

**2015
ANNUAL REPORT**

**ZOSTERA JAPONICA CONTROL ON COMMERCIAL
CLAM BEDS IN WILLAPA BAY**

WIEGARDT & SON INC.

Submitted to:

Washington Department of Ecology

November 2, 2015

Author:

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WGHOGA Project Coordinator

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Treatment Information

All treatments occurred within the boundaries of the provided bed corner coordinates, but all acres within these boundaries may not have been treated. For information concerning locations treated, size in acres, treatment dates and amount of active ingredient applied to the treatment area refer to Table 1.

Table 1. Treatment information for the control of *Zostera japonica* on commercial clam beds in Willapa Bay, WA.

Treatment Dates	Bed Name	Latitude	Longitude	Acres	Total Amount of Pesticide Applied (oz)	Active Ingredient (Total lbs.)	Active Ingredient (lbs. per acre)						
5/5/2015	D91, D74, D4	46.4609	-124.0240	12	144	1.1250	0.0938						
		46.4606	-124.0216										
		46.4596	-124.0216										
		46.4583	-124.0222										
		46.4585	-124.0204										
		46.4591	-124.0243										
5/6/2015	D91, D4	46.4609	-124.0250	4.8	57.6	0.4500	0.0938						
		46.4609	-124.0240										
		46.4592	-124.0243										
		46.4584	-124.0240										
		46.4585	-124.0243										
		46.4593	-124.0254										
5/18/2015	E228, E94, E79	46.6025	-124.0338	4.9	68.6	0.5359	0.1094						
		46.6032	-124.0328										
		46.6013	-124.0312										
		46.0100	-124.0319										
5/19/2015	E94, E79	46.6035	-124.0321	4.4	61.6	0.4813	0.1094						
		46.6017	-124.0302										
		46.6013	-124.0311										
		46.6032	-124.0328										
5/28/2015	TL67, TL380	46.5864	-124.0236	2.7	27	0.2109	0.0781						
		46.5863	-124.0232										
		46.5843	-124.0225										
		46.5843	-124.0230										
		46.5851	-124.0236										
6/3/2015	E108, E228	46.6056	-124.0354	5.6	67	0.5234	0.0935						
		46.6056	-124.0337										
		46.6048	-124.0328										
		46.6037	-124.0321										
		46.6045	-124.0343										
6/4/2015	D72, D108, D103	46.4875	-123.9947	17.9	215	1.6797	0.0938						
		46.4874	-123.9944										
		46.4818	-123.9943										
		46.4782	-123.9941										
		46.4731	-123.9941										
		46.4707	-123.9942										
		46.4707	-123.9947										
		46.4730	-123.9947										
		46.4782	-123.9947										
		46.4818	-123.9947										
		6/15/2015	TL67					46.5929	-124.0284	8.5	102	0.7969	0.0938
								46.5931	-124.0278				
46.5917	-124.0277												
46.5917	-124.0284												
46.5938	-124.0268												
46.5944	-124.0252												

		46.5936	-124.0242				
		46.5926	-124.0245				
		46.5924	-124.0256				
6/16/2015	TL67	46.5949	-124.0309	10.5	126	0.9844	0.0938
		46.5954	-124.0296				
		46.5947	-124.0280				
		46.5933	-124.0265				
		46.5930	-124.0285				

Monitoring Results

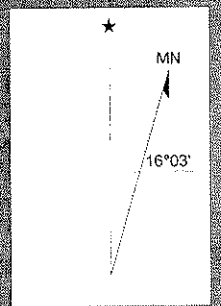
Under special condition S5.A monitoring is required if treatment occurs up to the 10m property line buffer. In 2015 treatment occurred up to the 10m buffer on beds D72, D103, and D108 due to the narrow size of the beds. Results of the monitoring including waypoint name, GPS coordinates and width of affected *Zostera spp.* into the buffer is shown in Table 2 and Figures 1-21.

Table 2. Monitoring data including distance into the buffer that *Zostera spp.* plants were affected 30 days after treatment.

