SITE HAZARD ASSESSMENT WORKSHEET 1

Summary Score Sheet

SITE INFORMATION:

Name: **Wymans Marina & Wholesale Supply**
Address: **202 U Avenue**
City: **Anacortes** County: **Skagit** State: **WA** Zip: **98221**
Parcels: **P32868, P56526, P56511, P56510**
Section/Township/Range: **East ½ West ½ Section 18, Township 35 North, Range 2 East**
Latitude: **48 31 14.6 DMS** Longitude: **-122 36 18.4 DMS**
FSID #: **2821735**

Site scored/ranked for the February 19, 2009 update of the Site Register
October 24, 2008

SITE DESCRIPTION:

The Wyman's Marina and Wholesale Supply site, owned by the Port of Anacortes, is located in Anacortes on Guemes Channel. The property has been used for marine related industry since 1944. The site was most recently used by the Wymans for boat servicing and maintenance until 1998. The site is bordered on the north by Guemes Channel, to the west by a restaurant, and to the south and east by single family homes. The land surface consists of layers of fill over native sand and silt. The shoreline is exposed bedrock with concrete bulkheads. The land slopes to the north toward Guemes Channel. The area is served by City of Anacortes drinking water and sewer service. For a more complete history of site activities refer to Hart Crowser, 2001. A general vicinity map is presented in Figure 1.

The first environmental assessment on record for the site occurred in 1997. Otten Engineering performed a Phase 2 Environmental Assessment of the site. Thirteen surface soil samples were taken in areas of visible soil staining or other evidence of contamination. No groundwater samples were taken. Six samples were taken from surface sediments near the boat launch, the piers, and the sanitary and storm drain outfalls. Most soil and sediment samples were analyzed for Total Petroleum Hydrocarbons (TPH) and metals, and select samples were analyzed for Volatile Organic Compounds (VOCs), Semi-volatile organic compounds (SVOCs), and Polychlorinated Bi-phenyls (PCBs).

Results of surface soil samples showed levels of contamination in multiple locations throughout the property that exceeded Model Toxics Control Act (MTCA) Method A (unrestricted land use) or Method B (direct contact) Clean Up Levels for TPH-Diesel and Heavy Oil (4 locations), TPH-Gasoline (1 location), cadmium (2 locations), arsenic (1 location), copper (2 locations), lead (3 locations), and 4,4- DDD (1 location). All sediment samples had detections of analytes but no samples were reported to exceed Washington Sediment Quality Standards (SQS). Tri-butyl tin was detected in 3 sediment pore water samples at concentrations at or below the Puget Sound Disposal Authority sediment screen level of 0.15 ug/L. No site remediation work is reported related to the results from this Phase 2 study. Refer to Figure 2 copied from Otten 1997 for the site diagram and sample locations. Table 1 summarizes sample results over the MTCA Method A (unrestricted land use) or Method B (direct contact) Clean Up Levels.

In 1998 the Port contracted with Marco Engineering and Otten Engineering to remove and assess contamination from four underground fuel storage tanks (USTs). Two gasoline (2,000 gallon and 3,000 gallon) and two diesel (3,000 gallons each) USTs were removed from one excavation located on

the center east side of the main building. Contaminated soil in the immediate vicinity of the excavation was removed and sent for treatment. This soil excavation did not cover the areas of contamination found in the 1997 Phase 2 Environmental Assessment. Figure 3, copied from Otten, 1998, shows the tank removal excavation location.

An Initial Investigation was completed on the site in 2003 by Gail Colburn of the Washington State Department of Ecology (Ecology). Based on the 1997 Otten report the site was listed on Ecology's Confirmed and Suspected Contaminated Sites list for the confirmed presence of metals, petroleum products, and pesticides in soil and petroleum products in surface and groundwater.

In 2004 Landau Associates performed limited site investigation which included four soil borings. Three borings were taken from the east side of the building and one from just to the south west of the building. Two boring locations were near sample locations from Otten, 1997 but in general, the locations from the 1997 sampling were not duplicated. Groundwater was encountered between 4 and 12 feet below ground surface. One groundwater sample was obtained. One soil sample from each boring and the groundwater sample were all analyzed for BTEX, TPH-G, TPH-D, TPH-O, and metals. Two samples had very low levels of TPH-D and -O but no exceedances of MTCA Method A Clean Up Levels were found. No further site investigations are reported.

