WORKSHEET 1
SUMMARY SCORE SHEET

March 21, 2003

Site was assessed for the August 26, 2003, Update.

Site Name/Location (Street, City, County, Section /Township/Range, ID Number):

Wilkins Distributing Co.	Township:	24N
a.k.a. Port Orchard Bulk Plant and Cardlock	Range:	1E
134 Bay Street (SR 166)	Section:	26
Port Orchard, WA 98366	Longitude:	122° ' 38' 53"
	Latitude:	47° 38' 13"

Facility Site ID: 26185147

Site Description (Include management areas, substances of concern, and quantities):

This site was listed on the Washington State Department of Ecology's (Ecology) Confirmed and Suspected Contaminated Sites (CSCS) list on July 10, 1998, and on Ecology's Leaking Underground Storage Tank (LUST) list in November, 1992. The site was listed on the LUST list based on a release report to Ecology in regard to an underground line leak. The site was listed on the CSCS list based on historic releases of petroleum products to the ground surface and suspected releases to nearshore sediments.

Site Characteristics:

Currently, the site is an operational bulk fuel distributing facility located within the Port Orchard City limits. The site is located approximately fifty (50) feet from the south shore of Sinclair Inlet and includes a fueling pier. Sinclair Inlet is an arm of Puget Sound and is considered salmon habitat, a fisheries resource, and marine near shore habitat. The site is located on a flat area which is the head of a ravine located between two hillside areas. The property is located within a 100 year floodplain. The closest residence is located to the southeast of the site, approximately 350 feet away, and there are 1,050 residents within a half mile of the site. A small, unclassified stream flows down the ravine behind the site where it is piped to Sinclair Inlet. Based on groundwater studies performed at the site, it appears historic filling and grading have occurred at the property.

The site contains an aboveground tank storage area, with ancillary piping for fuel distribution, and a cardlock fuel pump facility with underground fuel storage tanks. The nine (9) aboveground tanks range in size from 20,000 - 47,000 gallons and the five (5) underground tanks (USTs) range in size from 20,000 - 30,000 gallons. The USTs on-site have all been integrity tested, and have cathodic protection and leak detection. A majority of the site is paved, and a shop building and office are located next to the aboveground tank secondary containment area and the fuel pump area respectively. Four (4) of the underground fuel storage tanks are located beneath the office building.

The soil type at the site is Urban-land Alderwood complex which consists of very gravelly, sandy loam with a depth to cemented hardpan at 20-40 inches. Permeability of this soil is moderately rapid above the hardpan and very slow in the pan. Stormwater flow from the site is piped into Sinclair Inlet through on-site oil/water separators.

Groundwater / Drinking Water:

Groundwater in the area of the site is estimated to be at forty-eight (48) inches below the ground surface. Groundwater at the Wilkins site is essentially connected to Sinclair Inlet due to the close proximity of the shoreline area. Within 2 miles of the Wilkins site are Group A public drinking water wells that supply the City of Bremerton and the City of Port Orchard areas. The City of Bremerton wells are approximately 10,000 feet to the west-southwest of the site. The City of Port Orchard wells are to the south and east, with the eastern wells being 2,700 feet away. The Annapolis Water District wells are approximately 10,000 feet to the east of the site. All of these wells appear to be either upgradient or cross-gradient to the direction of groundwater flow. The approximate number of persons that have drinking water supplied from these Group A wells is 21,600. Within 2 miles of the site there are also Group B public water supply systems and many private wells, with the nearest well being 350 feet away from the site. The Group A wells are anywhere from 500 - 850 feet deep. The majority of local drinking water wells in the area are typically established at an average depth of 150 feet.

Site Contaminants:

Contaminants at the site are typical of bulk petroleum facilities. The historic release of petroleum products has led to groundwater contamination by Total Petroleum Hydrocarbons (TPH) in both the gasoline and extended diesel ranges, as well as typical gasoline breakdown products, benzene, toluene, ethylbenzene, and xylenes (BTEX). During the many environmental assessments performed at the site, groundwater monitoring wells have been installed to measure the extents and levels of contamination. On file at Ecology are groundwater monitoring reports documenting site contamination. The table below includes groundwater sampling results from the November, 2002, quarterly monitoring report. The listed contaminant level values are the highest values from any of the sampled wells. Also listed are the applicable Model Toxics Control Act (MTCA) Method A Groundwater cleanup standards.

WILKINS OIL SITE GROUNDWATER SAMPLING RESULTS
all sample results and MTCA values in parts per million (ppm)
* - The TPH-Dx value is based on 6/13/01 data.