Waypoint Name	Sample Site	Latitude	Longitude	Width into Buffer (Inches)
Pin # 1	D108	46.4874	-123.9944	7
Pin # 2	D108	46.4818	-123.9943	0
Pin # 3	D108	46.4845	-123.9943	0
Pin # 4	D108	46.4822	-123.9842	0
Pin # 5	D108	46.4804	-123.9943	0
Pin # 6	D72	46.4782	-123.9942	9
Pin # 7	D72	46.4766	-123.9942	8
Pin # 8	D72	46.4748	-123.9941	No <i>Zostera</i> present
Pin # 9	D72	46.4731	-123.9941	17
Pin #10	D103	46.4707	-123.9942	0
Pin #11	D103	46.4707	-123.9947	27
Pin #12	D72	46.4730	-123.9947	0
Pin #13	D72	46.4748	-123.9948	0
Pin #14	D72	46.4766	-123.9947	36
Pin #15	D72	46.4782	-123.9947	0
Pin #16	D108	46.4804	-123.9947	0
Pin #17	D108	46.4822	-123.9947	29
Pin #18	D108	46.4845	-123.9947	0
Pin #19	D108	46.4861	-123.9947	0
Pin #20	D108	46.4874	-123.9947	0



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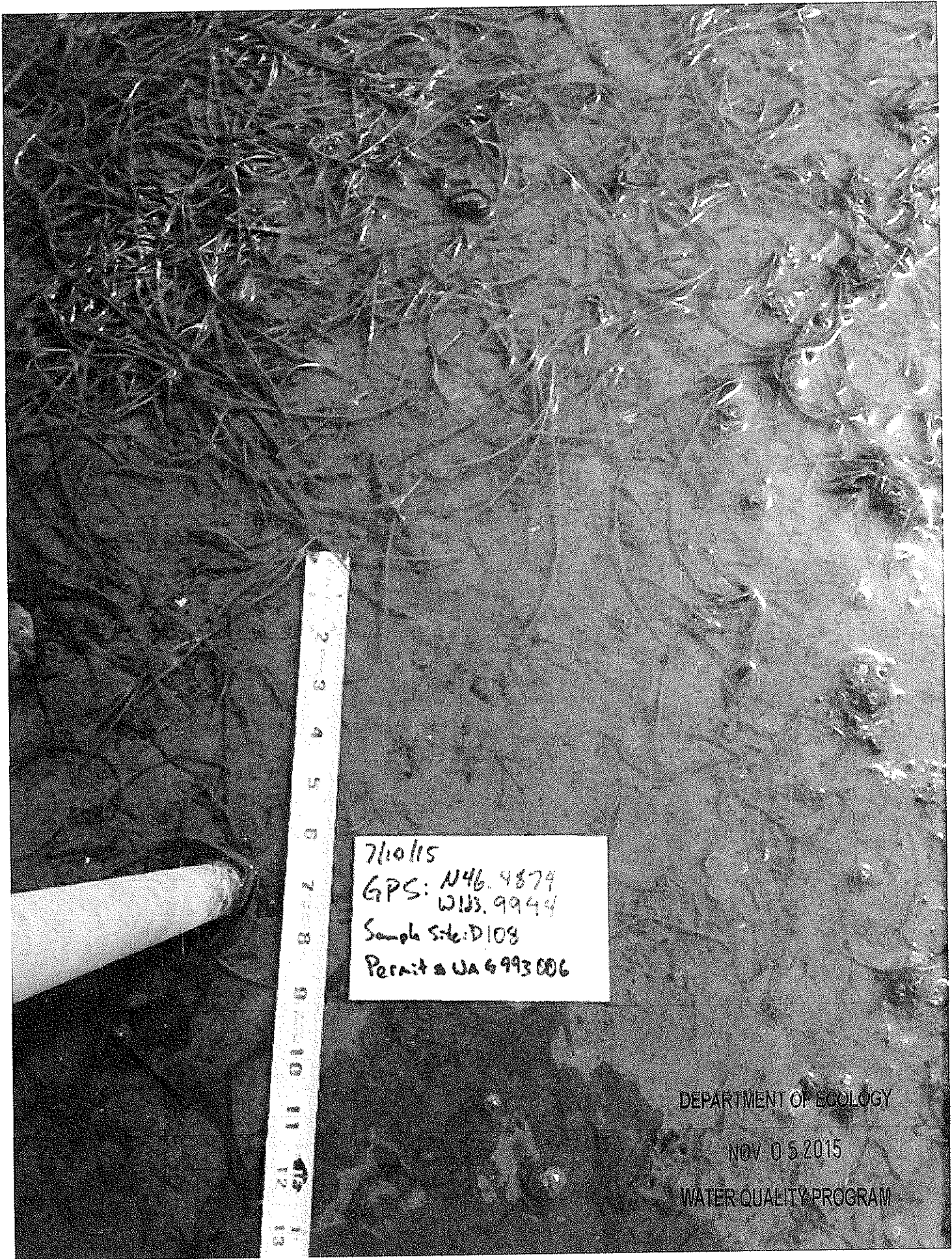