Polly Dubbel performed a site visit for the Site Hazard Assessment on October 14, 2008. Connie Thoman from the Port of Anacortes was present for the site visit. The site has been vacant since 1998. Much of the site consists of graveled open ground. A building in three sections is on the north end of the property. A concrete apron extends off of the south side of the building. The north side of the building is fronted by large concrete pier with a dock extending into Guemes Channel. Pier supports appear to be creosote treated timbers. The shoreline is covered with broken concrete and bedrock. Fuel pumps are present on the dock but as stated earlier, the supply tanks have been removed. It is unknown if the fuel supply lines have been removed. A boat launch with marine rails is present on the west side of the property. The boat launch may still be used at times. No obvious signs of contamination were found during the site visit.

ROUTE SCORES:

Surface Water/Human Health: 30.5
Air/Human Health: 29.4
Groundwater/Human Health: 33.4

Surface Water/Environmental: 62.0
Air/Environmental: 27.8

OVERALL RANK: 1

WORKSHEET 2
Route Documentation

1. **SURFACE WATER ROUTE**
   a. List those substances to be considered for scoring: Source: 2,6,7
      TPH Gasoline, TPH Diesel, TPH Heavy Oil,
      Arsenic, Cadmium, Copper, Lead, Mercury, 4,4 DDD
   b. Explain basis for choice of substance(s) to be used in scoring.
      Documented surface soil contamination above clean up levels,
      Not all substances used in scoring as toxicity at maximum.
   c. List those management units to be considered for scoring: Source: 2,6,7
      Contaminated surface soil
   d. Explain basis for choice of unit to be used in scoring:
      Documented surface soil contamination available to route

2. **AIR ROUTE**
   a. List those substances to be considered for scoring: Source: 2,6,7
      TPH Gas, TPH Diesel, Cadmium, Copper, Lead
   b. Explain basis for choice of substance(s) to be used in scoring:
      Documented soil contamination above clean up levels,
      Substances scored have air toxicity values.
   c. List those management units to be considered for scoring: Source: 2,6,7
      Contaminated surface soil
   d. Explain basis for choice of unit to be used in scoring:
      Documented surface soil contamination above MTCA Clean up levels.

3. **GROUNDWATER ROUTE**
   a. List those substances to be considered for scoring: Source: 2,6,7
      TPH Gas, TPH Diesel, Cadmium, Copper, Lead, 4,4 DDD
   b. Explain basis for choice of substance(s) to be used in scoring:
      Documented surface soil contamination above clean up levels,
      Not all substances used in scoring as toxicity at maximum.
   c. List those management units to be considered for scoring:
      Contaminated soil.
   d. Explain basis for choice of unit to be used in scoring:
      Documented soil contamination, limited evaluation of groundwater at site.

WORKSHEET 4
Surface Water Route

1.0 SUBSTANCE CHARACTERISTICS

1.2 Human Toxicity

	Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	TPH Gas	5	8	3306, rat	3	ND	-	A	0.029	5
2	TPH Diesel	160	4	490, rat	5	0.004	3	ND	ND	-
3	Cadmium	5	8	225, rat	5	0.0005	5	ND	ND	-
4	Copper	1300	2	ND	-	0.037	1	ND	ND	-
5	Lead	5	8	ND	-	<0.001 (NOAEL)	10	ND	ND	-
6	4,4 DDD	ND	-	113, rat	5	ND	-	B2	.24	4

* *Potency Factor*

Source: 2,6,7

Highest Value: 10
(Max = 10)

Plus 2 Bonus Points +2

Final Toxicity Value: 12
(Max = 12)

1.2 Environmental Toxicity – Marine Water

	Substance	Acute Water Quality Criteria		Non-Human Mammalian Acute Toxicity	
		(µg/L)	Value	(mg/kg)	Value
	TPH Gas	5100	2		
1	TPH Diesel	2350	2		
	Cadmium	43	6		
3	Copper	2.9	8		
2	Lead	140	4		
4	4,4 DDD			113	5

Source: 1,2,6,7

Highest Value: 8
(Max = 10)

1.3 Substance Quantity

Explain Basis: Unknown quantity, default to 1.	Source: 1,2,4,6 **Value: 1** (Max = 10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment:** No containment **Explain basis:** Contaminated surface soil, minimal pavement	1, 2,6	**10** (Max = 10)
2.2	**Surface Soil Permeability:** Site is adjacent to surface water	1,6	**7** (Max = 7)
2.3	**Total Annual Precipitation:** Anacortes 25.7"	6,8	**2** (Max = 5)
2.4	**Max 2yr/24hr Precipitation:** 1.5 inches	6	**2** (Max = 2)
2.5	**Flood Plain:** Not in the flood plain	6,12	**0** (Max = 2)
2.6	**Terrain Slope:** Adjacent to surface water	1,6	**5** (Max = 5)