Well	Parameter											
	Benzene	MTCA standard	Toluene	MTCA standard	Ethylbenzene	MTCA standard	Xylenes	MTCA standard	TPH-Dx	MTCA standard	TPH-Gx	MTCA standard
Various	.032	0.005	.057	1.0	0.198	0.7	1.09	1.0	2.8*	0.5	8.03	0.8

Special Considerations (Include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):

Contaminated near shore sediment is also suspected at the site based on historic releases as well as historic fuel pier operations. The sediment route was not scored as part of this SHA.

A confirmed release to the surface water route was not scored as contaminated surface soils have been removed from the site. Any surface water discharge from the site is currently piped through oil/water separators to Sinclair Inlet.

PATHWAY SCORES:

Surface Water/Human Health:	6.2	Surface Water/Environ:	10.4
Air/Human Health:	19.8	Air/Environmental:	17.8
Groundwater/Human Health:	36.4		

OVERALL RANK: 4

jfk/swwqbcd/shw/common/sha/sites/wilkins/wilkinswksht1.doc

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE -

List those substances to be considered for scoring: Source: 1

Total Petroleum Hydrocarbons – Gasoline and Diesel ranges, benzene, toluene, ethylbenzene, and xylenes.

Explain basis for choice of substance(s) to be used in scoring.

The substances were indentified in analytical groundwater samples from the site.

List those management units to be considered in scoring: Source: 1

Contaminated soils and groundwater.

Explain basis for choice of unit to be considered in scoring.

Confirmed release of contaminated groundwater which is hydraulically connected to surface waters.

2. AIR ROUTE

List those substances to be considered for scoring: Source: 1

Total Petroleum Hydrocarbons – Gasoline and Diesel ranges, benzene, toluene, ethylbenzene, and xylenes.

Explain basis for choice of substance (s) to be used in scoring:

The substances were indentified in analytical groundwater samples from the site.

List those management units to be considered in scoring: Source: 1

Contaminated soils and groundwater.

Explain basis for choice of unit to be considered in scoring:

Vapors generated by contaminated soils and groundwater.

3. GROUND WATER ROUTE

List those substances to be considered for scoring: Source: 1

Total Petroleum Hydrocarbons – Gasoline and Diesel ranges, benzene, toluene, ethylbenzene, and xylenes.

Explain basis for choice of substance (s) to be used in scoring:

The substances were indentified in analytical groundwater samples from the site.

List those management units to be considered in scoring: Source: 1

Contaminated soil and and groundwater.

Explain basis for choice of unit to be considered in scoring:

Uncontrolled releases to ground surface and below ground surface contaminating soil and groundwater at the site.

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcinogenicity WOE	PF	Val.
benzene	5	8	3306	3	ND	-	A	0.029	5
ethylbenzene	700	4	3500	3	0.1	1	ND	ND	-
m-xylene	10000	2	5000	3	2	1	ND	ND	-
p-Xylene	10000	2	5000	3	ND	-	ND	ND	-
toluene	2000	2	5000	3	0.2	1	ND	ND	-
TPH-Dx	20	6	490	5	0.004	3	ND	ND	-

Source: 1, 4
Highest Value: 8
2 Bonus Points? 2
Final Toxicity Value **10**

1.2 Environmental Toxicity

( ) Freshwater
(X) Marine

Substance	Acute Criteria (ug/l)	Val.	Non-human Mammalian Acute Toxicity (mg/kg)	Val.
benzene	5100	2		
ethylbenzene	430	4		
xylene (scored as m,o,p)	ND	-	5000 (rat)	3
toluene	6300	2		
TPH-Dx	2350	2		

Source: 1,4 Value: 4

1.3 Substance quantity — Source: 1 Value: 1
Explain basis: unknown volume of contaminated soils

2.0 MIGRATION POTENTIAL

2.1 Containment — Source: 1,3 Value: 2
Explain basis: spills and discharges to ground surface with maintained run-on/run-off controls

2.2 Surface Soil Permeability: 0-2%, primarily flat site — Source: 1,3,7 Value: 1

2.3 Total Annual Precipitation: 49 inches/year — Source: 6 Value: 4

2.4 Max. 2-Yr/24-hour Precipitation: 3 inches — Source: 3 Value: 3

2.5 Flood Plain: In a 100 yr. flood plain — Source: 1,6 Value: 2

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.6 Terrain Slope: piped to surface water — Source: 1,6 Value: 3

3.0 TARGETS

3.1 Distance to Surface Water: approx. 50 feet — Source: 6 Value: 10

3.2 Population Served within 2 miles: None. — Source: 1,6 Value: 0

3.3 Area Irrigated within 2 miles: None, due to heavy rainfall in the area — Source: 6 Value: 0

3.4 Distance to Nearest Fishery Resource: approx. 50 feet — Source: 6 Value: 12

3.5 Distance to, and Name (s) of, nearest Sensitive Environment (s) : 50 ft for fisheries resource and shoreline habitat — Source: 1 Value: 12