46° 28'

46° 28'

500 ft

Monitoring points



7/10/15
GPS: N46.9874
W123.9944
Sample site: D108
Permit # WA 4993006

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7 inches

Pin # 1



2015
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pin #2

71065
GPS: 49.4845
0103.9443
Bank Site D105
Permit # 018699100

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pin # 3

Unit 7
GPS 21461901
GPS 212399112
Sample site 21102
Date 2016 09 06

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pin # 4

7/10/15
GPS: N46.4809
W122.9913
Sample Site: D-14
Permit # WAG 443006

WAG
NOV 03 2015
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pin #5



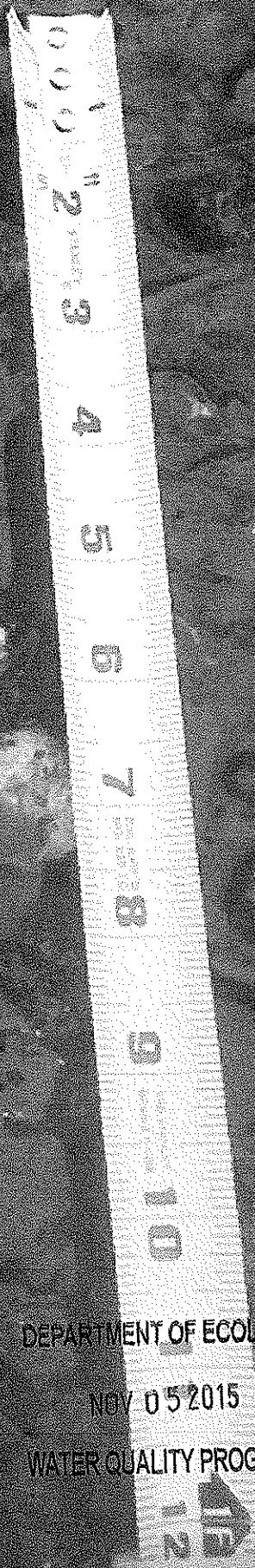
7/10/15
GPS: N46 4782
W133.2942
Sample Site: D72
Permit # WA6 993 006

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9 inches

pin # 6

7/10/15
N96.4766
GPS W123.9942
Sample site: D72
Permit # WA 6993006



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8 inches

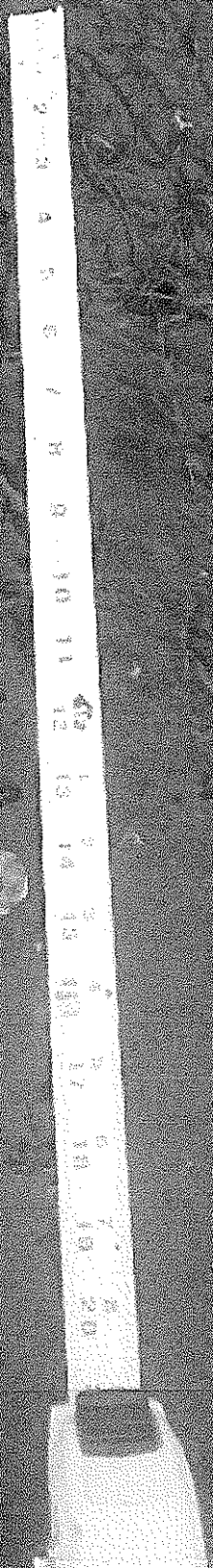
pin #7

7/10/15
GPS: N46.4748
W123.9941
Sample Site: D72
Permit # WA6 993006

no ~~Z~~ostera present (not due to treatment)

