APPENDIX F
COMPLETE DAILY WATER QUALITY REPORTS

ANCHOR ENVIRONMENTAL, L.L.C.

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Water Quality Monitoring Form – Port of Olympia

Activity: Dredging	**Monitoring Personnel: D. Laffoon, D. Berlin**
Date: 01/19/2009	**Monitoring Period: 13:30 – 17:00**
Weather Observations: Foggy, 43F	

Current Direction: To North To South (circle one) **TO NORTH**

Tide: Ebb Flood (circle one) EBB

Station ID:	Time	Water Depth	Turbidity Reading (NTU) Bottom	Mid Depth	Surface	Dissolved Oxygen (mg/L) Bottom	Mid Depth	Surface	Exceed Yes / No
PO-BG—E1	1420	50	2.70	2.64	3.90	7.51	7.37	11.08	NA
PO-150D- E1 *	1454	50	13.7/18	5.53	1.89	7.15	7.96	9.47	YES
PO-100W-E1	1518	45	2.17	1.63	4.83	7.78	7.88	9.01	NO
PO- 150D—E1a	1529	48	19.3	----------	----------	----------	----------	----------	YES
PO-100U-E1	1550	45	2.49	1.81	2.44	7.77	7.76	8.63	NO
PO-150D-E1b	1600	35	11.3	----------	----------	----------	----------	----------	NO
PO-150D-E1c	1610	45	9.22	----------	----------	----------	----------	----------	NO
PO-150U-E1	1617	40	2.12	1.73	1.45	7.38	7.34	7.68	NO
PO-150W-E1	1630	40	2.57	2.37	5.95	7.24	7.63	9.27	NO
PO-150D-E1d	1649	40	7.46	5.09	4.88	7.54	7.57	8.32	NO

Notes: PO-150D-E1 (all monitoring here) unable to take readings at 100 feet due to crane barge at that mark.

150D-E1a, b, c – only monitored area of exceedance.

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:	Time	Feet	Time	Feet	Time	Feet	Time	Feet	
High	11:28a	14.4							
Low	7:12p	1.1							

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Water Quality Sample Form – Port of Olympia

Activity: Dredging with digging bucket	**Monitoring Personnel: D Laffoon, G Nagler**
Date: 1/20/2009	**Monitoring Period: 0800 - 1500**

Weather Observations: Morning fog, 40sF; Sunny afternoon high 40sF

Current Direction: To North (To South) (circle one) Both

Tide: Ebb (Flood) (circle one)

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-E1	0808	48	3.57	2.28	3.12	6.95	7.89	11.32	NA
PO-100U-E1	0835	49	6.88	2.44	4.93	7.08	7.65	10.50	NO
PO-100W-E1	0845	46	2.43	1.80	4.71	7.36	7.71	10.34	NO
PO-100D-E1	0858	43	2.34	2.52	5.18	7.11	7.37	9.36	NO
Next round of monitoring: Tide is ebbing with current to the north									
PO-BG-E2	1312	49	2.67	1.64	4.01	7.04	7.88	9.92	NA
PO-100U-E2	1331	40	3.73	2.13	4.30	6.96	7.99	9.91	NO
PO-100W-E2	1346	45	2.31	1.64	4.71	7.06	7.24	10.30	NO
PO-100D-E2	1400	50	8.47	3.79	5.45	7.08	7.88	10.30	NO
1500: switching barges with no more dredging conducted today.									

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:	Time	Feet	Time	Feet	Time	Feet	Time	Feet	
Low	7:38a	9.1	8:05p	0.6					
High	12.16a	13.7							

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Water Quality Sample Form – Port of Olympia

Activity: Dredging with digging bucket	**Monitoring Personnel: D Laffoon, G Nagler , S Saugen**
Date: 1/21/2009	**Monitoring Period: 0815 - 1800**

Weather Observations: Morning fog, high 30sF; light fog afternoon low 40sF, light wind for north

Current Direction: (To North) (To South) (circle one) high

Tide: (Ebb) Flood (circle one)

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090121-E1	0900	54	2.83	2.16	2.52	6.89	6.40	9.09	NA
PO-100U-090121-E1	0930	38	2.98	2.51	2.91	6.71	6.60	9.85	NO
PO-100W-090121-E1	0945	46	2.31	**14.2**	4.17	6.80	7.04	9.62	YES
PO-100W-090121-E1a	1000	46	---	3.40	---	---	6.94	---	NO
PO-100D-090121-E1	1010	52	8.09	5.79	8.91	6.99	6.72	9.27	NO
PO-100W-090121-E1b	1250	46	2.41	2.85	3.75	6.84	6.77	8.23	NO
Event 2 of monitoring: Tide is flood with low current to the north									
PO-BG-090121-E2	1315	43	2.60	1.85	2.24	6.69	7.25	8.72	NA
PO-100U-090121-E2	1335	48	6.03	3.35	2.06	6.61	6.82	8.29	NO
PO-100W-090121-E2	1358	46	2.34	2.21	2.24	6.63	6.73	8.72	NO
PO-100D-090121-E2	1412	47	4.65	3.54	2.83	6.61	7.20	7.27	NO
Event 3 of monitoring: Flood tide with low current north									
PO-BG-090121-E3	1700	40	2.76	2.14	1.88	6.82	6.89	8.19	NA
PO-100U-090121-E3	1719	47	7.95	2.25	2.45	7.03	6.66	8.28	NO
PO-100W-090121-E3	1731	41	6.25	1.86	2.62	6.98	6.92	8.49	NO
PO-100D-090121-E3	1742	44	9.70	5.45	7.72	7.67	7.01	8.05	NO
Monitoring complete for the day.									

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:	Time	Feet	Time	Feet	Time	Feet	Time	Feet	
High	0419	13.7	1310	13.2					
Low	0920	9.2	2053	0.1					

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Activity: **Dredging with digging bucket**	**Monitoring Personnel: D Laffoon, G Nagler , S Saugen**
Date: 1/22/2009	**Monitoring Period: 0815 - 1400**
Weather Observations: Morning fog, high 30sF; light fog afternoon low 40sF, light wind for north	

Current Direction: (To North) To South (circle one) low

Tide: (Ebb) Flood (circle one)

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090122-E1	0845	52	4.68	3.13	4.12	6.21	5.99	5.98	NA
PO-100U-090122-E1	0910	55	5.20	5.20	3.49	5.96	6.99	7.30	NO
PO-100W-090122-E1	0925	50	2.10	2.56	4.40	5.94	5.81	7.44	NO
PO-100D-090122-E1	0937	54	6.33	2.48	6.16	5.89	5.67	6.76	NO

Second event delayed for barge off-load set-up. In water work complete for the day, off-load to start tomorrow morning.

