



STATE OF WASHINGTON

DEPARTMENT OF HEALTH

OFFICE OF TOXIC SUBSTANCES

Airustrial Center, Building 4 • P.O. Box 47825 • Olympia, Washington 98504-7825

TDD Relay Service (800) 833-6388

June 28, 1996

Dick Heggen
Toxics Cleanup Program
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, Washington 98504-7775

Dear Mr. Heggen:

The Washington State Department of Health (DOH) has conducted a site review of the Little Hoquiam Boat Shop No. 2, which has been declared a hazardous waste site by the Department of Ecology. A DOH site review is a preliminary evaluation of the potential for a hazardous waste site to affect public health. DOH concludes that this site does not present a significant hazard to public health at this time.

This conclusion is based on a site visit and a review of the existing environmental data. The available information was evaluated regarding the potentially affected population, possible exposure pathways, types of contaminants, types of contaminated media, and community concerns.

Although this site has the potential to impact public health, it is not of immediate concern because of the lack of a current completed human exposure pathway, and it has a low priority for further investigation by this department. Should further environmental data indicate that human health is, or soon will be impacted, and/or if there is increased community concern, a more in depth assessment may be conducted in the future.

Sincerely,

Milo A. Straus, Public Health Advisor
Environmental Health Assessment Section

RECORDED
JUL 11 1996
TOXIC SUBSTANCES

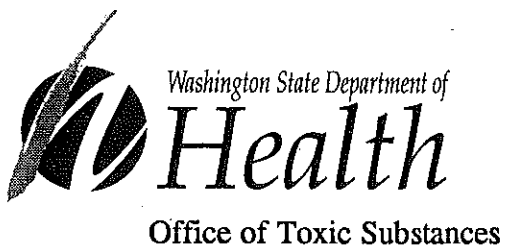
Site Review

Little Hoquiam Boat Shop No. 2

June 1996

Prepared for:
Washington State Department of Ecology

Prepared by:
Washington State Department of Health



FOREWORD

The Washington State Department of Health (DOH) has prepared this site review in accordance with the current Memorandum of Understanding between the Washington State Department of Ecology (Ecology) and DOH. DOH's mission is to protect the residents of Washington State from adverse health effects related to exposure to toxic materials at hazardous waste sites. This mission is accomplished by evaluation of health hazards and recommendations for appropriate interventions.

A site review report is conducted on individual sites and facilities that have been designated as hazardous waste sites by Ecology. Information about the site is reviewed to evaluate the potential for chemicals that originate at a site to cause immediate and/or long-term health effects. A site review is a preliminary evaluation of potential risks to human health and is prepared on sites that have not yet undergone detailed environmental analysis.

For additional information regarding this site review contact:

Milo Straus, Public Health Advisor
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Office of Toxic Substances
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Introduction

In support of the Memorandum of Understanding between the Washington State Department of Health (DOH) and the Washington State Department of Ecology (Ecology), the public health implications posed by the Little Hoquiam Boat Shop No. 2 site in Grays Harbor County were evaluated. This report summarizes DOH's review of existing data.

Background and Statement of Issues

This site was placed on Ecology's Hazardous Sites List February 20, 1996. Milo Straus of DOH made a site visit to the facility located at 825 Queen Avenue, Hoquiam, Washington on May 28, 1996. The files do not indicate any community health concerns at this time.

The Little Hoquiam Boat Shop began operations under the current owner at 119 Endresen Road, Hoquiam, Washington, in 1971. Eleven years later the boat shop expanded, and operations began at 825 Queen Avenue, Hoquiam, Washington. From 1982 to 1988, the two facilities operated concurrently. The current owner sold both facilities in 1987. In 1988, operations ceased at the Endresen Road site. Operations at the Queen Avenue site continued until December 1990, when the Little Hoquiam Boat Shop filed for bankruptcy and the site was abandoned. The current owner repurchased the company in 1992. Boat building operations have resumed at the Queen Avenue facility; minor boat repair and refurbishing have also occurred at the Endresen Road site since that time.