pin # 8

7/10/15
GPS N 46.4731
W 123.9991
Sample site: D72
Permit: 2-10699)006



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17 inches

pin #9



7/10/15
GPS: N 46.4107
S 123.5142
Sample site: D103
Permit # UA 6993006

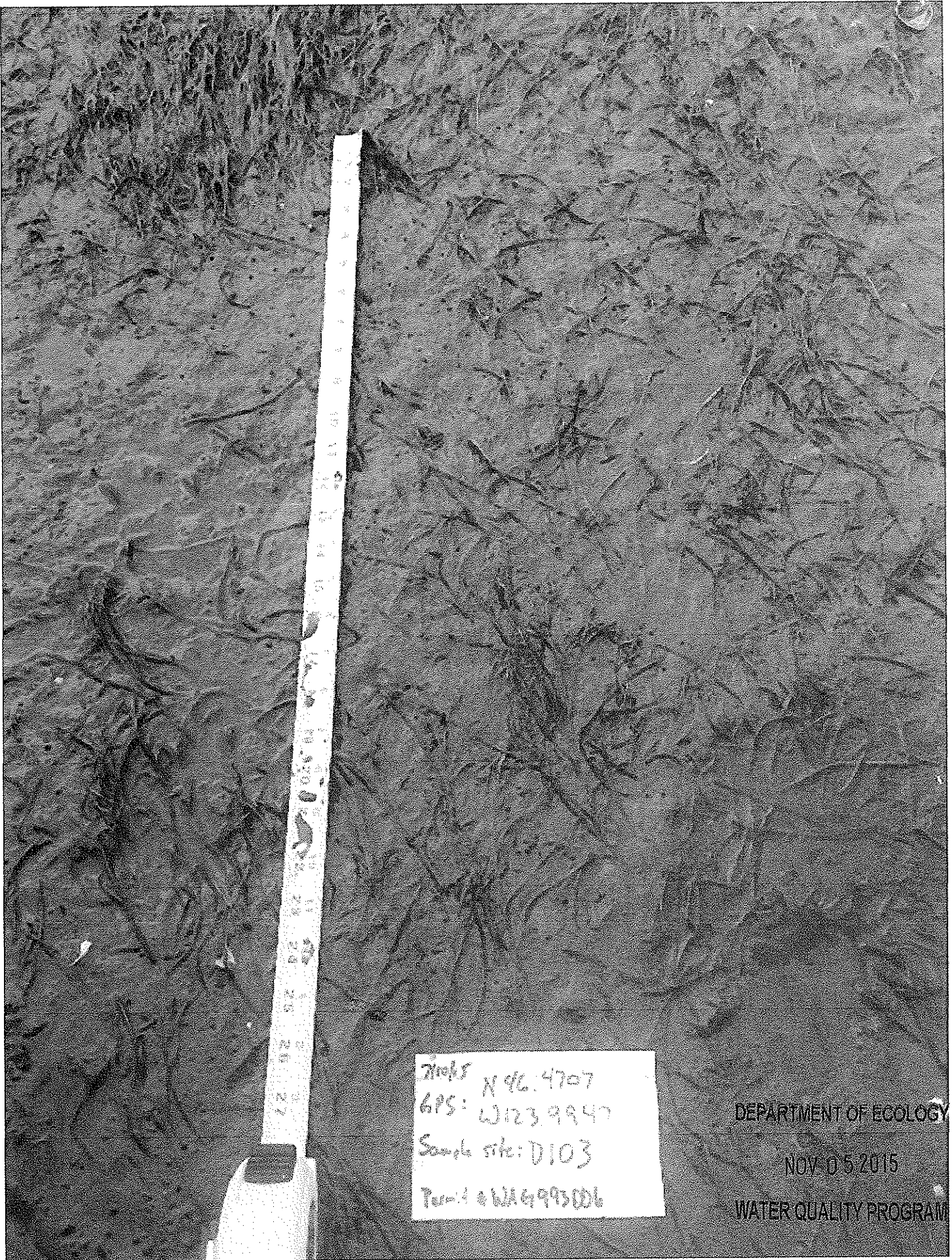
CRE/LINE
PWT SUR 21.200

CRE/LINE
PWT SUR 21.200

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pin # 10



Time: N 96:4707
GPS: W123.9947
Sample site: D103
Tide: 6 W16993006