3.0 TARGETS

		Source	Value
3.1	**Distance to Surface Water:** 0 feet	1,6	**10** (Max = 10)
3.2	**Population Served within 2 miles (see WARM Scoring Manual Regarding Direction):** 0	6,11,12	**0** (Max = 75)
3.3	**Area Irrigated by surface water within 2 miles : 0**	6,12	**0** (Max = 30)
3.4	**Distance to Nearest Fishery Resource:** Guemes Channel <1000feet	1,6	**12** (Max = 12)
3.5	**Distance to, and Name(s) of, Nearest Sensitive Environment(s):** Guemes Channel <1000 feet	1,6	**12** (Max = 12)

4.0 RELEASE

Explain Basis: No release documented to surface water from upland chemicals of concern	Source: 2,3,5,6 **Value: 0** (Max = 5)

WORKSHEET 5
AIR ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1. Introduction (WARM Scoring Manual) – Please review before scoring

1.2 Human Toxicity

	Substance	Air Standard ($\mu g/m^3$)	Value	Acute Toxicity (mg/m^3)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	TPH Gas	0.12	10	31947, rat	3	ND	-	A	0.029	5
2	TPH Diesel	166.5	4	ND	-	ND	-	ND	ND	-
3	Cadmium	0.00056	10	25, rat	10	ND	-	B1	6.1	6
4	Copper	3.3	9	ND	-	ND	-	ND	ND	-
5	Lead	0.5	10	ND	-	ND	-	ND	ND	-

* *Potency Factor*

Source: 2,6,7

Highest Value: 10
(Max = 10)

Plus 2 Bonus Points +2

Final Toxicity Value: 12
(Max = 12)

1.3 Mobility (Use numbers to refer to above listed substances)

	1.3.1 Gaseous Mobility	1.3.2 Particulate Mobility		
	Vapor Pressure(s) (mmHg)	Soil Type	Erodibility	Climatic Factor
1-TPH Gas	VP=95 Value 4			
2-TPH Diesel	VP= 0.0082 Value 3			
3-Cadmium		gravelly sand	22	1-10
4-Copper		gravelly sand	22	1-10
5-Lead		gravelly sand	22	1-10

Source: 2,6,7

G.M. Value: 4
(Max = 4)

Compare: 20/4 = 20 vs. 12/0 = 3

P.M. Value: 0
(Max = 4)

1.4

Final Matrix Value: 20
(Max = 24)

1.5 Environmental Toxicity/Mobility						
	Substance	**Non-human Mammalian Inhalation Toxicity (mg/m^3)**	**Acute Value**	**Mobility**	**Value**	**Matrix Value**
1	TPH-Gas	31947	3	95 mm Hg	4	6
3	Cadmium	25	10	22/1-10	0	3

Highest Environmental Toxicity Matrix Value (from Table A-7) = **Final Matrix Value:6**
(Max = 24)

1.6 Substance Quantity	
Explain Basis: Unknown, use default value = 1	Source: 1,2,4,6 **Value: 1** (Max = 10)

2.0 MIGRATION POTENTIAL

		Source	**Value**
2.1	**Containment:** Contaminated surface soil, no cover, no containment	1,2,6	**10** (Max = 10)

3.0 TARGETS

		Source	**Value**
3.1	**Nearest Population:** < 1000'	1,6	**10** (Max = 10)
3.2	**Distance to [and name(s) of] nearest sensitive environment(s):** City of Anacortes Rotary Park = 1700 feet	6,12	**6** (Max = 7)
3.3	**Population within 0.5 miles:** Est 200 buildings x 3 =600, sqrt 600 = 24	6,12	**24** (Max = 75)

4.0 RELEASE

Explain Basis: No documented release to air.	Source: 2,4,6 **Value: 0** (Max = 5)