The ten acre Queen Avenue facility is located on the Hoquiam River in an industrial and residential area. The site is bordered by the Hoquiam River to the east, residential properties to the south and west, and the Hoquiam River and wooded areas to the north. The closest house is approximately 50 feet from the operation. The facility is reportedly patrolled by city police; there are no fences or other barriers present that limit site accessibility. The facility uses the city sewer system for domestic sewage disposal; drinking water is supplied by the city of Hoquiam. A storm drain system diverts runoff to the Hoquiam River. The site consists of an office building, a manufacturing building, a garage, a boat ramp, scattered debris piles, and a variety of deteriorating buildings.

Investigations at the facility performed by Ecology in 1984 and 1985, showed non-compliance with a majority of the state of Washington's dangerous waste regulations. On March 30, 1990, Ecology collected samples from two drums at the site. Results showed acetone, methylene chloride, and styrene were present in both drums.

Van Waters and Rogers, a waste treatment, storage, and waste disposal company, was hired to recycle and dispose of waste acetone and other accumulated wastes present at

Queen Avenue. In July 1990, Van Waters and Rogers sampled drummed waste at Queen Avenue. The results showed the waste included acetone, catalyzed resin (containing 43 percent styrene monomer), polyester resin (43 percent styrene monomer), paint (35 percent styrene monomer), adhesive (10 percent toluene, 15 percent acetone, 10 percent methyl ethyl ketone, and 5 percent hexane), polymer, and oil. Other metals present in materials used at the site included zinc, calcium, magnesium, and cobalt.

In 1991, the U.S. Environmental Protection Agency (EPA) tasked Ecology and Environment, Inc., (E&E) to perform a site inspection in order to determine if the facility merited inclusion on the National Priorities List (NPL). E&E performed extensive soil, subsurface soil, and river sediment sampling. Results revealed concentrations of volatile organic compounds (VOCs), semi-volatile organic compounds, and heavy metals above background levels. As a result of these findings the owner entered an agreement with EPA to conduct removal actions at the site.

In May 1994, EPA tasked E&E to conduct site assessment activities to determine whether the removal actions had been performed. Samples collected by E&E during this assessment were compared to the state of Washington's Model Toxics Control Act (MTCA) Method A and Method B cleanup levels for soil. None of the analytical results exceeded the MTCA cleanup levels. However, in 1995, Ecology placed the site on the Hazardous Sites List, based on contaminated surface soils and their migration potential.

Discussion

An exposure pathway is the process by which an individual is exposed to contaminants that originate from a source of contamination. A pathway consists of five elements: (1) a source of contamination; (2) an environmental medium in which the contaminants may be present or may migrate; (3) points of human contact; (4) routes of human exposure such as inhalation, ingestion, or dermal absorption; and (5) a receptor population. A completed exposure pathway exists if all five of the elements of an exposure pathway are present and exposure to the contaminant has occurred in the past, is currently occurring, or will occur in the future. A potential exposure pathway exists when one or more of the five elements are missing, but indications are that exposure could have occurred in the past, could be occurring now, or could occur in the future. A pathway can be eliminated if one or more of the elements is known not to exist or the pathway is unlikely to occur. Available information does not indicate a completed exposure pathway at this time. The site and surrounding area's drinking water is supplied by the city of Hoquiam, and there are no domestic or private wells within two miles of the site. There have been no complaints of odors or dust emanating from the facility or reports of children or other unauthorized individuals being on site.

The site visit and site review conducted by DOH indicates that although contamination has been documented on-site, even under the worst type of exposure scenario (children ingesting contaminated soils) the level of exposure that would result is still well below health based guidelines.

Conclusions

Contaminated surface soils have been detected on site. Although this site has the potential to impact public health, based on available data and worst case exposure scenario, it does not represent a public health concern at this time.