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27 inches

pin # 11

7/10/15
LPC # 46 4730
WQS 5947
Sample site 777
Permit #UA6993006

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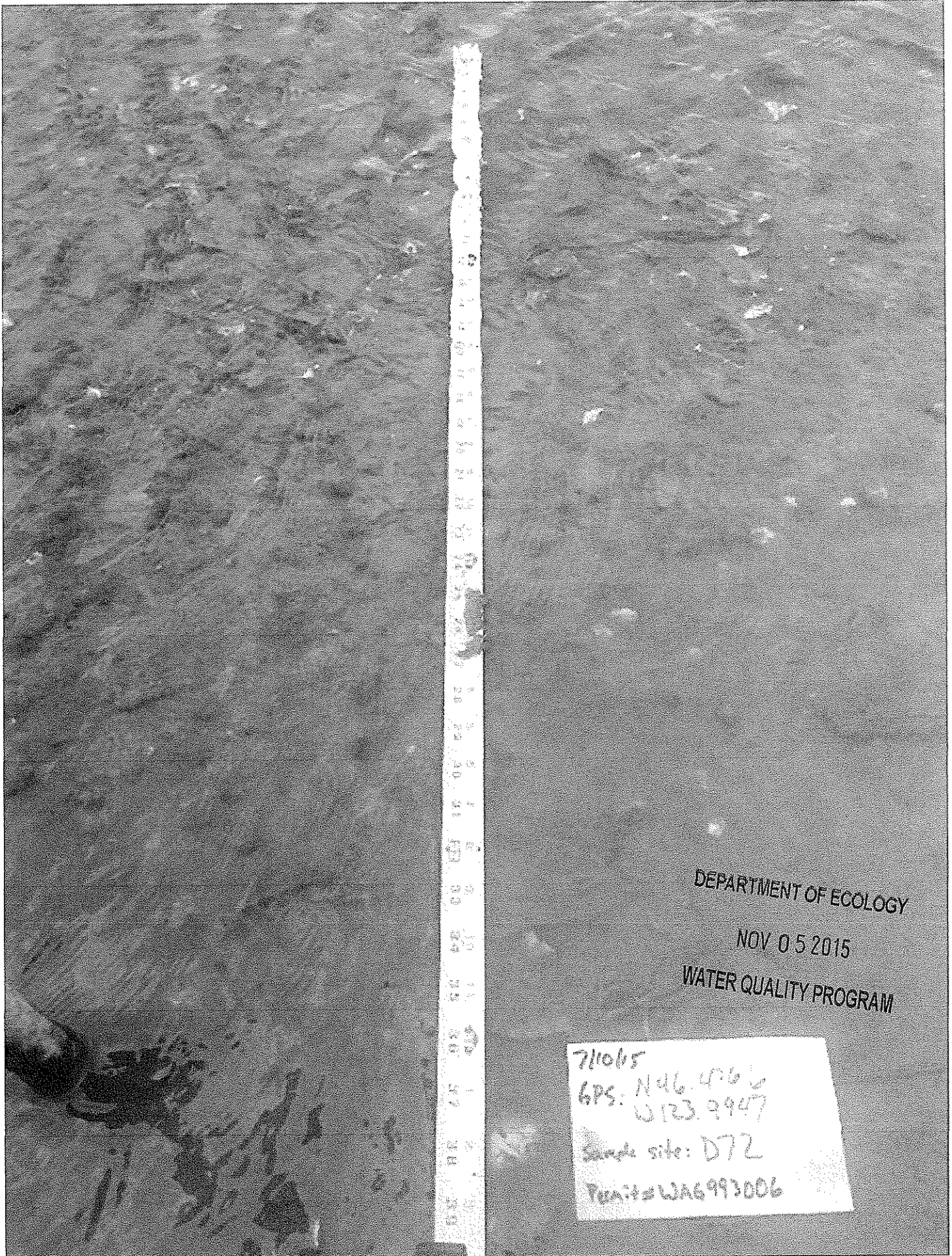
pin #12

2/10/15
GPS: N46.4748
W123.9948
Sample Site: D72
Permit #: WA6993006

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8

pin #13



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711065
GPS: N46.4066
W123.3947
Sample site: D72
Permit # WA6993006