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:	Time	Feet	Time	Feet	Time	Feet	Time	Feet	
High	0503	14.5	1405	12.9					
Low	1025	9.0	2136	-0.2					

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Activity: **Material Offloading**	**Monitoring Personnel: G Nagler , S Saugen**
Date: 1/23/2009	**Monitoring Period: 0815 – 1730**
Weather Observations: Morning fog, high 30sF; light fog afternoon low 40sF, light wind from north	

Current Direction: To North.; Event 1: ebb tide; Event 2: flood tide

Tide: (Ebb) Flood (circle one)

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090123-E1	11:54	39	3.51	1.42	2.17	6.37	6.50	8.50	N/A
PO-100U-090123-E1	12:05	42	2.29	2.13	2.65	6.30	6.69	8.37	No
PO-100W-090123-E1	12:15	49	2.68	2.04	2.78	6.28	6.57	8.50	No
PO-100D-090123-E1	12:25	46	2.15	2.11	2.00	6.25	6.50	8.40	No
PO-BG-090123-E2	14:35	40	2.19	1.87	3.40	6.21	6.42	8.49	N/A
PO-100U-090123-E2	14:45	45	2.37	1.68	3.87	6.32	6.68	9.20	No
PO-100W-090123-E2	14:55	48	2.17	2.20	3.26	6.37	6.42	8.80	No
PO-100D-090123-E2	15:00	53	2.50	1.95	3.13	6.21	6.84	9.37	No

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:	Time	Feet	Time	Feet	Time	Feet	Time	Feet	
High	05:38	14.9	14:55	12.8					
Low	11:08	8.7	10:16	-0.6					

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Activity: **Material Offloading**	**Monitoring Personnel: G Nagler , S Saugen**
Date: 1/24/2009	**Monitoring Period: 08:00-17:00**

Weather Observations: Morning fog, high 30sF; partly sunny afternoon low 40sF, light wind from north

Current Direction: To North.; Event 1: ebb tide; Event 2: flood tide

Tide: (Ebb) Flood (circle one)			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090124-E1	08:30	42	2.00	1.47	3.39	6.52	7.60	8.37	NA
PO-100U-09012-E1	08:45	44	3.94	2.02	2.92	6.15	7.32	8.60	No
PO-100W-090124-E1	08:55	48	2.38	1.16	3.09	6.39	6.63	8.21	No
PO-100D-090124-E1	09:15	30	2.38	1.47	2.67	6.34	6.20	8.71	No
PO-BG-090124-E2	13:15	40	1.81	1.72	2.22	6.53	6.59	7.70	NA
PO-100U-090124-E2	13:35	49	3.99	1.44	1.98	6.51	6.55	7.81	No
PO-100W-090124-E2	13:47	51	2.37	2.27	2.14	6.46	6.42	7.62	No
PO-100D-090124-E2	13:50	44	2.07	1.19	1.84	6.45	6.56	7.24	No

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:	Time	Feet	Time	Feet	Time	Feet	Time	Feet	
High	06:05	15.1	15:40	12.9					
Low	11:40	8.3	22:52	-0.8					

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Water Quality Sample Form – Port of Olympia

Activity: Dredging	**Monitoring Personnel: G Nagler , S Saugen**
Date: 1/25/2009	**Monitoring Period: 08:00-16:00**

Weather Observations: Morning fog, high 30sF; mostly cloudy afternoon low 40sF, light wind from north

Current Direction: To North.; Event 1: ebb tide; Event 2: flood tide

Tide: (Ebb) Flood (circle one)

Station ID:	Time	Water Depth	Turbidity Reading (NTU) Bottom	Turbidity Reading (NTU) Mid Depth	Turbidity Reading (NTU) Surface	Dissolved Oxygen (mg/L) Bottom	Dissolved Oxygen (mg/L) Mid Depth	Dissolved Oxygen (mg/L) Surface	Exceed Yes / No
PO-BG-090125-E1	855	43	1.95	1.54	2.59	6.21	6.62	7.1	NA
PO-100U-090125-E1	905	40	2.2	1.69	2.45	6.94	6.54	8.4	NO
PO-100W-090125-E1	916	45	2.34	1.68	2.4	6.27	6.7	8.55	NO
PO-100D-090125-E1	930	49	12.6	1.84	5.89	6.17	6.9	8.3	YES
PO-100D-090125-E1b	938	49	4.83	----------	----------	----------	----------	----------	NO
PO-BG-090125-E2	1450	53	2.39	2.02	2.89	6.48	6.62	8.6	NA
PO-100U-090125-E2	1500	46	3.21	3.89	4.17	6.9	7.02	8.08	NO
PO-100W-090125-E2	1520	48	1.76	1.86	3.22	7.05	7.01	8.65	NO
PO-100D-090125-E2	1523	54	3.54	3.14	15.8	6.38	7.25	8.69	YES
PO-100D-090125-E2b	1533	54	----------	----------	7.18	----------	----------	----------	NO

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:	Time	Feet	Time	Feet	Time	Feet	Time	Feet	
High	0627	15.2	1622	13					
Low	1206	7.9	2327	-0.9					

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Activity: **Dredging with digging bucket**	**Monitoring Personnel: D Laffoon, S Hinz**
Date: 1/26/2009	**Monitoring Period: 0930 - 1700**
Weather Observations: Morning clear, high 30sF; clear afternoon low 40sF, light wind from south	

Current Direction: (To North) To South (circle one) very low

Tide: (Ebb) Flood (circle one)

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090126-E1	1030	48	4.65	2.95	3.10	7.61	7.37	11.87	NA
PO-100U-090126-E1	1055	40	12.1	8.71	10.8	7.80	7.10	7.65	NO
PO-100W-090126-E1	1113	48	2.67	2.52	6.10	7.22	7.43	8.01	NO
PO-100D-090126-E1	1126	49	7.53	2.50	5.07	7.15	8.01	8.90	NO
For event 2, Tide in flood stage, current to north									
PO-BG-090126-E2	1506	49	3.70	2.44	1.81	7.82	7.06	9.60	NA
PO-100U-090126-E2	1515	49	20.9	_____	_____	8.49	7.90	7.91	YES
PO-100U-090126-E2a	1540	49	3.33	3.01	8.70	7.09	7.74	9.02	NO
PO-100W-090126-E2	1552	46	9.90	2.29	5.57	7.80	7.20	8.80	NO
PO-100D-090126-E2	1604	55	3.03	3.72	5.18	7.10	8.47	9.16	NO

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:	Time	Feet	Time	Feet	Time	Feet	Time	Feet	
High	0645	15.3	1702	13.0					
Low	1231	7.4	2400	-0.8					

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Activity: Off-loading barges to rail cars	**Monitoring Personnel: D Laffoon, S Hinz**
Date: 1/27/2009	**Monitoring Period: 0800 - 1700**

Weather Observations: Morning snow, 32F, winds 5 knots from south; Afternoon rain, high 30sF,wind 5-15 knots from south

Current Direction: (To North) To South (circle one) Moderate

Tide: (Ebb) Flood (circle one)

Station ID:	Time	Water Depth	Turbidity Reading (NTU) Bottom	Turbidity Reading (NTU) Mid Depth	Turbidity Reading (NTU) Surface	Dissolved Oxygen (mg/L) Bottom	Dissolved Oxygen (mg/L) Mid Depth	Dissolved Oxygen (mg/L) Surface	Exceed Yes / No
PO-BG-090127-E1	0950	36	2.64	2.63	3.19	8.33	9.44	9.50	NA
PO-100U-090127-E1	1045	36	2.55	3.18	2.58	7.75	8.95	8.00	NO
PO-100W-090127-E1	1100	40	3.20	3.20	3.19	9.40	8.70	7.70	NO
PO-100D-090127-E1	1110	48	4.10	4.01	5.10	8.00	8.20	8.30	NO
For event 2, Tide in flood stage, low current to north									
PO-BG-090127-E2	1440	35	3.89	5.10	4.42	7.58	7.46	8.09	NA
PO-100U-090127-E2	1502	52	4.48	4.01	2.24	9.90	8.88	8.92	NO
PO-100W-090127-E2	1509	51	3.41	3.72	1.70	8.95	8.96	9.15	NO
PO-100D-090127-E2	1516	53	5.24	3.00	3.17	9.54	8.75	8.95	NO

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
High	0700	15.5		1744	12.9				
Low	1257	6.7							

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Activity: **Off-loading barges to rail cars / Dredging**	**Monitoring Personnel: D Laffoon, S Hinz**
Date: 1/28/2009	**Monitoring Period: 0800 - 1600**
Weather Observations: Sunny with some clouds, low 40sF, wind from the SW @ 2-5 knots.	