Recommendations

1. The owner should continue to work with Ecology to resolve the issues at the site.
2. Access to the site should continue to be restricted. Since there have been no reports of unauthorized access, the current security patrol by the city police seems to be effective.
3. During any remediation activities, precautions should be taken to ensure contaminated soil and airborne dust are contained on site.
4. If further information/environmental data indicate that human health is, or soon will be impacted, and/or if there is increased community concern, DOH should re-evaluate the public health implications posed by the site.

Distribution

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Douglas George
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References

Ecology and Environment, Inc. October 1991. Site Inspection Report for Little Hoquiam Boat Shop, Inc.

Ecology and Environment, Inc. July 1994. Little Hoquiam Boat Shop Site Assessment.

PRC Environmental Management, Inc. Site Inspection Prioritization - Level 1, Little Hoquiam Boat Shop, Queen Avenue, Hoquiam, Washington.

Washington State Department of Ecology Warm Ranking Method Route Score Summary and Ranking Calculation Sheet, Little Hoquiam Boat Shop #2, 825 Queen Avenue, Hoquiam, Washington 98550. January 1996.

Washington State Department of Ecology, Southwest Regional Office files.

Washington State Department of Health, Public Water Supply listing.

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name: Little Hoquiam Boat Shop #2

Site Location: (City, County, or Section/Township/Range)
825 Queens Ave. Hoquiam, WA 98550 Grays Harbor County
Section 2, Township 17N, Range 10W

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

The Little Hoquiam Boat Shop #2 housed a shake mill, a door manufacturing company, and a chair manufacturing company for 40 to 50 years prior to becoming a boat manufacturing shop in 1982. In October of 1987 the ROI Group purchased the facility and later filed for bankruptcy in December 1990. Since 1992 when Howard Moe purchased the site, the facility has been used for manufacturing boats. Howard Moe also owned the shop prior to 1987. The land is owned by Dynatrol, Inc. The site is adjacent to the Hoquiam River, a fishery, however most of the surface drainage is toward the office building where there is a drain that drains away from the river. The northern portion of the site and the area in the ditch and culvert would drain into the river. The closest house is approximately 50 feet from the facility.

During the 1995 SHA Inspection no stained areas of soil were observed. However, sandblast grit was observed on the ground in the garage that is attached to the manufacturing building. There were empty 55-gallon drums stored in this area. Used acetone is distilled on site and reused. The still bottoms are used to fill the boat keels for weight. The paint room had over 300 1-gallon and 5-gallon containers of paint, epoxy, glue, acid wash, and thinner. The paint room is a structure with a wood floor located on old asphalt with gaps around the bottom of the building. The facility has a catch basin where they transfer chemicals. This is where they store 11 55-gallon drums of polyester resin, 29 55-gallon drums of resin, and 5 55-gallon drums of acetone. There is also a shelf unit located in the same area that has approximately 25 5-gallon containers of polyester based adhesive and styrene monomer. This area is inside the manufacturing building near the garage.



Analytical data from the 1991 site inspection indicated that there was soil contamination from both spilled materials and hazardous materials that had been stored on site including acetone. The soils data indicated a large number of constituents were present including copper, phenol, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene, acetone, styrene, and dimethylphthalate. PAHs were present above MTCA cleanup levels.

Special Considerations: (Include limitations in site file data, data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site)

Even though there was no containment to prevent migration to shallow ground water, it was not evaluated since there was no drinking water or irrigation uses within two miles of the site on the site, other than one well that was at least a mile away and across the Hoquiam River.

Since there were no visibly stained soil areas, the site was scored based on a minimal area of contaminated soil. The surface water route was scored based on the adjacent Hoquiam River fishery since there were no drinking water or irrigation uses. The air route was scored on particulates, even though acetone was present in soil samples since there are not likely to be any gaseous releases from the site at this time.

ROUTE SCORES:

Ground Water/Human:	NS		Overall Rank:	<u>4</u>
Surface Water/Human:	27.2	12.4		
Air/Human:		17.9		
Air/Environmental:		22.8		
Surface Water/Environmental:	33.9	32.1		

NS = Not Scored

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring:

Source: 1

Copper, fluoranthene, pyrene, benzo(a)pyrene, benzo(b)fluoranthene, and dimethylphthalate

Explain basis for choice of substances to be used in scoring.