WORKSHEET 6

Groundwater Route

2.0 SUBSTANCE CHARACTERISTICS

1.2 Human Toxicity

	Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	TPH Gas	5	8	3306, rat	3	ND	-	A	0.029	5
2	TPH Diesel	160	4	490, rat	5	0.004	3	ND	ND	-
3	Cadmium	5	8	225, rat	5	0.0005	5	ND	ND	-
4	Copper	1300	2	ND	-	0.037	1	ND	ND	-
5	Lead	5	8	ND	-	<0.001 (NOAEL)	10	ND	ND	-
6	4,4 DDD	ND	-	113, rat	5	ND	-	B2	.24	4

* *Potency Factor*

Source: 2,6,7

Highest Value: 10
(Max = 10)

Plus 2 Bonus Points? +2

Final Toxicity Value: 12
(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)

Cations/Anions [Coefficient of Aqueous Migration (K)] OR	Solubility (mg/L)
1=	**1**= 1800 value=3
2=	**2**=30 value=1
3= >1 value=3	**3**=
4= 0.1 to 1.0 value=2	**4**=
5= 0.1 to 1.0 value=2	**5**=
6=	**6**= 0.1 value=0

Source: 2,6,7

Value: 3
(Max = 3)

1.3 Substance Quantity (volume):

Explain basis: Unknown quantity, default to 1	Source:2,4,6 **Value: 1** (Max=10)