Current Direction: (To North) To South (circle one) Low

Tide: Ebb Flood (circle one)*

Station ID:	Time	Water Depth	Turbidity Reading (NTU) Bottom	Mid Depth	Surface	Dissolved Oxygen (mg/L) Bottom	Mid Depth	Surface	Exceed Yes / No
PO-BG-090128-E1	1325	45	2.70	2.51	2.60	8.26	8.10	8.25	NA
PO-100U-090128-E1	1335	47	3.20	2.90	7.40	8.33	8.13	8.37	NO
PO-100W-090128-E1	1340	48	4.20	2.60	3.10	8.19	8.21	8.29	NO
PO-100D-090128-E1	1350	50	2.60	2.42	2.27	8.24	8.52	8.60	NO

Note – station 100D taken downstream (north) of off-loading barge. *-tide was at slack low tide

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0034	-0.3		1329	5.9				
High	0724	15.7		1827	12.7				

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Activity: **Off-loading barges to rail cars**	**Monitoring Personnel: A Gale, S Hinz, D Lafoon**
Date: 1/29/2009	**Monitoring Period: 0800 - 1610**
Weather Observations: Cloudy, mid-40sF, wind 0-2 knots.	
Current Direction: (To North) To South (circle one)	
Tide: (Ebb) Flood (circle one)*	

Station ID:	Time	Water Depth	Turbidity Reading (NTU) Bottom	Mid Depth	Surface	Dissolved Oxygen (mg/L) Bottom	Mid Depth	Surface	Exceed Yes / No
PO-BG-090128-E1	1140	41	8.5	8.4	9.7	8.27	8.54	8.40	NA
PO-100U-090128-E1	1145	48	9.5	9.2	9.8	8.71	8.39	8.42	NO
PO-100W-090128-E1	1150	50	10.1	8.7	9.1	8.84	9.07	8.74	NO
PO-100D-090128-E1	1154	48	10.1	7.6	9.0	8.67	9.02	9.07	NO

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0108	0.4		1404	4.9				
High	0748	15.9		1915	12.4				

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Water Quality Sample Form – Port of Olympia

Activity: **Off-loading barges to rail cars**	**Monitoring Personnel: A Gale, S Saugen**
Date: 1/30/2009	**Monitoring Period: 0800 - 1600**
Weather Observations: Cloudy, mid-40sF, wind 0-2 knots.	
Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor	

Current Direction: (To North) To South (circle one)

Tide: (Ebb) Flood (circle one)*

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090130-E1	1055	52	1.4	1.8	1.7	9.12	8.84	10.15	NA
PO-100U-090130-E1	1100	50	2.1	2.2	2.7	9.63	9.04	12.19	NO
PO-100W-090130-E1	1105	48	1.9	2.9	4.1	9.65	9.22	11.64	NO
PO-100D-090130-E1	1110	49	2.6	2.1	3.4	10.00	9.48	10.69	NO
Note: North current noticeably higher/stronger.									

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0142	1.5		1443	3.9				
High	0813	15.9		2008	12.0				

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Water Quality Sample Form – Port of Olympia

Activity: Dredging	**Monitoring Personnel: A Gale, S Saugen**
Date: 1/31/2009	**Monitoring Period: 0810 - 1640**

Weather Observations: Prtly cloudy, low-40sF, wind 0-2 knots.

Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor

Current Direction: (To North) To South (circle one)

Tide: (Ebb) Flood (circle one)*

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090130-E1	1045	52	2.4	5.2	4.7	9.33	9.70	9.39	NA
PO-100U-090130-E1	1050	52	6.3	11.1	12.6	9.72	9.52	9.42	NO
PO-100W-090130-E1	1055	43	5.1	9.4	10.1	9.84	9.48	9.89	NO
PO-100D-090130-E1	1100	48	8.4	12.6	13.6	9.67	9.81	10.89	NO

Note:

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0219	2.9		1526	2.9				
High	0841	15.9		2109	11.6				

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Water Quality Sample Form – Port of Olympia

Activity: **Dredging**	**Monitoring Personnel: A Gale, S Hinz**
Date: 02/02/2009	**Monitoring Period: 0810 - 1710**
Weather Observations: Prtly cloudy, upper-40sF, wind 0-2 knots.	
Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor	
Current Direction: (To North) To South (circle one)	

Tide: (Ebb) Flood (circle one)*			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090202-E1	1311	22	1.02	1.50	0.12	8.76	9.50	13.12	NA
PO-100U-090202-E1	1322	43	2.40	2.27	1.04	9.56	9.60	10.90	NO
PO-100W-090202-E1	1325	41	1.74	1.70	4.12	9.91	10.03	11.22	NO
PO-100D-090202-E1	1328	44	2.70	2.15	4.10	9.46	10.68	12.30	NO
Note: None									

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0339	6.3		1708	1.0				
High	0944	15.3		2355	11.4				

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Water Quality Sample Form – Port of Olympia

Activity: **Off-loading barge to rail cars**	**Monitoring Personnel: D Laffoon, S Hinz**
Date: 02/03/2009	**Monitoring Period: 0700 - 1730**

Weather Observations: Mostly clear, upper-40sF, wind 0-2 knots.

Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor

Current Direction: (To North) To South (circle one)

Tide: (Ebb) Flood (circle one)*

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090302-E1	1433	43	1.00	0.25	1.30	9.22	9.53	10.44	NA
PO-100U-090302-E1	1515	46	1.08	0.51	0.70	9.44	9.58	11.25	NO
PO-100W-090302-E1	1520	38	2.30	1.14	3.30	9.46	10.12	10.92	NO
PO-100D-090302-E1	1530	44	3.10	5.50	5.50	9.68	9.68	11.14	NO

Note: Monitoring frequency – Off-loading is at limited, Dredging is at routine as of end of today.

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0434	8.0		1808	0.2				
High	1024	14.9							

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Water Quality Sample Form – Port of Olympia

Activity: **Dredging – D8**	**Monitoring Personnel: D Laffoon, M Weber**
Date: 02/05/2009	**Monitoring Period: 0730 - 1700**
Weather Observations: Overcast, 43F, wind and water are calm.	
Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor for Dissolved Oxygen Hach Turbidimeter for Turbidity	
Current Direction: (To North) To South (circle one)	

Tide: (Ebb) Flood (circle one)*			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090205-E1	1415	48	3.19	0.88	1.50	8.87	8.81	9.73	NA
PO-100U-090205-E1	1435	43	1.95	0.85	1.48	8.97	9.03	9.28	NO
PO-100W-090205-E1	1450	42	1.44	0.76	3.95	9.15	9.21	11.21	NO
PO-100D-090205E1	1500	45	3.24	2.77	4.79	9.11	9.02	10.47	NO
Note: Monitoring frequency – Off-loading is at limited, Dredging is at routine.									

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
High	0334	13.3		1224	14.3				
Low	0750	9.7		2015	-1.4				

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Activity: **Dredging – D9**	**Monitoring Personnel: D Laffoon, M Weber**
Date: 02/06/2009	**Monitoring Period: 0730 - 1700**

Weather Observations: Overcast, drizzle, 43F, wind from NW 0-3 knots and water is 0.1-0.3 ft.

Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor for Dissolved Oxygen
Hach Turbidimeter for Turbidity

Current Direction: To North (To South) (circle one)

Tide: Ebb (Flood) (circle one)*

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG(N)-090206-E1	1025	44	1.45	0.94	1.76	8.23	8.36	8.39	NA
PO-100U-090206-E1	1040	49	1.52	0.77	1.87	8.19	8.11	8.87	NO
PO-100W-090206-E1	1125	45	1.94	1.66	4.36	8.39	8.46	8.98	NO
PO-100D-090206-E1	1135	52	3.98	9.14	6.09	8.37	8.69	9.06	NO

Note: Monitoring frequency – Off-loading is at limited, Dredging is at routine.