36 inches

pin #14

Thalassiosira
600-100-1000
Solenostoma
Pin # 15

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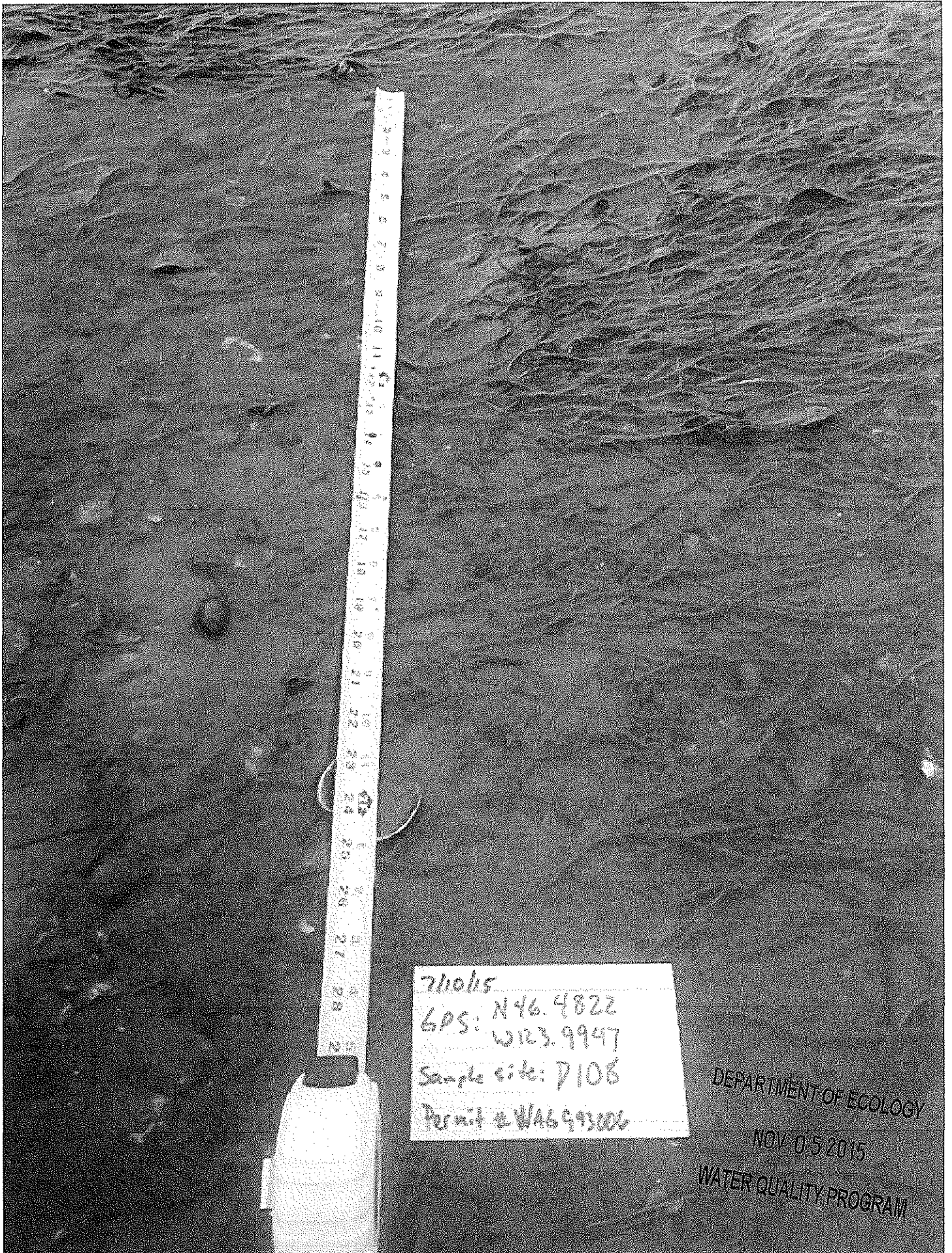
5

pin # 15

7/10/15
GPS: 246 1000
L1000 1000
Sample site D1000
Project # W1000000

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pin #16



71015
GPS: N46.4822
W123.9947
Sample site: 7108
Permit # WA6993006

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29 inches

pin #17

7/10/15
GPS: N46 48'43"
W103 29'47"
Sample Site: D125
Point # WA6993006

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pin #18

7/10/15 46.4861
GPS: 74226
Sample site: 3103
Permit #: LNA 993 006

57130

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8

pin #19

7/10/15
GPS: N46.4874
W123.9947
Sample Site: D108
Permit # WA6 093006

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6

PM #20

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Signature

10/30/15

Date

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