3.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment (explain basis):** Contaminated soil, no cap	1,2,6	**10** (Max = 10)
2.2	**Net precipitation:** (3.5+3.8+3.4+2.6+2.4+1.5)-(1.0+.7+.5+.7+1.2+2.1) = 11.0"	6,8	**2** (Max = 5)
2.3	**Subsurface hydraulic conductivity:** sand and gravel > 10E -3	2,5,6	**4** (Max = 4)
2.4	**Vertical depth to groundwater:** Soil boring on site found groundwater at 4.0 – 12 feet bgs	2,5,6	**8** (Max = 8)

4.0 TARGETS

		Source	Value
3.1	**Groundwater usage:** Ground water not used but useable	6,10,12	**2** (Max = 10)
3.2	**Distance to nearest drinking water well:** >10,000 feet	6,10,12	**0** (Max = 5)
3.3	**Population served within 2 miles: √ pop.** = √0 =0	6,10,12	**0** (Max = 100)
3.4	**Area irrigated by (groundwater) wells within 2 miles: (0.75)*√# acres** = 0.75 * √0 = 0	6,10,12	**0** (Max = 50)

5.0 RELEASE

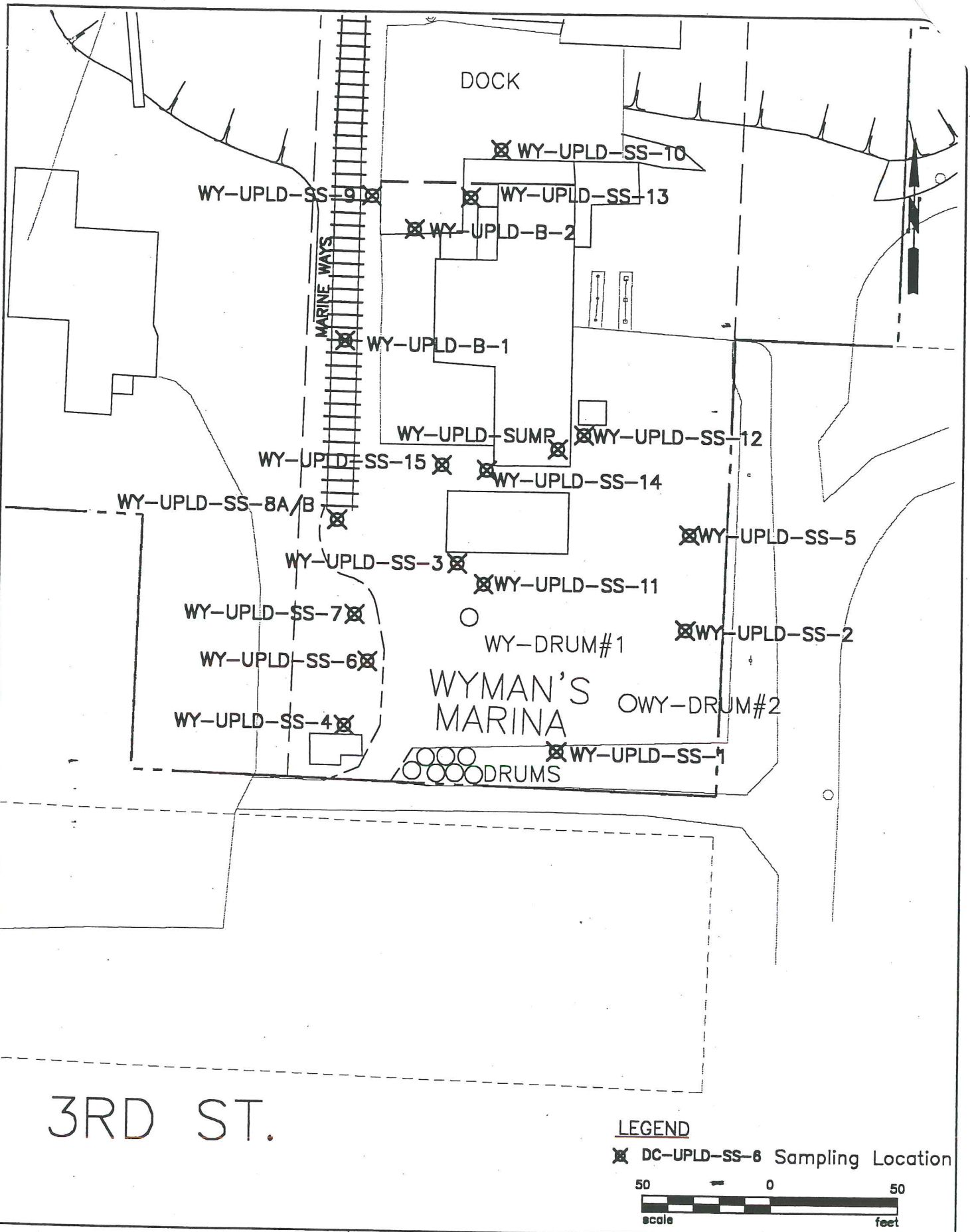
	Source	Value
Explain basis for scoring a release to groundwater: No documented release to groundwater	2,5,6	**0** (Max = 5)