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
High	0425	14.4		1335	14.3				
Low	0916	9.3		2113	-2.1				

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Water Quality Sample Form – Port of Olympia

Activity: **Dredging**	**Monitoring Personnel: A Gale, S Hinz**
Date: 02/10/2009	**Monitoring Period: 0740 - 1800**
Weather Observations: Snow flurries, upper-30sF, wind 0-2 knots.	
Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor	

Current Direction: (To North) To South (circle one)

Tide: (Ebb) Flood (circle one)*

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090210-E1	1145	43	1.20	2.30	0.54	9.40	9.02	8.90	NA
PO-100U-090210-E1	1158	44	2.94	4.04	3.7	9.69	9.60	10.85	NO
PO-100W-090210-E1	1205	42	3.30	2.43	2.04	9.06	9.40	11.86	NO
PO-100D-090210-E1	1208	44	9.50	11.50	9.41	8.87	8.84	10.05	NO
Note: None									

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low				1233	5.1				
High	0634	16.3		1741	14.4				

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Water Quality Sample Form – Port of Olympia

Activity: **Dredging**	**Monitoring Personnel: A Gale, S Hinz**
Date: 02/11/2009	**Monitoring Period: 0740 - 1540**
Weather Observations: Sunny, upper-30sF, wind 0-2 knots.	
Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor	
Current Direction: (To North) To South (circle one)	

Tide: (Ebb) Flood (circle one)*			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090211-E1	1143	42	2.70	1.15	1.40	9.52	10.87	10.97	NA
PO-100U-090211-E1	1145	44	9.50	5.10	7.90	9.67	10.04	11.10	NO
PO-100W-090211-E1	1151	38	5.50	5.12	3.10	9.49	10.73	11.92	NO
PO-100D-090211-E1	1200	45	6.45	8.78	7.24	9.40	8.99	13.3	NO
Note: None									

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0024	-0.9		1317	3.9				
High	0703	16.5		1838	13.9				

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Water Quality Sample Form – Port of Olympia

Activity: Dredging	**Monitoring Personnel: MWilson, SHinz, WGerrish**
Date: 02/14/2009	**Monitoring Period: 0730 - 1700**

Weather Observations: Overcast, ~45 F, calm winds, calm seas

Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor for Dissolved Oxygen and Turbidity

Current Direction: (To North) To South (circle one)

Tide: (Ebb) Flood (circle one)*

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-E1	1140	43 ft	1.08	0.41	1.70	9.40	9.74	11.19	NA
PO-100U-E1	1154	43 ft	3.10	3.70	2.20	9.17	9.89	12.60	NO
PO-100W-E1	1157	38 ft	1.65	3.90	4.20	8.83	9.30	11.70	NO
PO-100D-E1	1201	43 ft	7.60	7.10	7.27	9.09	9.52	10.75	NO
Note: Monitoring frequency – Off-loading is at limited, Dredging is at routine.									

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
High	0835	15.7		2144	12.1				
Low	0230	4.0		1530	1.6				

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Water Quality Sample Form – Port of Olympia

Activity: Dredging	**Monitoring Personnel: D Laffoon, W Gerrish**
Date: 02/16/2009	**Monitoring Period: 0740 - 1745**

Weather Observations: Partly Sunny, 40sF, wind 0-5 knots.

Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor for DO. Hach turbidimeter for turbidity

Current Direction: (To North) To South (circle one)

Tide: (Ebb) Flood (circle one)*

Station ID:	Time	Water Depth	Turbidity Reading (NTU) Bottom	Mid Depth	Surface	Dissolved Oxygen (mg/L) Bottom	Mid Depth	Surface	Exceed Yes / No
PO-BG-090216-E1	1033	42	1.74	1.70	1.52	8.64	8.53	8.62	NA
PO-100U-090216-E1	1055	48	7.28	1.08	1.90	8.37	8.73	9.38	NO
PO-100W-090216-E1	1120	44	2.08	1.18	0.86	8.81	8.74	9.21	NO
PO-100D-090216-E1	1134	47	4.90	3.25	7.36	8.32	8.51	9.11	NO

Notes: Routine monitoring

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0409	7.4		1712	1.3				
High	0947	14.0							

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Water Quality Sample Form – Port of Olympia

Activity: **Dredging-D14**	**Monitoring Personnel: D Laffoon, S Hinz**
Date: 02/17/2009	**Monitoring Period: 0730 - 1530**
Weather Observations: Overcast, 40sF, wind from the SW @ 3-4 knots.	
Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor for DO and turbidity.	
Current Direction: (To North) To South (circle one)	

Tide: (Ebb) Flood (circle one)*			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090217-E1	1130	43	2.48	1.80	0.90	8.67	8.62	9.16	NA
PO-100U-090217-E1	1138	40	5.80	7..70	1.21	9.30	9.08	9.64	NO
PO-100W-090217-E1	1144	43	5.22	2.88	1.20	8.91	9.13	9.16	NO
PO-100D-090217-E1	1149	45	6.88	7.65	8.80	8.36	8.68	9.10	NO
Notes: Routine monitoring. Completed dredging at 1530, set up off-load after.									

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
High	0055	11.9		1033	13.1				
Low	0528	8.6		1811	1.3				

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Water Quality Sample Form – Port of Olympia

Activity: **Dredging**	**Monitoring Personnel: A Gale, S Hinz**
Date: 02/19/2009	**Monitoring Period: 0740 - 1540**
Weather Observations: Sunny, low-50sF, wind 0-2 knots.	
Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor	
Current Direction: (To North) To South (circle one)	

Tide: (Ebb) Flood (circle one)*			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090219-E1	1414	43	2.60	1.80	2.70	8.83	9.35	10.25	NA
PO-100U-090219-E1	1420	41	6.41	7.70	4.92	8.89	9.00	9.56	NO
PO-100W-090219-E1	1425	41	4.10	3.90	3.20	8.96	9.60	10.80	NO
PO-100D-090219-E1	1430	44	4.70	5.90	5.50	8.65	9.34	9.73	NO
Note: None									

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0919	8.7		2015	1.0				
High	0346	13.4		1242	11.9				

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Activity: **Clean-up Dredging**	**Monitoring Personnel: D Laffoon, S Hinz**
Date: 02/24/2009	**Monitoring Period: 0700 - 1550**

Weather Observations: Rain, 40sF, wind from the SW @ 5-15 knots.

Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor for DO and turbidity.

Current Direction: (To North) To South (circle one)

Tide: Ebb (Flood) (circle one)*

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090224-E1	1430	43	2.4	1.7	0.9	8.23	7.90	8.31	NA
PO-100U-090224-E1	1442	43	3.0	1.8	1.8	8.15	8.18	8.20	NO
PO-100W-090224-E1	1450	38	2.4	3.4	2.1	8.71	8.99	8.80	NO
PO-100D-090217-E1	1503	41	4.4	5.6	8.91	8.91	8.71	8.66	NO

Notes: Routine monitoring. Completed final clean-up dredging at 1550, set up off-load after.

