



JIM F

## SEALASKA TIMBER CORPORATION

2030 SEA LEVEL DRIVE, SUITE 202  
KETCHIKAN, ALASKA 99901  
(907) 225-9444  
FAX: 225-5736 Administration  
225-2196 Operations

April 7, 1995

United States Environmental Protection Agency  
Region 10  
1200 Sixth Avenue  
Seattle, Washington 98101

Re: NPDES Permit No. AK-004784-8 (Tolstoi Bay #1). Bark  
accumulation survey.

Dear Sir or Madam:

On June 29, 1987 the Environmental Protection Agency issued the above referenced National Pollutant Discharge Elimination System (NPDES) Permit to Sealaska Corporation for a log transfer facility (LTF) located in Tolstoi Bay on Prince of Wales Island five miles southeast of Thorne Bay. Production in this facility started in May 1992. This annual report on bark accumulation pertains to our 1995 fiscal year (April 1, 1994 to March 31, 1995). The permit requires an annual inspection to determine the aerial extent, thickness, and percent coverage of bark debris. The bark accumulation survey is to occur at the beginning of each operating season.

The purpose of this investigation was to evaluate bark debris accumulation to date. Craig's Dive Center, of Craig, Alaska performed the dive inspection on March 27, 1995. See the attached report from Craig's Dive Center.

This fulfills our reporting obligations for the year. If additional information is required, please do not hesitate to call our offices. Thank you.

Sincerely,  
Sealaska Timber Corp.

Bob Girt  
Engineering Manager

RLG/cjb enclosures

cc: Richard Harris, SC, Juneau  
Alaska Department of Environmental Conservation, Juneau  
File

**Craig's Dive Center**  
107 Main St./PO Box 796  
Craig, AK 99921  
(907)826-3481 (phone/Fax)

**Sealaska Timber Corporation**  
2030 Sea Level Dr., suite 202  
Ketchikan, AK 99901  
(907)225-9444

March 31, 1995

**Subject:** 1995 Tolstoi LTF log debris survey.

**Abstract:**

The requested underwater survey to determine the extent of log debris accumulation at the Tolstoi Log Transfer Facility (LTF), Prince of Wales island, Alaska, was performed on March 27, 1995. Purpose of the survey is to satisfy the LTF's N.P.D.E.S. permit requirement for a bark deposition monitoring program.

Protocol for operating a bark monitoring program are given in the LTF Siting, Construction, Operation and Monitoring/Reporting Guidelines, 1985.

**Methods:**

The survey technique described follows a method used by government agencies when conducting similar site for use as an LTF. Standardizing techniques provides a better comparison with baseline data collected prior to LTF use, focuses the survey on the log bundle entry area while providing coverage of adjacent grounds and provides a format that can be reproduced in the future.

A permanent reference point location is selected, ideally in the center of the bundle entry structure/ramp and located measurably close to an essentially permanent structure/landmark so that the reference point can be relocated in the future for continuation of the monitoring program. Depth of the reference point is positioned as close to 0 feet Mean Low Low Water (MLLW) as possible using the NOAA Tide Tables for tide correction calculations. Using the outer horizontal face of the entry structure as a reference plane (center of a drive down ramp/low angle slide), magnetic compass headings for five transects in 30 degree intervals are selected with the permanent reference point as the origin for each of the five transects. The middle transect is perpendicular (parallel to ramp/slide axis) to the face of the entry structure.

Each transect is sampled at five meter intervals starting from the origin at the permanent reference point. Sample points continue to be established along a transect until a water depth of

60 feet MLLW is reached or the measured bark debris depth becomes insignificant. At each sample point several data are recorded by the diver; water depth, debris depth (measured in centimeters), percent coverage of debris (estimated by randomly dropping the meter stick at the sample point and noting amount of contact with debris), debris composition and character, substrate type, general algal and animal types and condition, abiotic factors such as direction and strength of current (if present) and the presence of any notable manmade debris. Transects are labelled with their magnetic compass heading for identification purposes.