SOURCES USED IN SCORING

1. Skagit County Health Department, Wyman's Marina field notes and file, October 2008.
2. Otten Engineering, Phase 2 Environmental Assessment Wyman's Marina Site Port of Anacortes, October 1997.
3. Otten Engineering, Underground Storage Tank Closure Assessment Port of Anacortes Former Wyman's Marina Property, March 1998.
4. Hart Crowser, Draft Preliminary Environmental Assessment Wyman's Marina Property, March 2001.
5. Landau Associates, Multiple Site Investigation Port of Anacortes, December 2004.
6. Washington Department of Ecology, WARM Scoring Manual, April, 1992.
7. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January, 1992.
8. National Weather Service, Washington Climate Data.
9. Washington Department of Ecology, Water Rights Information System (WRIS), 1997.
10. Washington Department of Ecology, Well Logs.
11. Washing Department of Health Public Water Supply Data.
12. Skagit County Mapping, SkagitView Version 5.0, June 2008.

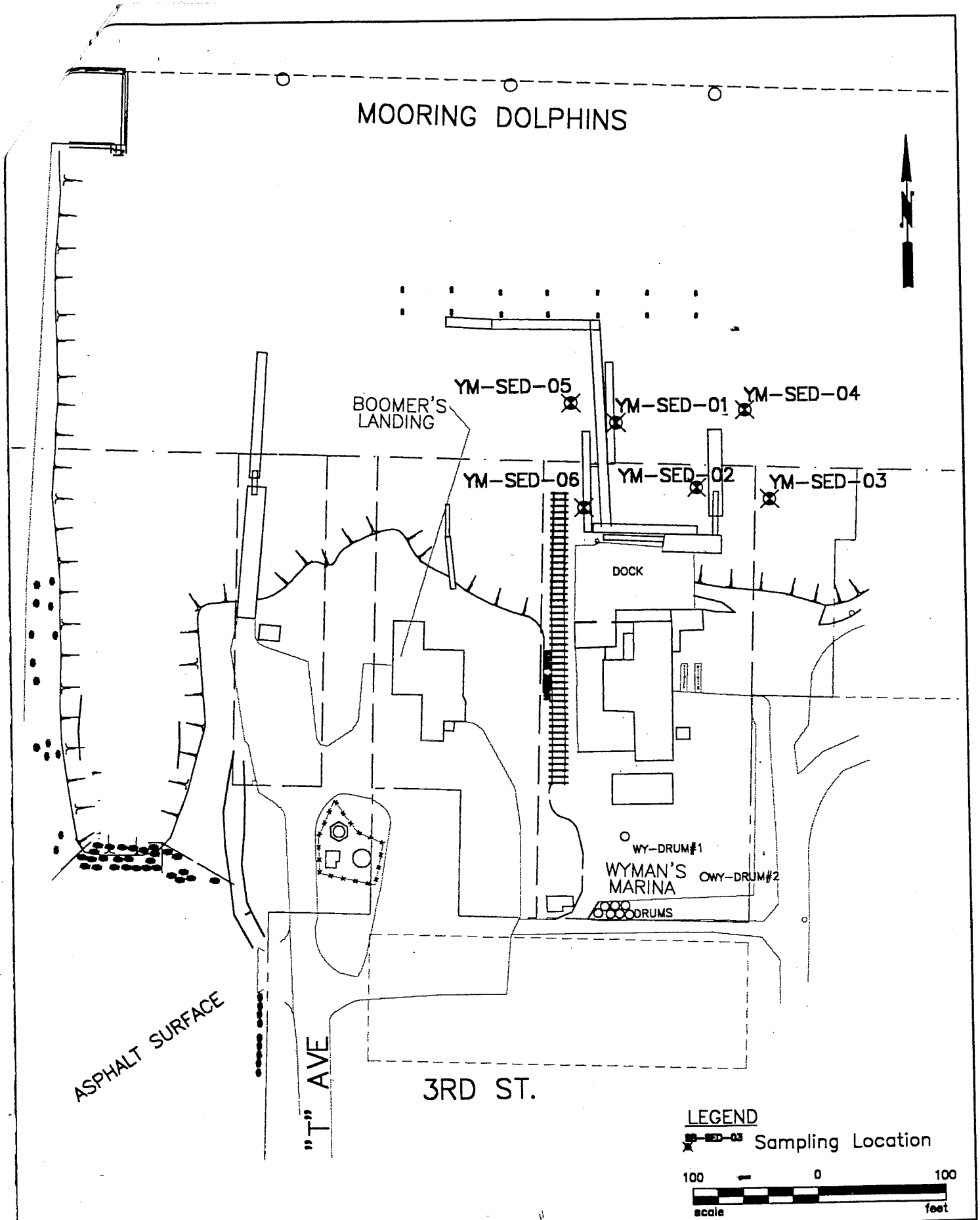
Wymans Marina and Wholesale Supply

Site Hazard Assessment Figure 1 – Vicinity Map



	OTTEN ENGINEERING 3029 NE 182nd Street Seattle, WA. 98155	Figure 1 – Upland Samples Wyman Marina Port of Anacortes Anacortes, WA

FIGURE 2 WYMANS MARINA SITE HAZARD ASSESSMENT
(PAGE 1 of 2)



Pentec Environmental Edmonds, WA 98020 (206) 775-4682	OTTEN ENGINEERING 3029 NE 182nd Street Seattle, WA. 98155	Figure 2 - Sediment Samples Wyman Marina Port of Anacortes Anacortes, WA