4.0 RELEASE

Explain basis for scoring a release to surface water: No confirmed release — Source: 1 Value: 0

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 (ug/m3)	Val.	Acute Toxicity (mg/m3)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcinogenicity WOE	PF	Val.
benzene	0.12	10	31947	3	ND	-	A	0.029	5
ethylbenzene	1448.6	1	ND	-	ND	-	ND	ND	-
toluene	1248.8	1	ND	-	0.57	1	ND	ND	-
xylene - mixed	1448.6	1	21714	3	0.085	1	ND	ND	-
TPH-Dx	166.5	4	ND	-	ND	-	ND	ND	-

Source: 1,4
Highest Value: 10
2 Bonus Points? 0
Final Toxicity Value **10**

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

1.3.1 Gaseous Mobility — Source: 3 Value: 4

Vapor Pressure:	mm Hg @ 20C	Value
benzene	95	4
ethylbenzene	7	3
toluene	28	4
xylene (mixed)	10	3
TPH-Dx	0.082	3

1.3.2 Particulate Mobility **NOT USED** — Source: 3 Value: _____

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7)
equals **Final Matrix Value:** **20**

1.5 Environmental Toxicity/Mobility — Source: 4

Substance	Non-human Mammalian Toxicity (mg/m3)	Value	Vapor Pressure Mobility
benzene	31947 (rat)	3	4
ethylbenzene	ND	-	3
toluene	ND	-	4
xylene (mixed)	21714 (rat)	3	3
TPH-Dx	ND	-	3

1.5 Highest Environmental Toxicity/Mobility Matrix Value (from Table A-7) equals
Final Matrix Value: **6**

1.6 Substance Quantity:
Explain basis unknown quantity of contaminated soils — Source: 1,6 Value: 1

WORKSHEET 5 (CONTINUED)
AIR ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment:	cover >2 feet thick over subsurface releases no vapor collection system in place	Source: 1,3	Value: 5

3.0 TARGETS

3.1 Nearest Population:	approx. 350 feet	Source: 3,6	Value: 10
3.2 Distance to, and Name (s) of, Nearest Sensitive Environment (s)	salmon and shoreline habitat - 50 ft.	Source: 1,3,6	Value: 7
3.3 Population within 0.5 miles:	350 homes at 3 people per home = square root of 1050 persons	Source: 6	Value: 32

4.0 RELEASE

Explain basis for scoring a release to air:	None confirmed	Source: 1,3	Value: 0

WORKSHEET 6
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcinogenicity WOE	PF	Val.
benzene	5	8	3306	3	ND	-	A	0.029	5
ethylbenzene	700	4	3500	3	0.1	1	ND	ND	-
m-xylene	10000	2	5000	3	2	1	ND	ND	-
p-Xylene	10000	2	5000	3	ND	-	ND	ND	-
toluene	2000	2	5000	3	0.2	1	ND	ND	-
TPH-Dx	20	6	490	5	0.004	3	ND	ND	-

Source: 1,3,4
Highest Value: 8
2 Bonus Points? 2
Final Toxicity Value: 10

1.2 Mobility (Use numbers to refer to above listed substances) Source: 1,3,4 Value: 3

Solubility	Substance	Value (mg/L)	Score
	benzene	1800	3
	ethylbenzene	150	2
	toluene	540	2
	mixed xylenes	200	2
	TPH - Diesel range	30	1

1.3 Substance Quantity Source: 1,3 Value: 1
Explain basis: unknown quantity of contaminated soils

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1,3 Value: 5
Explain basis: scored as landfill with cover, no leachate control and no liner 0+2+3

2.2 Net Precipitation (N-A): Total (37) - Evap (6) = 31 inches Source: 3,5c Value: 4

2.3 Subsurface Hydraulic Conductivity: gravelly sand, silty sand and clay Source: 1,3,8 Value: 3

2.4 Vertical Depth to Ground Water: approx. 4 feet Source: 1,3, 8 Value: 8

3.0 TARGETS

3.1 Ground Water Usage: Public and private supplies with Source: 3, 7, 9 Value: 4

alternates available

WORKSHEET 6
GROUND WATER ROUTE (CONTINUED)

3.2 Distance to Nearest Drinking Water Well: approx. 350 feet Source: 3, 7, 9 Value: 5

3.3 Population Served within 2 Miles: Greater than 10,000 Source: 3, 7, 9 Value: 100
Group A - 21629 persons Group B - 36 persons private - 327 persons = 21992

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: NO AREA IRRIGATED Source: NA Value: 0

4.0 RELEASE

Explain basis for scoring a release to ground water: confirmed Source: 1,3 Value: 5

Sources Used in Scoring

1. *Cleanup Action Plan*, July 2, 1998 - Hart Crowser
Groundwater Monitoring Report, November 24, 1992 - Olympus Environmental

2. Kitsap County Stormwater Management Ordinance and Design manual, April 1997.

3. Washington Department of Ecology, WARM Scoring Manual, April, 1992.

4. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January, 1992.