On a subsequent dive 35mm photographs are taken of some of the sample points to document substrate, bark debris and representative algal and animal life.

### **Results:**

<b>Site:</b> Tolstoi	
<b>Date Surveyed:</b> 3/27/95	<b>Total # of Sample Points:</b> 69
<b>Time of Sampling:</b> 1324	<b>Average Bark Depth:</b> 13.3 cm
<b>Sampler:</b> Sempert	<b>Calculated Survey Area:</b> 3.3 acre

Area with Debris Cover	Area with 100% Cover and Debris Depth >10 cm
3.3 acre	0.5 acre

The established permanent reference point in the center of the drive down ramp and located at a depth of approximately 3 feet MLLW. A total of 69 sample points were taken on the five transects. Of these, 32 (46%) had a measured debris depth of ten centimeters or greater and an estimated 100% coverage. Sample points with the greatest bark depth are in the immediate vicinity of the input point at the base of the ramp's fill rock slope along transects 290, 320 and 350. The surface area covered by a continuous layer of bark debris extends out to the cutoff depth limitation where sampling is stopped and was calculated to be approximately 3 acres.

### **Observations:**

Weather conditions at survey time were overcast with occasional light rainshowers, winds southeasterly at ten knots with gusts to 25 knots, air temperature in the low forties. The diving started at 1226 and took place during mid tide. A low slack tide occurred at 1627 of 0.1 feet (corrected to subordinate station #1461, Hadley, and based on the Ketchikan tables) and the

closest high tide was at 1008 at 15.2 feet. A moderate tidal exchange of 15.1 feet produced light east to west current, the dominant flow pattern as noted in previous surveys. Water temperature was measured to be in the low forties, visibility was estimated at approximately 25-30 feet and possibly greater but for the low light conditions of an overcast day.

On the steep rock slopes of the ramp the bark debris was composed primarily of small bark debris particles with scattered large chunks (>10.2 cm) and chips (between 1.3 cm and 10.2 cm) with occasional branches. The gaps and crevices between the boulders of the ramp slope have been pretty much filled in by debris. Beyond the base of the fill rock on the natural bottom, the first several sample points past had a uniform layer of fine, deep bark dust (<1.3 cm in particle size) with occasional fresh branches.

Factors such as the location of the LTF near the mouth of a small bay well up into the larger Tolstoi bay and the prominent reefs extending out from shore in the vicinity of transects 020 and 050 help create an east to west current pattern regardless of ebb or flood tide conditions. This prevailing current causes a debris deposition plume in a westerly direction.

Other than the accumulation of bark debris itself, no visible signs of an unhealthy ecosystem were observed. Waste products excreted by wood decay organisms appear to be accumulating rapidly around large chunks of wood and sunken logs indicating an active decomposition system. There was no sign of the debris acting as a barrier to oxygen exchange leading to anaerobic conditions; no gas bubble evolution was observed and no black, anaerobic layers were found when random sample trenches were dug by hand in the debris layer.

Marine life was observed throughout the entire sample area. Even on the steep ramp slopes where the bark debris accumulation is unstable, organisms like Sea stars, Green sea urchins, Sea cucumbers and a Kelp greenling were observed. Where open crevices remained between slope boulders more than one species of Rockfish hovered about the openings. In areas of uniform, thick bark debris the predominant species were Sea cucumbers and hermit crabs with a light, patchy bacterial layer on the surface of the debris. Where rocky substrate was available, mostly the reef crossing transects 020 and 050, kelp and typical encrusting organisms were present. Numerous Lions mane nudibranchs were observed congregating on kelp fronds.

Where the bark layer was thin enough, benthic organisms such as clams, Sea pens and tube anemones were numerous. Clam siphons observed in the extended position had the white bacterial growth on them. Several Sun stars were actively digging in the sand after their clam prey.