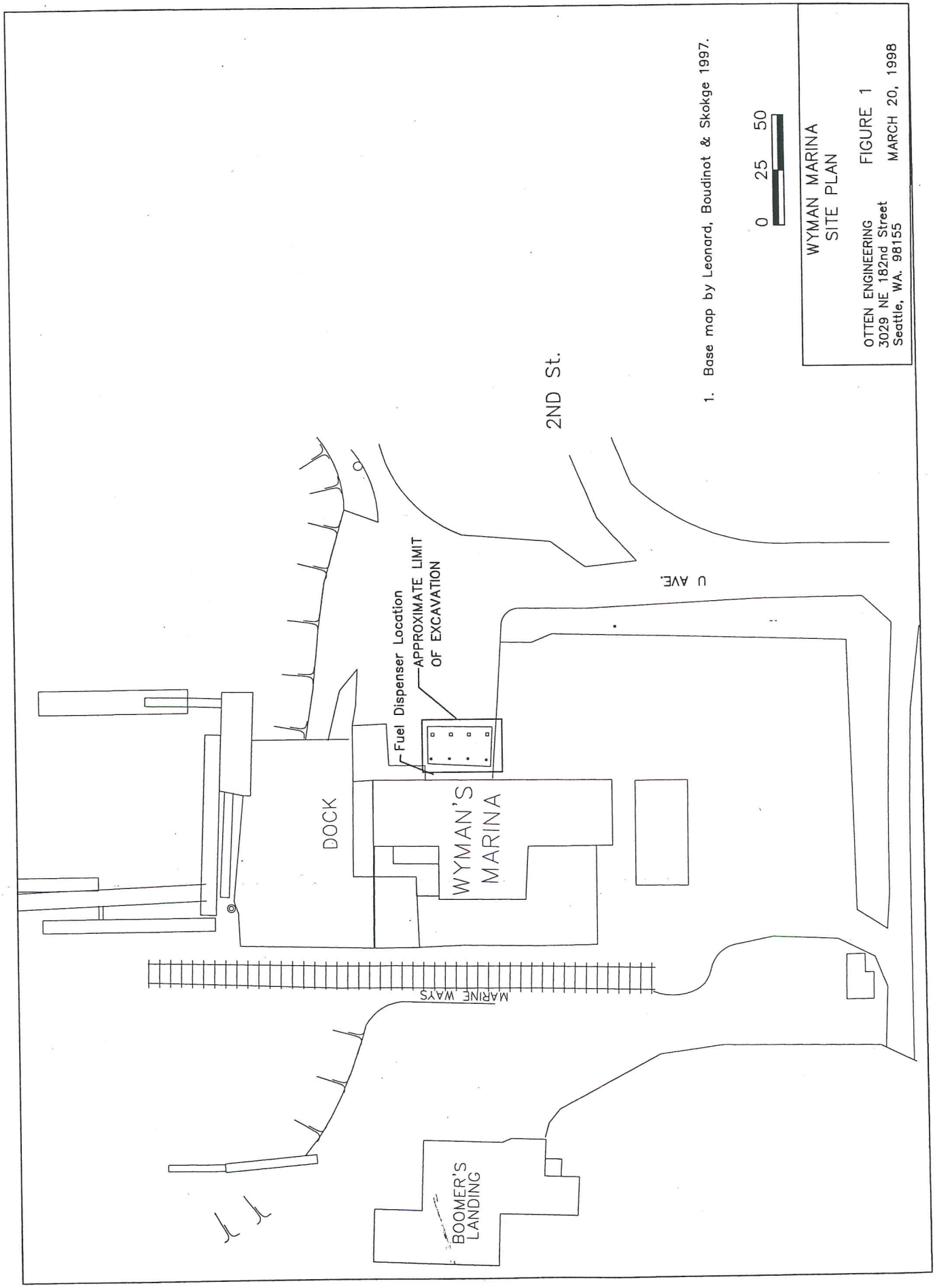
FIGURE 2 (PAGE 2 of 2)

Table 1 – Summary of Surface Soil Sample Results Exceeding MTCA Method A (unrestricted land use) or B (direct contact) Levels

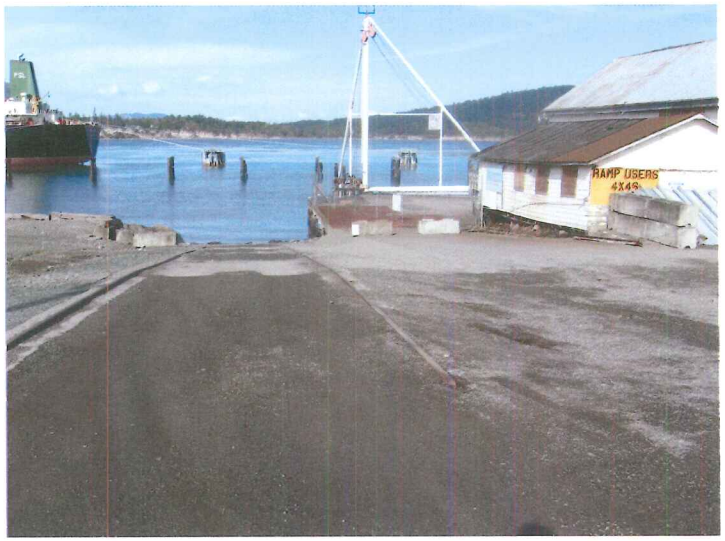
Results summarized from Table 3-1, Otten 1997. Sample Names in Table 3-1 begin with WY-UPLD. All units mg/kg.