5A. Kitsap County Groundwater Management Plan, Volume I, July 1989.
5B. Kitsap County Groundwater Management Plan, Volume II, April 1991.
5C. Kitsap County Groundwater Management Plan, Volume III, April 1996

6. KCHD GIS system for Kitsap County environmental information

7. Soil Survey of Kitsap County Area, WA, United States Department of Agriculture, Soil Conservation Service, September 1980

8. Kitsap County Health District Well Log Database, 2002

PATHWAY SCORING FORMULAE WITH WEIGHTING AND NORMALIZATION FACTORS

Air Route - Human Health Pathway

AIR = (SUB X 60/329) X {REL + (TAR X 35/85} / 24 = **19.84**

where AIR = Pathway score for Air-Human Health =
SUB = (Human Toxicity Value + 5) X (Containment +1) + Substance Quantity = 151

REL = Release to Air = 0
TAR = Nearest population + Population within 1/2 mile = 42

Air Route - Environmental Pathway

AIR = (SUB X 60/329) X {REL + (TAR X 35/85} / 24 = **17.82**

where AIR = Pathway score for Air-Environmental =
SUB = (Env. Toxicity Value + 5) X (Containment +1) + Substance Quantity = 67

REL = Release to Air = 0
TAR = Nearest Sensitive Environment = 7

Surface Water Route - Human Health Pathway

SW = (SUB X 40/175) X {(MIG X 25/24)) + REL + (TAR X 30/115)} / 24 = **6.15**

where SW = Pathway Score for Surface Water-Human Health =

SUB = (Human Toxicity + 3) X (Containment + 1) + Substance Quantity = 40

MIG = Soil Permability + Annual Precip. + Rainfall Frequency + Floodplain + Slope = 13

REL = Release to the Surface Water = 0

TAR = Distance to Surface Water + Population Served by Surface Water + Area Irrigated = 10

Table 2 (Continued)

Surface Water Route - Environmental Pathway

SW = (SUB X 40/175) X {(MIG X 25/24)) + REL + (TAR X 30/115)} / 24 = **10.43**

where SW =	Pathway Score for Surface Water-Environmental =	
SUB =	(Env. Toxicity + 3) X (Containment + 1) + Substance Quantity =	22
MIG =	Soil Permability + Annual Precip. + Rainfall Frequency + Floodplain + Slope =	13
REL =	Release to the Surface Water =	0
TAR =	Distance to Nearest Surface Water + Distance to Fisheries Resource + Distance to Sensitive Environment =	34

Ground Water Route - Human Health Pathway

GW = (SUB X 40/208) X {(MIG X 25/17) + REL + (TAR X 30/165)} / 24 = **36.43**

GW =	Pathway Score For Ground Water-Human Health =	
SUB =	(Human Toxicity + Mobility + 3) X (Containment + 1) + Substance Quantity =	97
MIG =	Depth to Aquifer + Net Precipitation + Hydraulic Conductivity =	15
REL =	Release to the Ground Water =	5
TAR =	Aquifer Use + Well Distance + Population Served + Area Irrigated =	109

KITSAP COUNTY HEALTH DISTRICT

SCOTT W. LINDQUIST, MD, MPH, DIRECTOR
109 AUSTIN DRIVE
BREMERTON, WA 98312-1805
(360) 337-5235

April 25, 2003

Mr. Roger Jensen
Nordic Properties, Inc.
P.O. Box 84
Port Orchard, WA 98366

Dear Roger:

The Kitsap County Health District has completed the site hazard assessment (SHA) of the Wilkins Oil Distributing site, 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 by the Department of Ecology to be a **4**, where a 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 August 26, 2003, Special Issue of the Site Register. The hazard ranking will be used in conjunction with other considerations in determining Ecology's priority for future action at this site.

Please call me at (360) 337-5606 if you have any questions about the SHA of your site. If you have any inquiries/comments about the site scoring/ranking process, please call Michael Spencer at (360) 407-7195. For inquiries regarding what may occur with your site now that it is on Ecology's Hazardous Sites List please call Judy Aitken at (425) 649-7135.

Sincerely,

John Kiess
Environmental Health Specialist
Solid and Hazardous Waste Program

cc: Michael Spencer, Washington Department of Ecology HQ
Judy Aitken, Washington Department of Ecology NWRO

Gull Industries Inc.
3404 4th Ave. S
Seattle, WA 98134

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