These substances were all in onsite soils samples above background levels and where applicable above MTCA cleanup standards. These samples were collected during a 1991 site inspection.

List management units to be considered in scoring:

Source: 1,2

Contaminated surface soils.

Explain basis for choice of unit used in scoring.

There had not been removals of the soils since the 1991 inspection, so they are still available to migration.

2. AIR ROUTE

List those substances to be considered for scoring:

Source: 1

Copper, fluoranthene, pyrene, benzo(a)pyrene, benzo(b)fluoranthene, and dimethylphthalate

Explain basis for choice of substances to be used in scoring.

These substances were all in onsite soils samples above background levels and where applicable above MTCA cleanup standards. These samples were collected during a 1991 site inspection.

List management units to be considered in scoring:

Source: 1,2

Contaminated surface soils.

Explain basis for choice of unit used in scoring.

There had not been removals of the soils since the 1991 inspection, so they are still available to migration.

3. GROUND WATER ROUTE

List those substances to be considered for scoring:

Source: NA

There is no ground water usage so this route is not being scored.

Explain basis for choice of substances to be used in scoring.

List management units to be considered in scoring:

Source: NA

Explain basis for choice of unit used in scoring.

**WORKSHEET 4
SURFACE WATER ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Std.		Chronic Toxicity		Acute Toxicity		Carcinogenicity Potency		
	(µg/l)	Value	mg/kg/day	Value	mg/kg-bw	Value	WOE	Factor	Value
Copper	1,300	2	0.037	1	-	ND	-	-	ND
Fluoranthene	-	ND	0.04	1	2,000	3	-	-	ND
Pyrene	0.2	10	0.03	1	2,700	3	-	-	ND
Benzo(a)pyrene	0.2	10	-	ND	50	10	B2	12	7
Benzo(b)fluoranthene	0.2	10	-	ND	-	ND	B2	11.5	7
Dimethylphthalate	4	8	1	1	6,800	1	-	-	ND

Source: 1,3

Highest Value: 10

+ 2 Bonus Points?: +2

Value: 12

1.2 Environmental Toxicity Based on Fresh Water

Source: 1,3 Value: 10

It should be noted that the environmental toxicity is most likely overestimated since there is no fresh water acute criteria available for benzo(a)pyrene and the marine acute value is only 4.

Substance	Acute Criteria (µg/l)	Value	Non-human mammalian acute toxicity (mg/kg)	Value
Copper	18	6	-	ND
Fluoranthene	3,980	2	2,000	3
Pyrene	-	ND	2,700	3
Benzo(a)pyrene	-	ND	50	10
Benzo(b)fluoranthene	-	ND	ND	-
Dimethylphthalate	940	4	6,800	1

1.3 Substance Quantity

Source: 1-4 Value: 1

Explain basis: There were no stained areas visible during the SHA visit, so the default value of 1 is used for an unknown area.

2.0 MIGRATION POTENTIAL

2.1 Containment

Source: 4 Value: 4

unmaintained
(circled 4)

Explain basis: Spills, discharges, and contaminated soil - Contaminated soil at the surface with no run-on/runoff control.

2.2 Surface Soil Permeability: The soil is sandy silt with gravel

Source: 2,4-6 Value: 3

2.3 Total Annual Precipitation: 84.8 in/yr

Source: 7 Value: 5

- 2.4 Maximum 2-Year 24-Hr Precip: 3.4 inches Source: 4 Value: 3
- 2.5 Flood Plain: The site is in a 100-year flood plain Source: 11 Value: 2
- 2.6 Terrain Slope: <2% Source: 2,8 Value: 1

3.0 TARGETS

- 3.1 Distance to Surface Water: Adjacent (<1000 feet) Source: 1,2,8 Value: 10
- 3.2 Population Served within 2 miles: 0 Source: 9 Value: 0
- 3.3 Area Irrigated by Sources within 2 miles: 0 Source: 9 Value: 0
- 3.4 Distance to Fishery Resource: <1000 feet adjacent to site Source: 1,2,8,10 Value: 12
- 3.5 Distance to Sensitive Environment Source: 1,2,8,10 Value: 12

List: Adjacent - Hoquiam River fishery

- 4.0 RELEASE** Source: 1 Value: 0

Explain basis: 2-butanone was detected in river sediments. However, it was not detected in on site soils and is a common lab contaminant so no release was scored.