No significant manmade debris was observed. Banding wire was the only debris noticed during the dives.

If there are any questions about the survey or this report, please call us at (907)826-3481.  
Thank you for allowing Craig's Dive Center to be of service.

Report by:



Craig Sempert

**Table 1**

**Transect Location**

Transects	Reference Point Location
290	Centered in the middle of the drive down ramp at a depth estimated to be close to zero feet MLLW (actual = 3 ft MLLW), still on the main road bed.
320	
350	
020	
050	

Table 2

Transect Data

Transect-Sample Pt.	Depth from MLLW	Debris Depth (cm)	Percent Coverage
Ref.	3	<3	50
290/1	4	3	75
290/2	9	15	100
290/3	20	46	100
290/4	35	33	100
290/5	40	31	100
290/6	45	36	100
290/7	48	31	100
290/8	52	25	100
290/9	55	15	100
290/10	62	10	100
320/1	5	5	90
320/2	9	13	100
320/3	20	25	100
320/4	34	23	100
320/5	41	23	100
320/6	47	20	100
320/7	52	15	100
320/8	56	10	100
320/9	63	8	100
350/1	4	3	75
350/2	8	5	75
350/3	18	43	100
350/4	26	41	100
350/5	29	36	100
350/6	30	15	100
350/7	34	15	100
350/8	36	13	100
350/9	43	10	100
350/10	51	8	100
350/11	57	5	90
350/12	61	5	90

Table 2 (cont.)

Transect-Sample Pt.	Depth from MLLW	Debris Depth (cm)	Percent Coverage
020/1	1	3	50
020/2	3	3	50
020/3	8	10	50
020/4	13	33	100
020/5	14	43	100
020/6	12	10	75
020/7	10	10	75
020/8	10	<3	75
020/9	13	13	75
020/10	19	8	100
020/11	20	8	100
020/12	26	5	95
020/13	31	10	75
020/14	37	3	90
020/15	47	<3	90
020/16	52	3	50
020/17	61	2.5	50
050/1	0	3	10
050/2	5	3	90
050/3	10	10	100
050/4	12	18	100
050/5	13	15	100
050/6	11	3	90
050/7	5	<3	75
050/8	1	<3	75
050/9	6	5	90
050/10	11	10	100
050/11	17	8	100
050/12	22	15	100
050/13	25	10	100
050/14	29	5	100
050/15	32	8	100
050/16	37	8	100
050/17	43	5	100
050/18	48	3	90
050/19	52	<3	75
050/20	57	3	75