	SS-2	SS-6	SS-8 (A& B)	SS-9	SS-12	SS-13	SS-14	SS-15	Clean Up Level
Arsenic				24.4					20.0 (Method A)
Cadmium						7.78		9.50	2.0 (Method A)
Copper			3300	3660					2960 (Method B)
Lead						378	1390	894	250 (Method A)
Mercury						2.11			2.0 (Method A)
4,4 DDD						90.0			4.17 (Method B)
TPH Gas		551							100 (Method A)
TPH Diesel	3530	8820			25100		6300	6920	2000 (Method A)
TPH Oil	27,300	7930							2000 (Method A)

FIGURE 3 WYMANS MARINA SITE HAZARD ASSESSMENT



Wymans Marina and Wholesale Supply
Photos from Site Hazard Assessment 10/14/08



SITE HAZARD ASSESSMENT CHECKLIST

WYMAN'S MARINA + WHOLESALE

***Please note instructions for computer use of this form: All of the sections of the form are protected except for the second box, which will allow you to input the "Status of Contamination," indicated by C or P. To continue using the protected form, click into the next box and use the "TAB" keys to move up or down to take you to the next box to input information.**

SOURCE OF CONTAMINATION

- ☐ Drum
- ☐ Tank
  - ☐ above ground
  - ☐ underground
- ☐ Pond
- ☐ Lagoon
- ☐ Landfill
- ☐ Disposal Trench
- ☐ Waste Pile
- ☐ Emission Stack
- ☒ Other – Describe
  Spills

AFFECTED OR POTENTIALLY AFFECTED MEDIA

Affected Media	Contaminants (#1-17: See contaminants key) Enter letter designating status of contamination C = Confirmed P = Potential																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Ground Water			P			P		P									
Surface Water			P			P		P									
Drinking Water																	
Soil			C			C		C									
Sediment			P			P		P									
Air																	
Biota																	

1 Base/neutral/acid organics
2 Halogenated organic compounds
3 Metals – Priority pollutants
4 Metals – Other
5 Polychlorinated biphenyl's (PCBs)
6 Pesticides
7 Petroleum products
8 Phenolic compounds
9 Non-halogenated solvents
10 Dioxin
11 Polynuclear aromatic hydrocarbons
12 Reactive wastes
13 Corrosive wastes
14 Radioactive wastes
15 Conventional contaminants, organic
16 Conventional contaminants, inorganic
17 Asbestos

POINT OF EXPOSURE

- ☐ Residence
  - ☐ yard
  - ☐ garden
- ☒ Business
- ☐ Playground
- ☐ Well
  - ☐ domestic
  - ☐ municipal
  - ☐ industrial
- ☒ Waterbody
- ☐ Wetland
- ☐ Drainage
- ☐ Other – Describe

ROUTE OF EXPOSURE

- ☒ Inhalation
- Direct Contact
  - ☒ Ingestion
  - ☒ Dermal
    - ☐ contact
    - ☐ absorption

RECEPTOR POPULATION

- ☒ Human
  - ☒ child
  - ☒ adult
- ☒ Biota
  - ☐ terrestrial
  - ☒ aquatic

PETER BROWNING, DIRECTOR
HOWARD LEIBRAND, HEALTH OFFICER

700 SOUTH SECOND STREET #301, MOUNT VERNON, WA 98273, TEL (360) 336-9380 FAX (360) 336-9401

January 2, 2009

Bob Hyde, Executive Director
Port of Anacortes
P.O. Box 297
Anacortes, WA 98221

Subject: Site Hazard Assessment – Wymans Marina and Wholesale Supply, Ecology Facility Site ID: 2821735

Dear Mr. Hyde:

The Skagit County Public Health Department has completed the site hazard assessment (SHA) of the Wymans Marina and Wholesale Supply, 202 U Avenue, Anacortes, WA 98221, as required under the Model Toxics Control Act. This site's hazard ranking, an estimation of the potential threat to human health and/or the environment relative to all other Washington state sites assessed at this time, has been determined to be a 1, where 1 represents the highest relative risk and 5 the lowest.

For your information, Ecology will be publishing the ranking of this and other recently assessed sites in the February 19, 2009 Special Issue of the Site Register. The site hazard ranking will be used in conjunction with other site specific considerations in determining Ecology's priority for future actions.

Please contact me at 360-336-9380 if you have any inquiries/comments about the site scoring/ranking process. For inquiries regarding any further activities at your site now that it is on Ecology's Hazardous Sites List, please call Donna Musa at 425-649-7000.

Sincerely,

Polly Dubbel

Polly Dubbel
Environmental Health Specialist

cc: Donna Musa, Washington Department of Ecology