**WORKSHEET 5
AIR ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction - please review before scoring

1.2 Human Toxicity

Substance	Air Std.		Chronic Toxicity		Acute Toxicity		Carcinogenicity Potency		
	($\mu\text{g}/\text{m}^3$)	Value	mg/kg/day	Value	mg/m ³	Value	WOE	Factor	Value
Copper	3.3	9	-	ND	-	ND	-	-	ND
Fluoranthene	-	ND	-	ND	-	ND	-	-	ND
Pyrene	-	ND	-	ND	170	8	-	-	ND
Benzo(a)pyrene	0.0006	10	-	ND	-	ND	B2	-	ND
Benzo(b)fluoranthene	-	ND	-	ND	-	ND	B2	-	ND
Dimethylphthalate	16.7	7	-	ND	-	ND	-	-	ND

Source: 1,3

Highest Value: 10

+ 2 Bonus Points?: +2

Value: 12

1.3 Mobility

1.3.1 Gaseous Mobility N/A

Vapor Pressure:

Value:

Source:

1.3.2 Particulate Mobility

Soil Type: Silty sand with gravel

Erodibility: 56 tons/acre/yr

Climatic Factor: <1

Particulate Mobility Potential

Source: 4-6

Value: 1

1.4 Final Human Health Toxicity/Mobility Matrix:

Value: 6

1.5 Environmental Toxicity

Source: 1-4 Value: 8

Substance	Non-human mammalian acute toxicity (mg/kg)	Value	Mobility (Particulate)	Value
Copper	-	ND		
Fluoranthene	-	ND		
Pyrene	170	8	1	4
Benzo(a)pyrene	-	ND		
Benzo(b)fluoranthene	-	ND		
Dimethylphthalate	-	ND		

Environmental Toxicity Mobility Matrix

Source: 3,4 Value: 4

1.6 Substance Quantity

Source: 1,2 Value: 1

Explain basis: Unknown quantity of contaminated soil use default value of 1. (See Surface Water)

2.0 MIGRATION POTENTIAL

2.1 Containment

Source: 1,2 Value: 10

Explain basis: The surface soil is contaminated and is not covered.

3.0 TARGETS

3.1 Nearest Population: 50 feet

Source: 1 Value: 10

3.2 Nearest Sensitive Environment: 2,000 feet
List: Sunset Memorial Park

Source: 8 Value: 6

3.3 Population within 1/2 mile: square root 1,391 = 37

Source: 1 Value: 37

4.0 RELEASE

Explain basis: None documented

Source: - Value: 0

REFERENCES

1. Ecology and Environment, Inc. October 1991. Site Inspection Report for Little Hoquiam Boat Shop, Inc.
2. Soderberg, Patrick. Science Applications International Corp. (SAIC) Site inspection on April 14, 1995.
3. Washington Department of Ecology. January 1992. Toxicology Database for Use in Washington Ranking Method Scoring. Publication No. 92-37.
4. Washington Department of Ecology. 1990. Washington Ranking Method Scoring Manual. Revised April 1992. Publication No. 90-14.
5. Grays Harbor County Soil Survey.
6. Water Well Reports filed with Department of Ecology:
 - Gull Hoquiam, Owner. Grays Harbor County, SE 1/4, SW 1/4, Sec. 2, T17N, R10W. Completed 6/13/94. Depth of completed monitoring well-19 feet.
 - Former Chevron. Grays Harbor County, NE 1/4, SE 1/4, Sec. 2, T17N, R10W. Completed 4/19/92. Depth of completed monitoring well-18.5 feet.
 - Former Chevron. Grays Harbor County, NE 1/4, SE 1/4, Sec. 2, T17N, R10W. Completed 4/29/92. Depth of completed monitoring well-15 feet.
7. Washington State Cooperative Extension Service. 1968. Washington Climate for Grays Harbor County.
8. U.S. Geological Survey. Photorevised 1983. Hoquiam Quadrangle Washington - Grays Harbor Co. 7.5 Minute Series (Topographic).
9. Water Rights Information System (WRIS) Database. 1995. Washington Department of Ecology.
10. Washington Department of Fisheries. A Catalog of Streams and Salmon Utilization, Vol 1&2.
11. Hoquiam Planning Department (360) 532-5700. Effective June 15, 1979. Community Panel Number 5300610005B.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