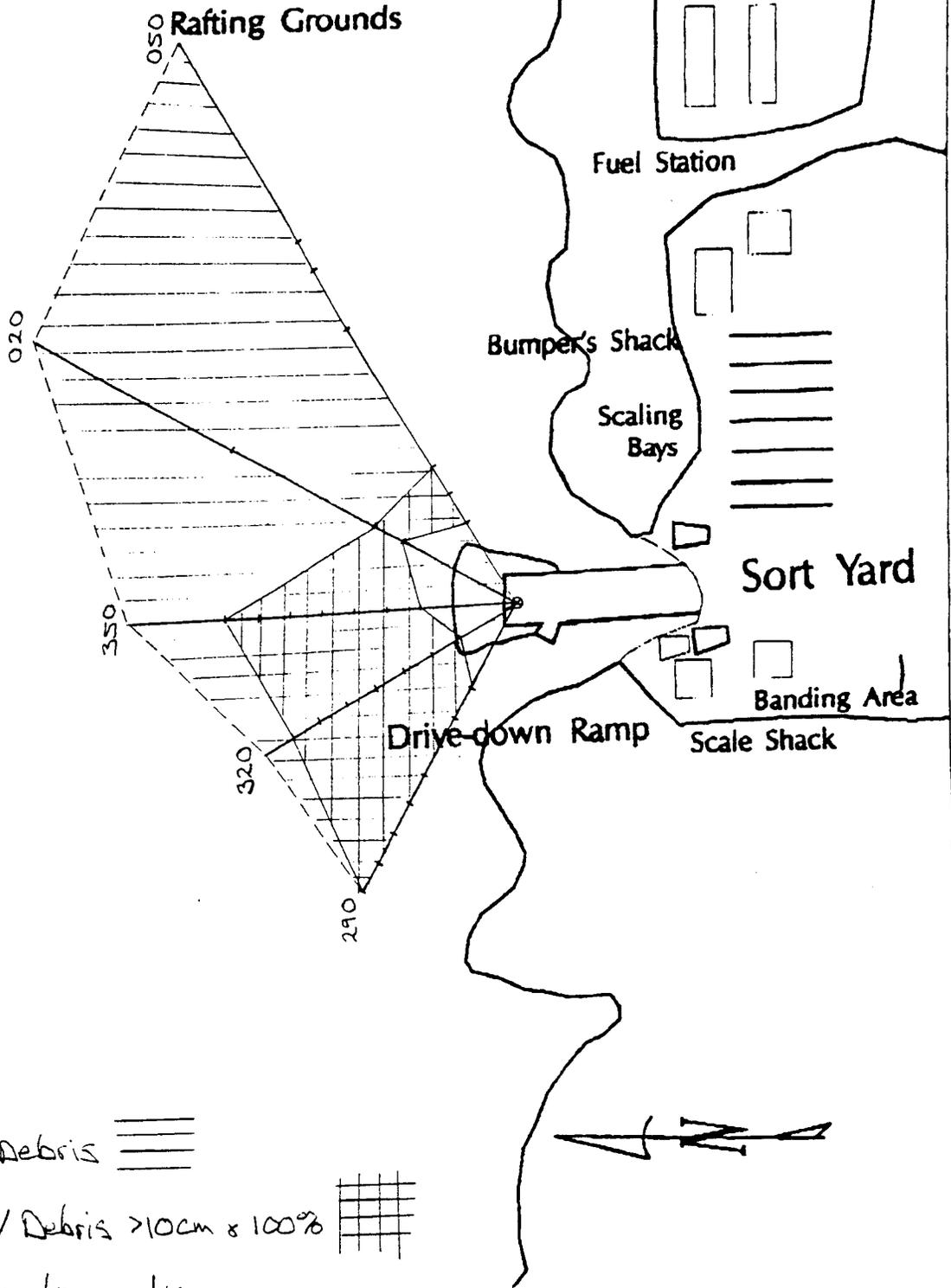
**Table 3**

**Photograph Key**

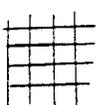
<b>Photo #</b>	<b>Transect/ Sample Pt.</b>	<b>Description</b>
1	Ref. Pt.	Ramp gravel and light bark debris
2	020/1	More bark debris
3	020/2	New kelp growth on fill rocks
4	020/3	Near base of fill slope
5	020/4	Fine debris with fresh branch
6	020/5	Continued fine debris layer, old stake tip
7	020/6	Bedrock reef
8	020/7	Debris filling in valley in bedrock, wire
9	020/8	Fine debris on kelp frond
10	020/9	Reef edge, nudibranchs and tunicate
11	020/10	Clam siphons, tube anemones in bark
12	020/11	Sun star digging after clam
13	020/12	Sand/shell substrate now visible
14	020/13	Debris on kelp, rock and sand
15	020/14	Debris up to bedrock, swifter
16	020/15	More substrate visible
17	350/9	Sea cucumbers
18	350/7	Fresh branch over uniform fine debris
19	320/4	Pennant/chain connection
20	320/3	Sea star, steep debris slope
21	320/1	Kelp greenling on top of ramp

# Tolstoi Bay LTF Dive Survey

3/27/95



Sample area w/ Debris 

Sample area w/ Debris >10cm x 100% 

Transect scale 1mm = 1m