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
High	0552	14.8		1700	13.0				
Low	1153	5.5		2337	0.6				

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Water Quality Sample Form – Port of Olympia

Activity: **Barge clean-up and decon**	**Monitoring Personnel: MWilson, SHinz**
Date: 2/25/09	**Monitoring Period: 0800-1700**
Weather Observations: Overcast, sporadic rain, stiff breeze from SW, wave height 0.1-0.3 ft	
Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor for Dissolved Oxygen and Turbidity	

Current Direction: (To North) To South (circle one)

Tide: Ebb (Flood) (circle one)*

Station ID:	Time	Water Depth	Turbidity Reading (NTU) Bottom	Mid Depth	Surface	Dissolved Oxygen (mg/L) Bottom	Mid Depth	Surface	Exceed Yes / No
PO-BG-E1	1545	44 ft	1.3	2.7	1.5	8.38	8.65	9.80	NA
PO-100U-E1	1550	44 ft	3.8	3.9	0.7	8.20	8.18	8.80	NO
PO-100W-E1	1555	38 ft	4.6	6.4	1.7	8.52	8.56	9.68	NO
PO-100D-E1	1600	38 ft	7.5	6.9	8.9	8.47	8.47	8.94	NO

Note: Monitoring frequency – Off-loading is at limited, Dredging and barge decon is at routine.

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
High	6:10	15.0		17:43	13.1				
Low	12:20	4.5							

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Water Quality Sample Form – Port of Olympia

Activity: **Place Sand Cover**	**Monitoring Personnel: A Gale, S Hinz**
Date: 02/27/2009	**Monitoring Period: 0740 - 1700**
Weather Observations: Sunny, mid-40sF, wind 2-4 knots.	
Monitoring Equipment: Hydrolab - Minisond 4A with Surveyor	
Current Direction: (To North) To South (circle one)	
Tide: (Ebb) Flood (circle one)*	

Station ID:	Time	Water Depth	Turbidity Reading (NTU) Bottom	Mid Depth	Surface	Dissolved Oxygen (mg/L) Bottom	Mid Depth	Surface	Exceed Yes / No
PO-BG-090227-E1	1020	43	1.6	2.7	2.1	8.14	8.58	10.73	NA
PO-100U-090227-E1	1025	43	3.7	4.4	2.6	8.32	8.72	9.94	NO
PO-100W-090227-E1	1028	38	4.8	5.1	1.2	8.37	8.71	10.33	NO
PO-100D-090227-E1	1032	43	4.4	7.0	6.1	8.15	8.19	10.65	NO
PO-BG-090227-E2	1115	24	1.4	2.1	1.2	7.95	8.34	9.38	NA
PO-100U-090227-E2	1119	43	3.7	6.8	3.2	8.06	8.34	8.75	NO
PO-100W-090227-E2	1122	38	1.8	1.9	2.6	8.17	8.56	9.50	NO
PO-100D-090227-E2	1124	43	7.7	5.2	5.7	8.15	8.34	8.98	NO
PO-BG-090227-E3	1505	34	1.9	1.8	0.9	8.85	9.13	10.33	NA
PO-100U-090227-E3	1509	43	7.9	8.2	6.3	8.41	8.76	9.82	NO
PO-100W-090227-E3	1514	38	4.9	5.3	4.4	8.36	8.55	9.75	NO
PO-100D-090227-E3	1519	43	5.6	5.1	5.6	8.29	8.40	8.99	NO

Note: E3 WQ monitoring occurred during flood tide and current direction towards the south.

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0045	2.2		1326	2.3				
High	0631	15.4		1916	13.2				

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Water Quality Sample Form – Port of Olympia

Activity: **Sand Placement**	**Monitoring Personnel: D Laffoon, S Hinz, D Dickinson**
Date: 03/02/2009	**Monitoring Period: 0730 - 1700**

Weather Observations: Cloudy with Rain, 40sF, wind from the SW @ 5-15 knots. Wave height 0.6-0.9 ft.

Monitoring Equipment: Hydrolab – MS-5 with Surveyor for DO and turbidity. Used Hach Turbidimeter with Van Dorn for back-up readings

Current Direction: (To North) To South (circle one)

Tide: (Ebb) Flood) (circle one)*			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090302-E1	1147	42	2.6	2.8	1.6	7.86	7.97	8.24	NA
Note: Round terminated – sand placement stopped at 1140. Next round, tide at low with no current									
PO-BG 090302-E2	1408	39	1.15	1.05	1.78	8.24	8.01	8.38	NA
PO-100U-090302-E2	1432	38	8.1	11.87	16.71	8.56	8.38	9.57	**YES**
PO-100W-090302-E2	1448	34	1.13	1.4	2.8	7.95	7.93	7.96	NO
PO-100D-090302-E2	1503	41	1.14	1.1	1.4	7.75	7.82	7.80	NO
PO-100U-090302-E2a	1508	38	18.6	22.1	17.1	7.82	7.67	7.84	**YES**
Note: Above was the recheck at upcurrent (100 ft south of work, actual no current) – contacted JoAnn and Dan									
PO-150U-090302-E2a	1515	39	1.4	10.2	10.7	7.86	7.80	7.92	NO
Note: Work slowed then stopped. Waited 15-30 minutes then performed recheck									
PO-100U-090302-E2b	1601	38	17.3	13.4	4.6	8.95	7.91	7.81	**YES**
PO -150U-090302-E2b	1604	39	9.3	5.8	3.2	7.93	7.87	7.81	NO
Note: Sand placement restarted at 1615 at slower pace									
Po-100U-090302-E2c	1625	39	3.6	8.9	3.1	7.73	7.88	8.00	NO

Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.

Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U)
BG = Background = 1,000 feet upcurrent of dredging activity

Tidal Elevations:

	Time	Feet		Time	Feet				
Low	0242	6.2		1535	0.0				
High	0820	15.0		2217	12.5				

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Water Quality Sample Form – Port of Olympia

Activity: **Sand Placement**	**Monitoring Personnel: D Laffoon, D Dickinson**
Date: 03/03/2009	**Monitoring Period: 0700 - 1000**
Weather Observations: Partly cloudy, 40sF, calm water & wind	
Monitoring Equipment: Hydrolab – MS-5 with Surveyor for DO and turbidity. Used Hach turbimeter with Van Horn as back-up	
Current Direction: To North To South (circle one) **At high tide, no current**	
Tide: Ebb Flood (circle one)*	

			Turbidity Reading (NTU)			Dissolved Oxygen (mg/L)			Exceed
Station ID:	Time	Water Depth	Bottom	Mid Depth	Surface	Bottom	Mid Depth	Surface	Yes / No
PO-BG-090303-E1	0840	54	1.27	1.14	6.28	7.68	7.79	8.27	NA
PO-100U-090303-E1	0855	54	1.87	2.38	4.3	7.75	7.89	8.24	NO
PO-100W-090303-E1	0908	48	1.67	1.5	1.76	7.66	7.94	8.32	NO
PO-100D-090303-E1	0915	55	1.5	8.5	3.15	7.65	7.83	8.15	NO
Notes: Sand placement stopped (completed) at 0830.									
Water Quality Standard: Turbidity shall be < 10.0 NTU above background when background is < 50.0 NTU and less than 20% over background when background is > 50.0 NTU.									
Stations: 100& 150 (D,W,U) = 100 & 150 foot stations at downcurrent (D), West (W), and Upcurrent (U) BG = Background = 1,000 feet upcurrent of dredging activity									
Tidal Elevations:									