SITE HAZARD ASSESSMENT DATA COLLECTION SUMMARY SHEETS
FOR
WASHINGTON RANKING METHOD

SURFACE WATER, AIR AND GROUND WATER ROUTES ONLY

Site Name: Little Hoquiam Boat Shop #2

Location: 825 Queens Ave. Hoquiam, WA 98550

Site owner/operator: Howard Moe

Address: 825 Queens Ave. Hoquiam, WA 98550

Any other known PLP(s): ROI Group

Address: 9 Campus Drive Parsippany, NJ 07054

Other PLP: Dyanatrol, Inc.

Site Number: S-14-6108-000

Date(s) of field site hazard assessment: April 14, 1995

Samples or field measurements: None
_____soil _____surface water
_____air _____ground water

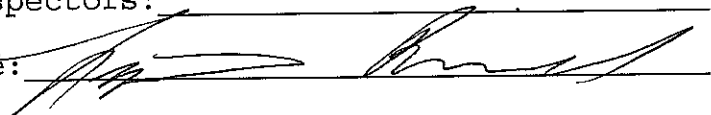
(Attach copies of pertinent sampling and analytical data, as well as all other supporting documentation.)

Photographs: Yes

Weather: Clear and sunny

Lead inspector: Patrick Soderberg and Lynn Brimmer

Other inspectors: _____

Signature: 

rev. 11/13/91

PART I: Hazardous Substances

NOTE: Page numbers by "route" (e.g. SW-2, A-13) shown in parentheses throughout this checklist refer to the WARM Scoring Manual. WK- numbers refer to pages of the new scoring sheets (not those in the scoring manual). These are presented in Appendix D.

A. Hazardous substances

List specific hazardous substances, known or suspected (check k or s), currently, or that have been previously (check c or p), at the site property (WK-2,3). Give an estimate, if available, of the **quantity** (not concentration) of each:

<u>Hazardous Substance</u>	<u>K</u>	<u>S</u>	<u>C</u>	<u>P</u>	<u>Quantity</u>	<u>Units</u>
1. Copper				(K,P)	unknown	
2. Acetone				(K,P)	unknown	
3. Styrene				(K,P)	unknown	
4. Phenol				(K,P)	unknown	
5. Dimethylphthalate				(K,P)	unknown	
6. Fluoranthene				(K,P)	unknown	
7. Pyrene				(K,P)	unknown	
8. Benzo(a)anthracene				(K,P)	unknown	
9. Chrysene				(K,P)	unknown	
10. Benzo(b)fluoranthene				(K,P)	unknown	
11. Benzo(k)fluoranthene				(K,P)	unknown	
12. Benzo(a)pyrene				(K,P)	unknown	
13. Indeno(1,2,3-cd)pyrene				(K,P)	unknown	
14. Benzo(g,h,i)perylene				(K,P)	unknown	

(Ref 1)

By which routes are these available? (WK-2,3)

<u>Number(from above)</u>	<u>Surface Water</u>	<u>Air</u>	<u>Groundwater</u>
1 - 14	X	X	X

(Ref 1,2)

B. SOURCES

Check those known or observed (WK-3):

- drums or other containers
 electrical transformers
 above ground tanks
 below ground tanks
 ponds, pits, or other impoundments

_____ pipelines (other than water, sewer, or gas)
_____ floor drains
 X exterior drains for rainwater, surface waters,
_____ spills, etc.
_____ other? Identify: _____

C. INDICATORS

Check those known or observed:

_____ discolored soils
_____ disturbed soils
_____ discolored standing water
_____ unusual or noxious odors
_____ sick or dead vegetation
_____ groundwater monitoring wells
 X other? Identify: The floor of the garage on the
side of the Manufacturing Building was covered with sand
blasting grit.

If any are checked in B or C, explain details including
exact locations (identify location on a map or drawing).

Additional information:

PART II: Releases

A. KNOWN OR SUSPECTED RELEASES

List those hazardous substances identified (by number) in I.A. which are known, or suspected, to have been released (WK-2,3):

Substance (#) Quant.Released Units Medium Released to

None potential for surface water and air releases

Additional information/reference? (Ref 1,2)

B. SOURCES AND IMPACTS (Pages SW-5,6; A-9,10; GW-6,7)

List those hazardous substances identified (by number) in II.A. and identify the source and impact:

<u>Substance No.</u>	<u>Source</u>	<u>Impacts/Affects to</u>	<u>Area</u>
2	Acetone Tank	SW, GW, Air	unknown
1-14	Soil	SW, GW, Air	unknown
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Additional information/reference? (Ref 1,2) _____

III. Migration Potential

A. CONTAINMENT--LANDFILLS (SW-7; A-12; GW-8,9)

Present? No How many?

Check those that apply:

1. An engineered, maintained run-on/run-off control system
2. An engineered/maintained cover without ponding
3. Unmaintained run-on/runoff control system or cover
4. No run-on/runoff control or no cover
5. Uncontaminated soil cover greater than 6" thick
6. Uncontaminated soil cover less than 6" thick
7. Contaminated soil used as cover
8. A functioning vapor collection system
9. Mixing or agitation used
10. No liner
11. Single clay or compacted soil liner
(permeability cm/sec)
12. Single synthetic liner (permeability cm/sec)
13. Double liner system (permeability cm/sec)
14. Leachate collection system, maintained and functioning
15. Leachate collection system, unknown condition or not functioning
16. Liquid wastes may have been disposed of
17. Liquid wastes were disposed of in landfill
18. Reliable evidence no liquid wastes were disposed

Additional
comments: _____

B. CONTAINMENT--SURFACE IMPOUNDMENTS

(SW-7,8; A-13;
GW-10,11)

Present No How many?

Check those that apply:

1. The dike is apparently sound
2. The dike is regularly inspected and maintained
3. There is evidence of failure, erosion, slumping,
or release of contents
4. Two feet of freeboard maintained automatically
5. The freeboard is manually controlled so that there
is at least 2 feet of freeboard
6. Evidence of insufficient freeboard (<2 ft.)
7. A maintained cover
8. Unmaintained cover, no cover
9. No liner
10. Single synthetic liner
11. Single clay or compacted soil liner
12. Double liner
13. Working leak detection system
14. Evidence of loss of fluid (other than by
evaporation)

Additional
comments: _____

C. CONTAINMENT--DRUMS AND SMALL CONTAINERS

(SW-9; A-11;
GW-11)

Present Yes How many? >300

Check those that apply:

1. No functional containment
2. There is secondary containment capacity for the total volume of containers
3. There is secondary containment with capacity for at least 110% of volume of the largest container
4. The secondary containment is less than 110% of the volume of the largest container
5. The containers are stored in single, or double layers on pallets, or in racks
6. The containers are stored in an unstable manner
7. Some containers are open or have visible liquid
8. Some containers are leaking
9. Containers are protected from weather
10. Containers showing deterioration
11. Containment surface is impervious
12. Containment surface has cracks or semi-permeable
13. No base material/permeable base such as gravel/base materials unknown
13. Containment is regularly inspected and maintained
14. Evidence of containment failure

Additional comments: These containers are cans of product material. Waste material is fully contained in a catch basin inside the manufacturing building.

D. CONTAINMENT--STORAGE TANKS (SW-9; A-11; GW-11)

Present? ___ Yes ___ How many? ___ 1 ___

Check those that apply:

1. ___ Secondary containment with a capacity of 110% of the volume of the tanks
2. ___ Secondary containment at least 50% of the volume of all tanks
3. ___ Containment system with capacity for at least 10% of volume of containers or tanks
4. ___ No containment, or less than 10% capacity
5. ___ Tank volumes maintained
6. ___ Automatic controls used for volume maintenance
7. ___ Tanks are covered
8. ___ Uncovered tanks have aeration, mixing, or heating of tank contents
9. ___ Containers sealed, protected
10. ___ Containers sealed, not protected
11. ___ Containers deteriorated
12. ___ Containers leaking
13. Record the #s of above which apply only to above ground tank _____
14. Record the #s of above which apply only to below ground tanks _____
15. Record the #s of above which apply to both above and below ground tanks: _____

Additional comments: The tank is empty and no longer used.
(Ref 1,2)

E. CONTAINMENT--WASTE PILES (SW-10; A-13; GW-12,13)

Present? No How many?

Check those that apply:

1. Waste pile is outside, no protecting structure
2. Waste pile is outside, in open structure with roof
3. Waste pile is outside, with partial or unmaintained cover
4. Waste pile is outdoors, with maintained cover
5. No cover is present
6. Waste pile is fully enclosed, intact building
7. There is an engineered run-on/run-off control
8. The run-on/run-off is maintained
9. Run-on/runoff control present, unknown condition
10. No run-on/runoff control system present, or unknown if present
11. Liner or base present; Not present.
12. Single clay or compacted soil liner
13. Single synthetic liner
14. Double liner
15. Maintained, functioning leachate collection system
16. Leachate collection system; Unknown condition; or Not functioning.

Additional comments Debris (Drums and Scrap Metal)

F. CONTAINMENT--SPILLS, DISCHARGES, AND CONTAMINATED SOIL
(SW-10,11; A-13,14; GW-13)

Check those that apply:

1. Spill, discharge, or contaminated soil only in the subsurface at the site--including dry wells, drain fields, leaking underground storage tanks
2. Soil contamination that has been covered partially excavated and filled with at least 6 inches of clean soil
3. Soil contamination that has been covered or partially excavated and filled with less than 6 inches of clean soil
4. Uncontaminated soil cover >2 feet thick
5. No cover; or Cover <2 feet, but > 6" thick
6. Spill, discharge, or contaminated soil present at the surface in an area with maintained run-on/run-off control
7. Spill, discharge, or contaminated soil present at the surface in an area with unmaintained run-on/run-off controls?
8. Spill, discharge, or contaminated soil present at the surface with no run-on/run-off control or unknown controls?
9. Contaminated soil has been disturbed or excavated and stored above grade
10. A functioning vapor recovery system
11. No vapor recovery system

Additional comments: Contaminated soils were documented during the 1991 site inspection and have not been removed. There were no visible stains during the inspection. (Ref 1,2)

G. CONTAINMENT--SITE CHARACTERISTICS
(SW-11,12; A-6; GW-14; WK-5,6,8)

1. How would you evaluate the site soils? Circle predominant textural class.

_____ Sand, gravel, sandy gravel, well-graded sand, well-graded gravel, gravelly sand, gravelly sand loam, silty sandy loam?

 X Poorly-graded sands with fines, silt-sand mixtures, loam, silt loam, sandy silt loam, clayey sand, clay sand loam?

_____ Clayey sands, sand-clay mixtures, clayey gravels, clay-sand-gravel mixtures, inorganic silts, clayey silt loam, silty clay loam, porous rock outcrop, sandy silty clay, sandy clay loam?

_____ Clay (organic and inorganic), clay loam, rock outcrop, peat, peaty clay?

Is the above based on personal observation, lab analysis, or professional judgement by a soil expert? (circle)
Sandy silty soils with gravel were observed during the inspection. Udorthents, Level from Soil Survey (Ref 2,5)

2. