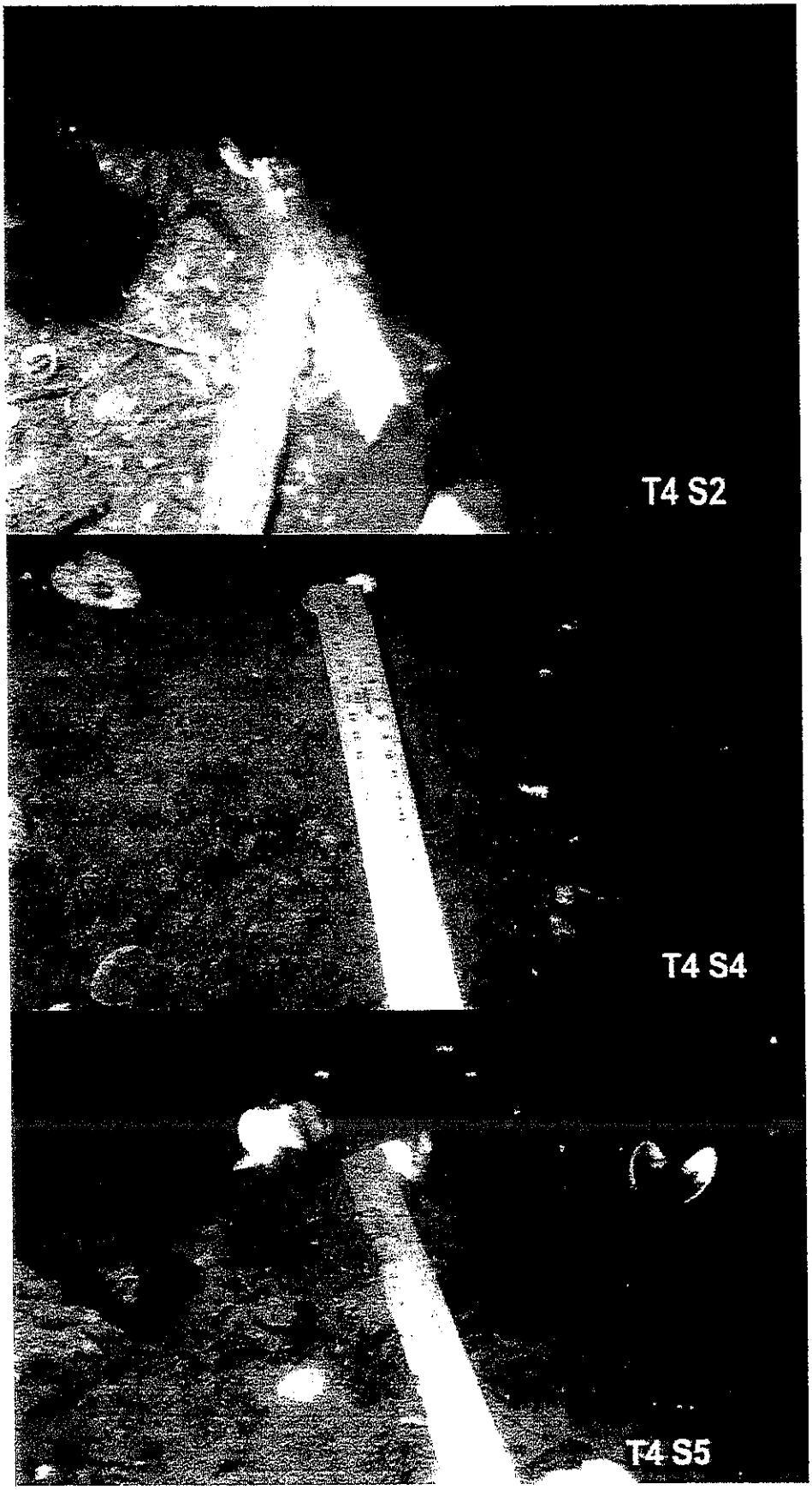

T1 S7
T1 S8
T2 S1

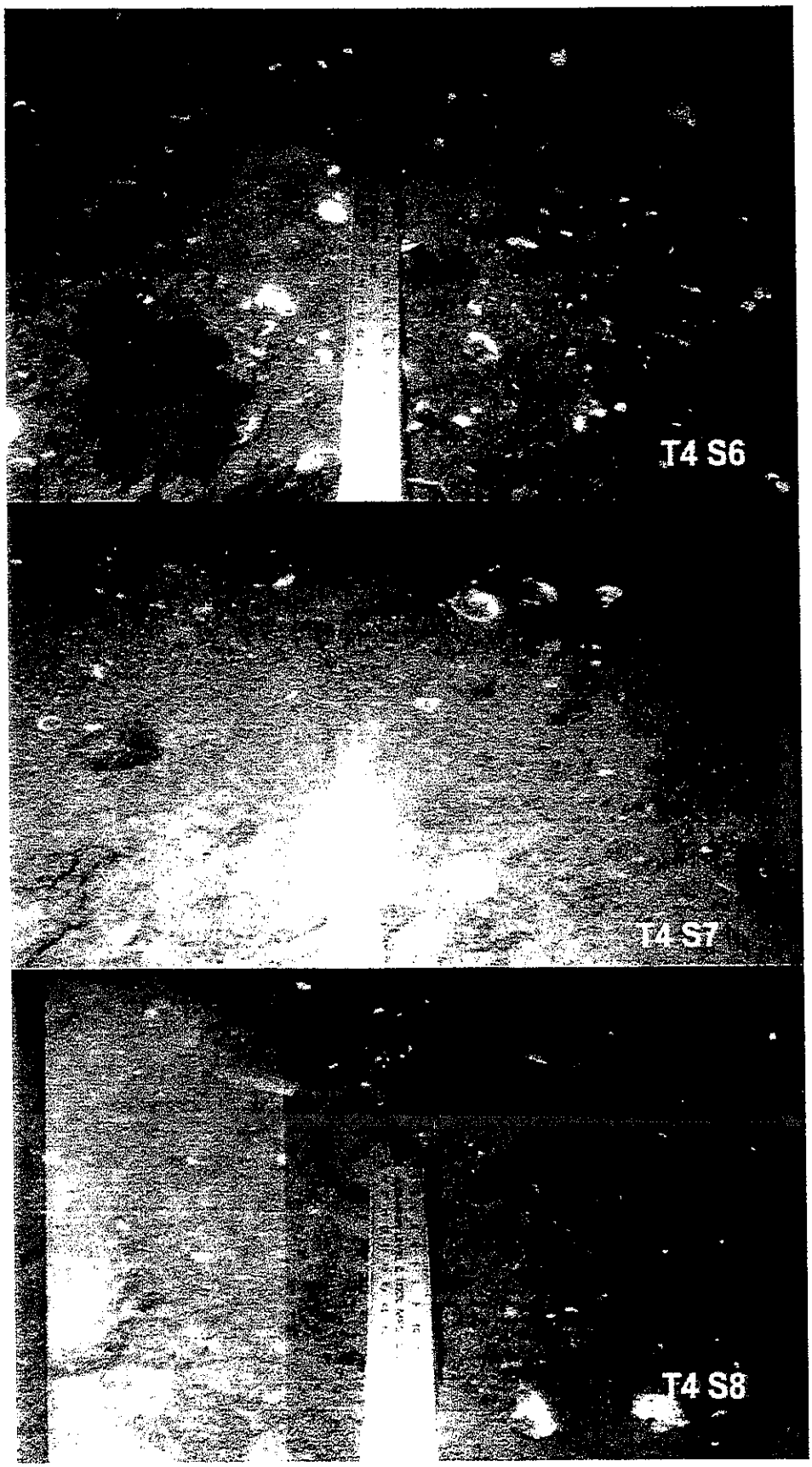

T2 S3
T2 S5
T2 S6

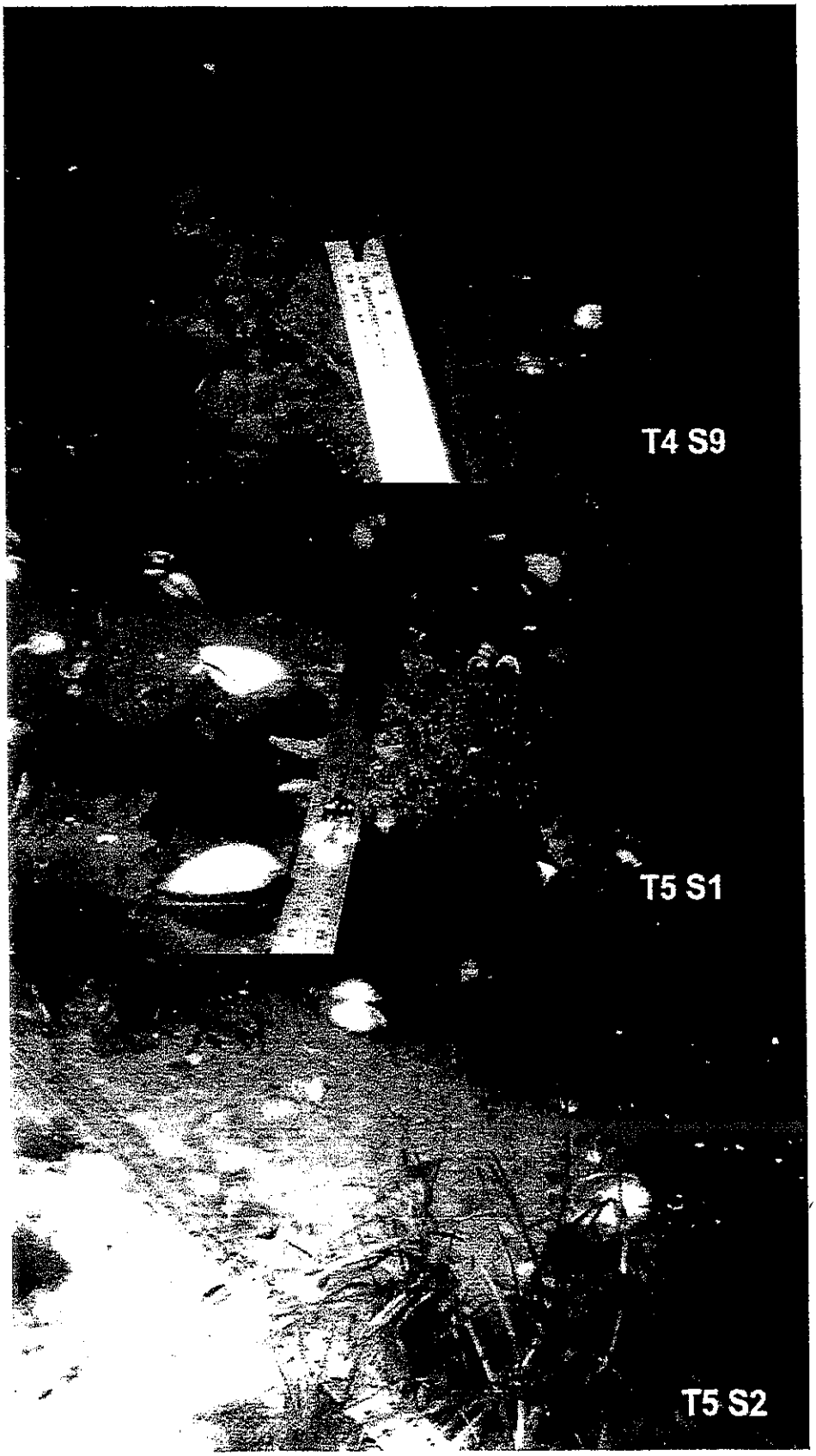

T3 S3
T3 S4
T3 S5

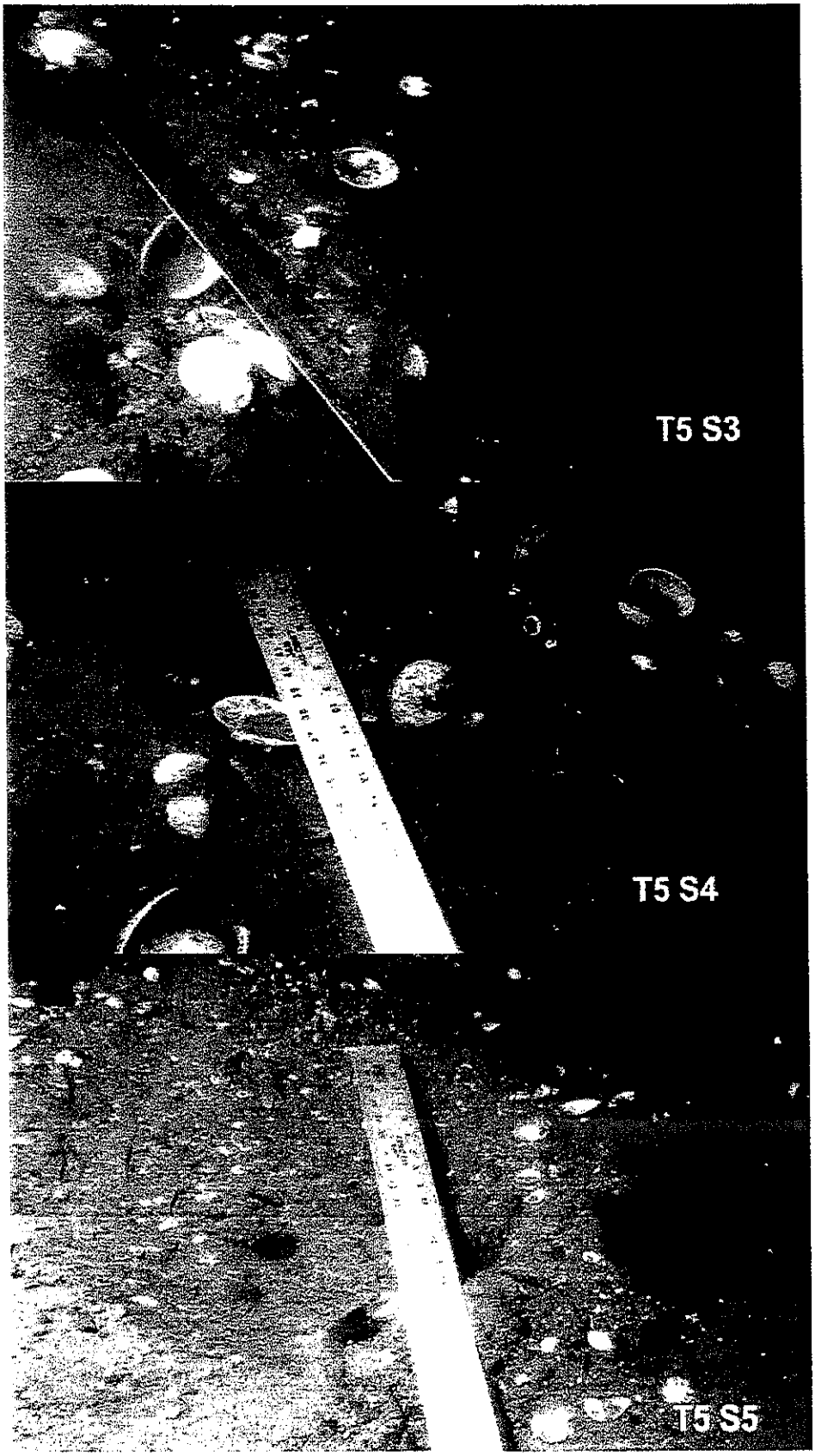

T3 S6
T3 S7
T3 S8

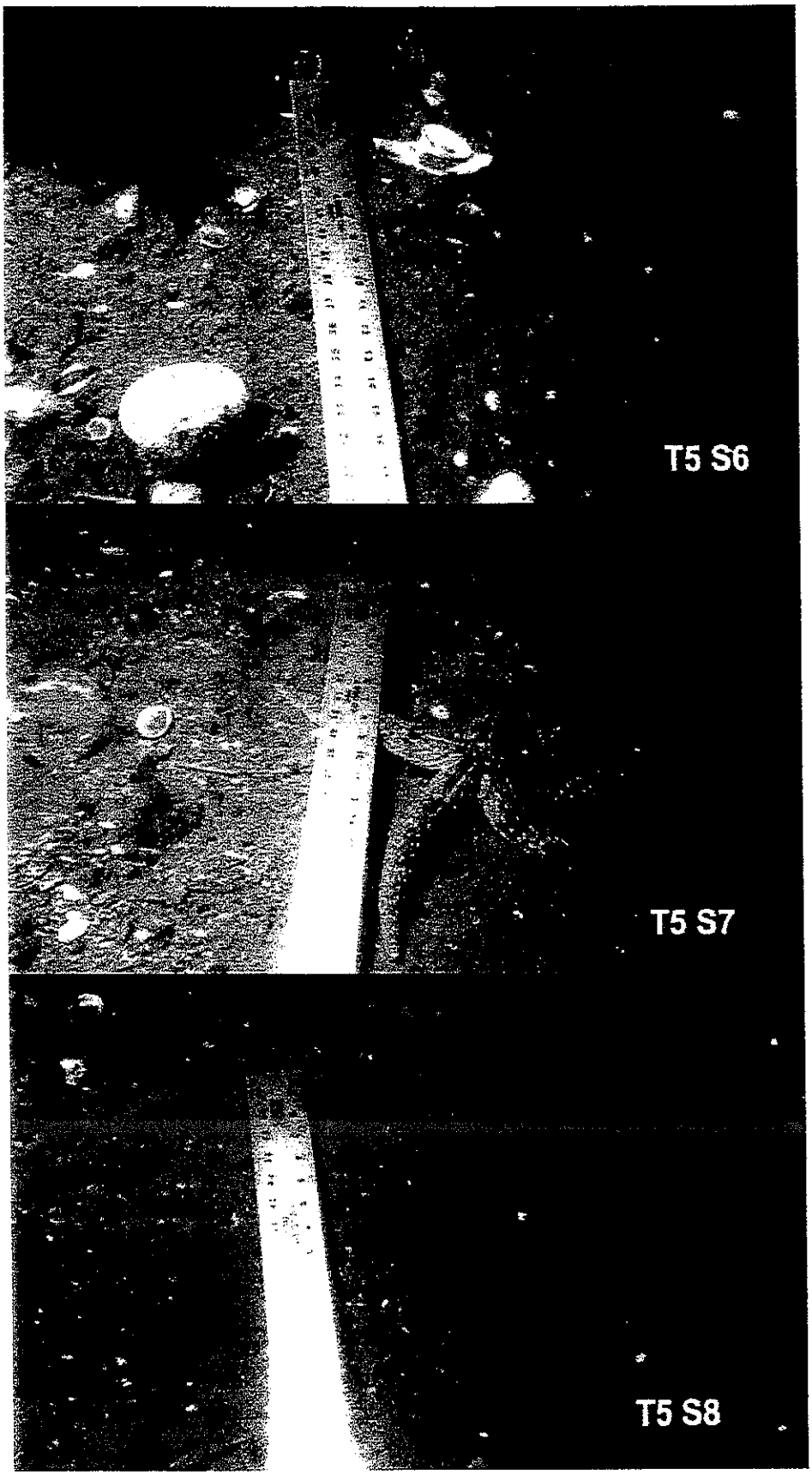

T3 S9
T3 S10
T4 S1

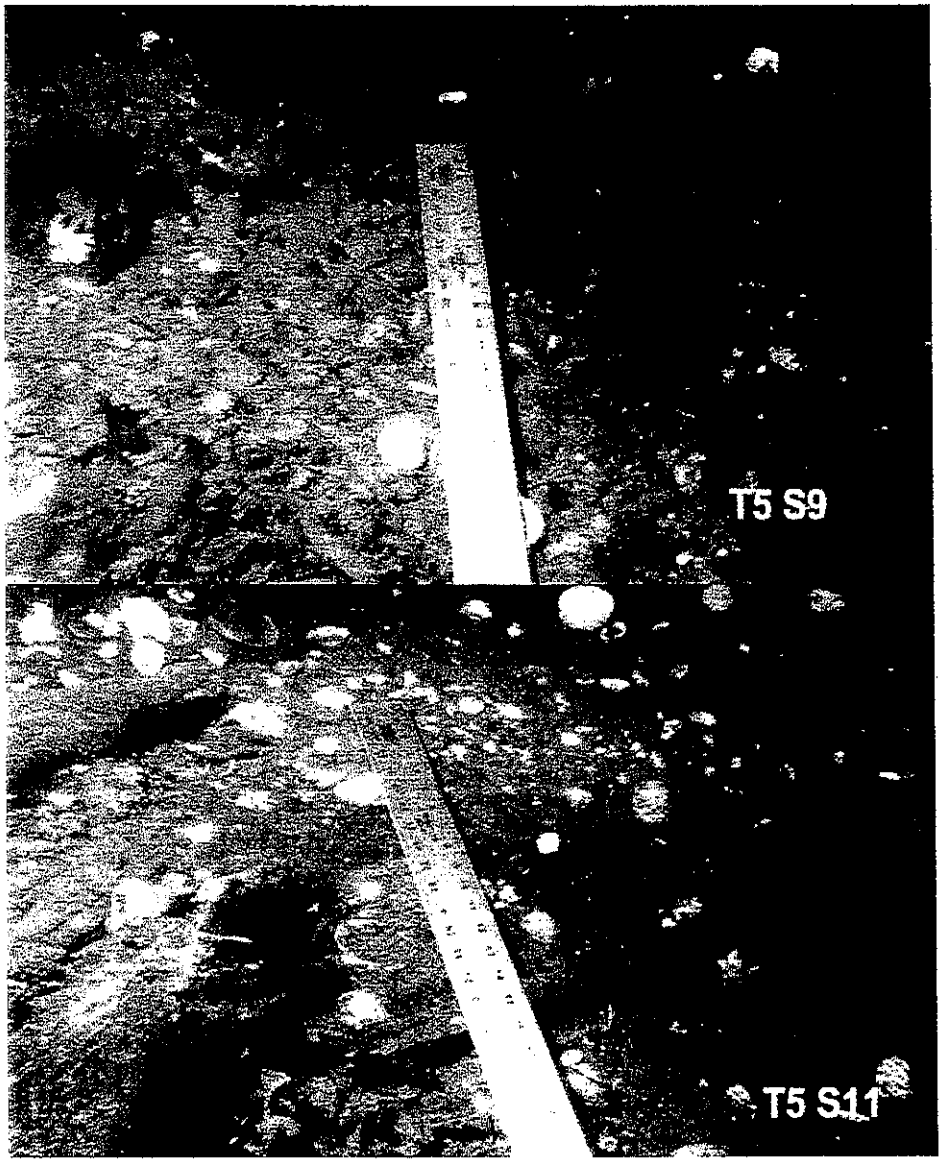

T4 S2
T4 S4
T4 S5


T4 S6
T4 S7
T4 S8


T4 S9
T5 S1
T5 S2


T5 S3
T5 S4
T5 S5


T5 S6
T5 S7
T5 S8


T5 S9
T5 S11

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: 170° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	7			S		*Zostera marina*
2	7	1	>10	S-SHELL		*Fucus*
3	9	1	>10	S-SHELL		
4	12	2	10	S-SHELL		Seastar
5	13	1	10	SL-SHELL		King Crab
6	15			SL-SHELL		*Ulva*
7	18			S		*Ulva*

Log Transfer Ramp Transect 2: 200° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	5			S		*Ulva*
2	8			S		
3	11			S		*Ulva*
4	17	1	10	S		
5	25			S-Shell	2	*Ulva*
6	32			S-M	3	
7	38			M-SL	3	Butter Clams
8	44	1	10	M-SL		*Ulva*
9	50	1	10	M-SL		
10	56			M-SL		

Log Transfer Ramp Transect 3: 230° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	4			C-S		Sea Star
2	6			S		
3	7	1	20	S		*Ulva*
4	9	1	10	S-SL	1	
5	20	1	10	S-SL		*Ulva*
6	31	3	100	S-SL		Seastars
7	40	>1	50	S-SL	1	*Ulva*
8	50	>1	20	S-SHELL	3	Octopus
9	55	>1	10	S-SHELL	3	*Ulva*
10	62	>1	10	S	3	

Log Transfer Ramp Transect 4: 260° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	7			S		*Zostera marina*
2	10			S		*Zostera marina*
3	15	>2	50	S		*Zostera marina*
4	18	>2	50	SL		*Zostera marina*
5	21	3	100	SL		*Ulva*
6	24	3	100	SL		*Ulva*
7	32	3	100	SL	>1	
8	36	3	100	M	>1	*Ulva*
9	40	1	70	M	1	Seacucumber
10	47	1	70	M	2	*Ulva*

Log Transfer Ramp Transect 5: 290° Bearing

Sample Point	Depth at MLLW	Bark Depth	% of Cover	Substrate type	Depth of sedimentation	Marine Life
1	7			S		*Ulva*
2	11	4	25	S		*Zostera marina*
3	14	4	25	S	>1	*Ulva*
4	20	1	50	S-SL	1	*Ulva*
5	27	2	100	SL	1	
6	33	2	100	SL	>1	*Ulva*
7	36	2	75	SL	2	
8	43	2	75	M	2	
9	50	1	50	M	4	*Ulva*
10	58	1	50	M	4	
11	60	1	25	M	4	