	Time	Feet		Time	Feet				
Low	0331	7.6		1631	-0.3				
High	0858	14.5		2347	12.4				

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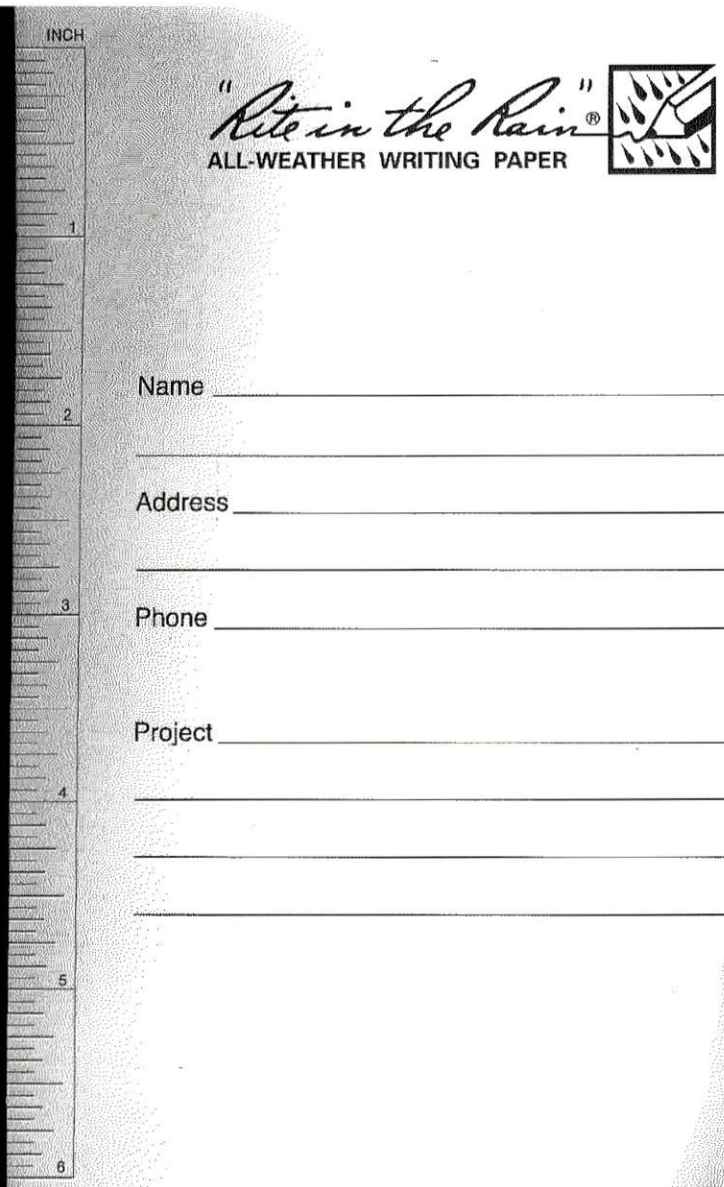
No. 351

WATER MONITORING

Port of Olympia

Book 1 of



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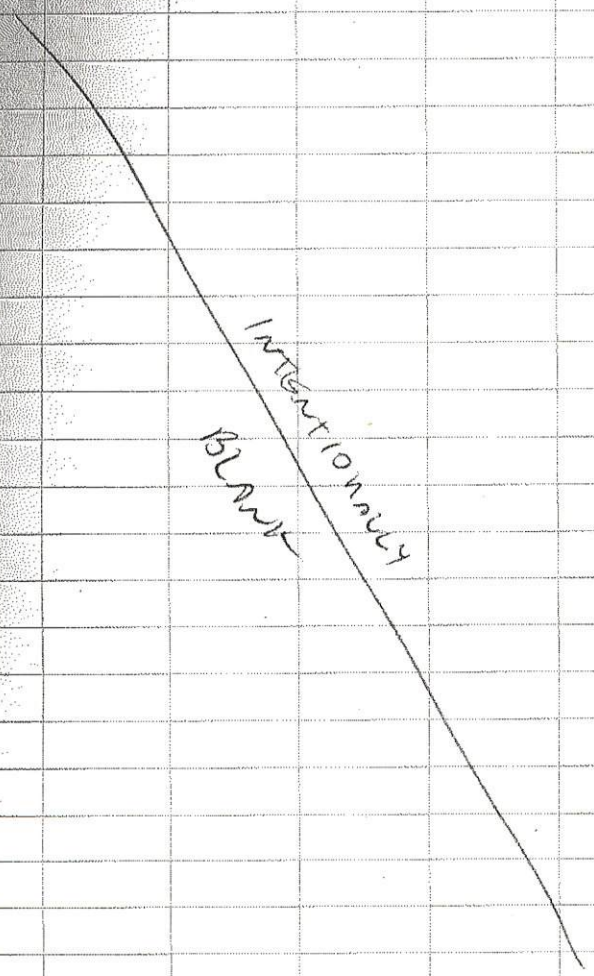

0800 – Monitoring / Port of Oly / Ecology / Dredgers had meeting @ breakroom
1130 – Met State w/ Gravity at dock
1300 – On site, no dredging going on calibrate instruments
1422 – Started dredging – 1st bucket
1420 – Performed background monitoring
1454 – Took the 150 ft down current sample, could not take 100 ft reading due to crane barge in the way. Had exceedance, took another backup later
1518 – At 100 ft west – OK
1529 – Back at 150-D, exceedance, informed Port of Oly / dredging, slowed bucket
1550 – At 100 ft upcurrent – OK
1600 – Recheck exceedance 150D – now OK
1610 – Back up check of 150D – OK
1617 – At 150 ft upcurrent – OK
1630 – At 150 ft west – OK
1649 – Final check of 150-D – OK
1710 – At dock – unload boat

intentionally BLANK

1/20/2009

0730 Boarded Gravity vessel – D. LAFFOON, G. NAGLAR, & STEVE

0835 – At background E1 – OK

0835 – At 100U-E1 – OK

0845 – At 100W-E1 – OK

0858 – At 150D-E1 – OK, dredging barge in way, could not get closer

0910 – Disembark vessel until next round

1120 – Call to take VOA lab samples of sheen by pier

1130 – Took lab samples, gave to JoAnn

1140 – Break for lunch

late entry – 07:45 Calibrated turbidimeter + YSI

13:00 – CWQ crew boarded Gravity vessel, motored to Site

13:05 Arrived on Site. Dredging active

1312 – At background E2 – OK

1331 – At 100U-E2 – OK

1346 – At 100W-E2 – OK

1400 – At 100D-E2 – OK

1505 – Sediment barge full – stopped dredging for day – will switch barges.

1/21/09

08:30 Steve S., Gabe N, Doug L. arrived at Marina
08:40 Boarded vessel, motored to site
08:45 Arrived on site, performed calibration
09:00 At BG location
09:30 At 100W location
09:45 At 100W location
09:50 Exceedance (12 NTU over background recorded at middle depth
09:51 Contacted Mike@PPM to slow dredge cycle
09:52 Dredging paused
09:54 Doug L contacted Joanne w/ POD informed her of exceedance
10:10 Confirmed reading at middle depth of 100W location. Turbidity below trigger value, moved to 100D location

10:10 At 100D location
10:19 Completed first round of monitoring. No confirmed exceedances detected. Motored to Marina.
11:00 Met w/ Ecology + POD to discuss WQMP + communication protocol
12:15 Left Marina, motored to site.
12:30 Arrived on site, no active dredging
12:40 Dredging begin
12:50 At 100W to perform 2nd confirmation of BMP effectiveness.
13:01 Motored to SW corner for visual observation
13:07 Motored to BG location
13:08 At BG site
13:25 Dredging paused.
13:26 Dredging resumed

13:35	At 100V location
13:58	At 100N location
14:12	At 100D location
15:05	Motored to Marina, Gabe N. left for Portland. Performed minor repairs to boat. (throttle)
1650	In boat, motored to site
1700	At BG site, event 3
1719	At 100H
1731	At 100W
1742	At 100D
1800	BACK AT SWANTOWN MARINA AND DONE FOR THE DAY

1.22.09 STACKEN/LAFFOON

0805 - WET AT MARINA AND MOTORED OUT TO BACKGROUND LOCATION

0845 - AT PO-BG-E1
STILL VERY FOGGY AND COLD WITH LIMITED VISIBILITY.

0910 AT PO-100H-E1

0925 AT PO-100W-E1

0937 @ PO-100D-E1
tide ebbing - flow (current north)
DREDGERS PLAN TO STOP DREDGING AROUND NOON AND BEGIN OFF LOADING THE BARGES

0950 E1 COMPLETE WITH NO EXCEEDENCES, HEADED BACK TO MARINA

0830 - late entry - calibrated meters - OK

1147 - PPM STOPPED DREDGING @ APX 1015 AND BEGAN SETTING UP THE EXCAVATOR FOR OFF-LOADING THE BARGES. THE SITE PAD IS YET TO BE SETUP SO IT MIGHT BE A WHILE BEFORE ACTIVITY RESUMES

1410 – Set-up for off-load will take the rest of the day. Marty & Mike confirmed no additional monitoring needed until morning. At Marina to stow gear

1/23/09

0?:20 Gabe N. & Steve S. boarded towing vessel Motored to Site.
Off loading in progress for 1 hour
0?:34 Arrived on Site
09:54 Hydrolab calibration unsuccessful for turb. continued using Hach 2100P turbidometer
1154 At PO-BG-E?
1205 At PO-100D-E1
1215 At PO-100W-E1
12:25 At PO-100U-E1
12:26 No off loading activity – lunch break

1245 Off loading resumed
1435 At PO-BG-E2
1445 At PO-100D-E2
1455 At PO-100W-E2
1500 At PO-100D-E2
15:05 Motored to Martha

1/24/09

0800 Gabe N + Steve S. board Gravity vessel + motor to site
08:15 Arrive on site. Offloading in progress
08:30 At BG location
0845 At 100 U location
0855 At 100 W location
0915 At 100 D location
0925 First event complete. No exceedances
1315 At BG location
1335 At 100U location
1347 At 100W location
1350 At 100D location
14:00 Second monitoring event complete. No exceedances
14:10 Motored to Martha

1/25/09

08:15 Steve S, + Gabe N boarded Gravity vessel, motored to site
08.30 Arrived on Site. Dredging active.
08.55 At BG Station
0905 At 100D location
0916 At 100W location
0930 At 100U location
Bottom depth = 12.6 NTU > background.
0938 Confirmed bottom depth. Turb = 4.6 NTU < BG Exceedance was not confirmed.
0945 Motored to Marina
1438 Motored to Site in response to fabric spill
14.50 At BG location
15:00 At 100D location
15:20 At 100W location

15:21 Sediment observed escaping filter fabric from SW corner. Marty (PPM) notified of leak.
15:22 Plywood inserted into bulkrail + fabric filter.
1523 At 100D location.
Turb @ top depth = 15.8, 12 over BG.
15:33 Re took top depth. turb = 7.18. No leaking observed from SW corner
late entry — 1530 —
Joanne (PoO) notified of leak.
15:40 Joanne (PoO) notified of unconfirmed exceedance likely due to SW leak now stopped.
15:41 Motored to Marina.
15:45 Dredging complete for day.

1/26/09

9:30 D Laffoon and shinz @ marina, calibrated meters
10:30 monitoring conducted @ Ambient
10:40 moved to upstream location
10:55 monitoring @ PO-100u-E1 no exceedance
11:15 monitoring @ PO-100W-E1 " "
11:26 monitoring @ PO-100D-E1 " "
11:45 monitoring completed with no exceedances. No offloading of material being conducted. At Ambient Station a cargo vessel the Global Dream blocked station so monitoring was conducted 200 m South
12:15 Returned to MARINA, break for lunch and go to breakroom at stand-by status — on routine schedule.
15:00 monitoring conducted @ Ambient
~~3:00~~
15:15 monitoring @ PO-100u-E2 exceedance of 20.9 ntu. Talked w/ POC Jenna and re-sampled
15:42 monitoring @ PO-100u-E2 no exceedance
15:50 monitoring @ PO-100W
16:04 monitoring @ PO-100D
16:30 Returned to MARINA

1/27/08

09:20 D. LAFFOON & S. Hinz @ MARINA, calibrated meters
09:50 At BO-B6-E1, tide ebbing current high to north, wind from south @ 5 knots, 32° snow
1010 At PO-100U-E1, waiting to off-load barge
1020 - Re commencing barge offload
~~10?? — Took data @ [illegible]~~
10:45 - monitoring @ PO-100u-E1
~~11:00 - monitoring @ PO-100W-E1~~
~~11:15 - monitoring @ PO-100D-E1~~
14:44 - monitoring @ BO-B6-E2, tide flood with current direction to north.
Late Entry: Waited for rail cars from 11:15 to 13:30 for offload.
1502 - monitoring PO-100U-E2
1509 — monitoring PO-100W-E2
1516 — monitoring PO-100D-E2
1530 — Returned to MARINA for the day

1/28/09

0900 – D. LAFFOON & S. SAUGEN MEET AT PORT OF OLY OFFICE.
1030 – TRAVELED TO MARINA, WEATHER IS PARTLY CLOUDY, WIND FROM WEST 3-5 knots, mid 30° F
1100 – Removed boat from water to refuel
1300 – Back at MARINA, placed boat in water with full tank of fuel
1320 – At site – noted that dredging and off-loading operations are ongoing, mostly sunny, 40° F 5 knot wind from SW
1325 – At PO-BG-E1 – OK
1335 – At PO-100U-E1 – OK
1340 – At PO-100W-E1 – OK
1350 – At PO-100D-E1 – OK, note – 100D taken downstream of off-loading barge
1420 – At MARINA, unloaded gear & travel to Port office for on-call.

1/29/09

0900 – D LAFFOON, S. SAUGEN & A GALE MEET AT PORT OF OLY OFFICE
1020 – 1 hr period no-off loading due Ecology concerns
1100 – TRAVELED TO MARINA – CLOUDY, LOW 40°s, CALM

AMG

1140 – PO-BG-E1
PO-100U-E1 – OK
PO-100W-E1 – OK
PO-100D-E1 – OK
WORK INCLUDED OFFLOADING – NO DREDGING OBSERVED
1700 – Relocating Dredge BARGE.

1/30/2009
0830 – Agale, S. Saugen meet at port office
0845 – offloading materials to rail cars & mobilizing offsite

1000 : Drive from port offices to Marina.

1140 PO-BG
PO - 100 U - OK
PO - 100 W - OK
PO - 100 N - OK
* Noticably stron N. current.

1230 Return to Port office

1/31

0815 ARRIVE AT MARINA
problems with offloading gear, Proceeded to commence dredging until offload gear fixed.
Mostly SUNNY, COOL 30sF

1045 MONITORING AT PO-BG
PO - 100 UP → OK
PO - 100 W → OK
PO - 100 D → OK

1230 Return to PO office
1640 Dredging completed

02/02/2009
07:45 arrive at port office.
* OFFICE ROOM NOT AVAIL.
+ ASKED TO UTILIZE KITCHEN AS OFFICE. NO INTERNET.

1040 - Drive to marina
1110 - ON boat, transfering barges — Not dredging
1140 OIL BOOM observed.

2/ 2009

0800 – Arrived at Port office (breakroom) upstairs not available today – no internet. Off loading of barge is ongoing.

1000 – D. LAFFOON ATTENDED WEEKLY ACTION MEETING TO DISCUSS GOING INTO LIMITED MONITORING

1300 – LAFFOON & HINZ MEET AT MARINA

1320 – on-site no off-loading – no other work

1433 – At PO-BG-E1, monitored – OK

1505 – Started off-loading

1515 – Took monitoring at PO-100S-E1 OK

1520 – At PO-100W-E1 → OK

1530 At PO-100D-E1 → OK

1540 Return to MARINA, returned to Port Aransas office

1600 Discussed with JoAnn – project is officially at:
Off-loading – limited (on-call)
Dredging – routine (daily) throughout project

1/08

0730 – On-call (stand-by) at Port Aransas office, (LAFFOON, HINZ). off-loading of barge to rail car on-going

0900 – stop loading Rail-cars and moved crane barge for surveying completed dredging

1500 – survey complete – continue with loading of rail cars – on limited monitoring, on stand-by.

2/5/09

0730 — On stand-by, Doug LAFFOON, Mark WEBER, at Port pier office
0830 — Commenced dredging — WQ monitoring is on Routine (daily)
1330 — Meet with Mark at MARINA to perform daily monitoring — calibrated inst. — Hydrolab OK for DO but turbidity reads zero in water, using vanchorn & turbidimeter (HACH) for turbidity
1415 — At PO-BG-090205-E1 → OK
1435 — At PO-100U-090205-E1 → OK
1450 — At PO-100W-090205-E1 → OK
1500 — At PO 100D-090205-E1 → OK
1540 — Returned to MARINA — no exceedance on trip, travel to PIER OFFICE

2/6/09

0730 — On stand-by - D. LAFFOON, M. WEBER
0800 — Commenced dredging — WQM is at Routine
1000 — Meet with Mark at MARINA — calibrated meters — HACH for turbidity, Hydrolab for DO
1025 — At PO BG (North) - 090206 - E1 → OK Tide @ flooding, current to south
1040 — At PO-100U-090206-E1 → OK, dredging stopped while at station to relocate crane & barge
1115 — Started dredging
1125 — At PO-100W-090206-E1 — OK
1135 — At PO-100D-090206-E1 — OK but turbidity was elevated
1200 — Back at MARINA, no exceedances returned to Pier office
1350 — Called Mike w/ Pacific. Completed dredging for the day, setting up to unload to RAILCARS.
1435 — Commenced off-load to rail-CARS

360-480-1823

2/7/09

0730 – D. LAFFOON on-site @ Pier office. Loading to rail cars today – Monitoring @ Limited. – on stand-by

2/9/09

0745 A. Gale at port office OFFLOAD TO RAIL CARS. Monitoring @ Limited

2/10/09

0840 A Gale at port office. Dredging seen H.

1115 DRIVE TO marina

1145 POBG

1158 PO-100U → No Exceedance

1205 PO-100- → No exceed

1208 PO-100D → No exceed

1350 Return to Port office

2/11/09

0815 A Gale to port office Dredging.

2/12/09

0830 M Wilson at port office offloading to rail cars today Monitoring @ limited – on stand-by.

2/13/09

0830 M Wilson at port office offloading to rail cars today Mon't @ limited – on stand-by

2/14/09 M Wilson at port office

0845 Calibrate Mach Turbidimeter – Successful.

They are dredging today – Routine we are on a ~~4 hour~~ ~~per day~~ water quality monitoring.

1040 Gravity (Sean Hinz) arrives. Meeting at boat dock at 1100

1120 Departed Marina

1140 PO-BG – ~~0~~ E1 – ~~no ex~~

1154 PO-100U – E1 – no exceedances

1157 PO-100D – E1 – no exceedances

1201 PO-100D – E1 – no exceedances

1220 Back at marina.

2/16/09

0750 — D. LAFFOON @ Port Office
Dredging occurring today, on routine monitoring. Gravity is on site.

1005 Met with Winslow Gerrish of Gravity at Marina, Calibrated equipment.

1033 At PO-BG-090216-E1 → OK
1055 At PO-100U-090216-E1 → OK
1120 At PO-100W-090216-E1 → OK
1134 At PO-100D-090216-E1 → OK
1330 Back at Marina

2/17/09

0730 — D. LAFFOON @ Port Office.
Dredging occurring today followed by off-loading to railcars in afternoon. Gravity is in vicinity.

1000 — Attended weekly Dredge project meeting at main offices w/Gravity.

1100 — Meet Shawn at Marina, motored to dredging, calibration complete.

1130 — At PO-BG-090217-E1 → OK
1138 — At PO-100U-090217-E1 → OK
1141 — At PO-100W-090217-E1 → OK
1149 — At PO-100D-090217-E1 → OK
1210 — Returned to Marina, no exceedances
1530 — Pacific stopped dredging operations Setting up to off-load in morning
1645 — Talk with Pacific & JoAnn

2/18/09

0800 — D. LAFFOON AT PORT OFFICE
OFF-LOADING TODAY — ON LIMITED MONITORING — ON STAND BY

2/19/09

0745 — AGALE AT PORT OFFICE
DREDGING, CLEAN UP any high areas.

2/20/2009

Agale onsite 7:45.
OFF-LOADING PREP UNTIL NOON. LIMITED MONITORING.

2/2 09 A. gate
ONsite 0800, Door/frontgate locked.
Offloading all day.
0/1530 - Offloading complete

2/23 A. Gate
At Port office 0740

2/24/09 - D. LAFFOON at Port Office - 0730
0730 - No water work going on
1000 - Attended weekly meeting with the Port, Dredgers and Ecology - plan to perform clean-up dredging after lunch - routine monitoring
1400 - Meet with Shawn at MARINA
1430 - At PO-BG-090224-E1 → OK
1442 - At PO-100U-090224-E1 → OK
1450 - At PO-100W-090224-E1 → OK
1503 - At PO-100D-090224-E1 → OK
1530 - Returned to MARINA. Hydrolab to be taken by Shawn to Recharge.
1550 - Finished dredging, set up to off-load.
1630 - Left for the day

2/25/09 M Wilson at Port
0800 Arrive on-site
off-loading activities ongoing at present - water quality monitoring on-call.
Barge cleaning and decon will commence in p.m. Water Quality Monitoring at routine during decon.
0900 Calibrated Hach Turbidimeter
1430 Call from Mike at Pacific Pier - They will finish off-loading 30 minutes and begin barge decon.
1500 Met S. Hinz of gravity at Marina.

02/27/2009
0730 A. Gate onsite
Prepping SAND cover op.
WQ monitoring intensive
Begin 10:20, 11:15, 1505
No exceedances

3/2/09

0730 – D. LAFFOON on-site. SAND cover placement is on-going
0815 – Stopped sand placement, switching out empty barge with the one full of sand
1110 Moved to MARINA, motored to site started sand placement
1147 At PO-BG-090302-E1, stopped sand placement at 1140 did not continue round
1408 Back at Background PO-BG-090302-E2 OK
1432 At PO-100U-090302-E2, had exceedance
1448 At PO-100W-090302-E2 → OK
1503 At PO-100D-090302-E2 → OK
1508 Back at PO-100U-090302-E2a- had exceedance again
1515 At PO-150U-090302-E2 → OK but elevated turbidity, contact Jo Ann & Dan to stop production
1601 At PO-100U-090302-E2b, no sand placement going on but exceeded
1604 At PO-150U-090302-E2a – OK
1615 placement started again
1625 At PO-100U-090302-E2c → OK
1650 Back at MARINA

3/3/09

0730 – D. LAFFOON & D. DICKINSON ON-SITE SAND COVER ONGOING
0810 – TRAVEL TO MARINA FOR ROUND
0830 – PLACEMENT STOPPED
0840 – PO-BG-090303-E1 → OK
0855 – PO-100U-090303-E1 → OK
0908 – PO-100W-090303-E1 → OK
0915 – PO-100D-090303-E1 → OK
1000 – Attended weekly meeting — sand cover complete, performing survey to check placement Monitoring complete for the day – did paperwork in office – left @ 1215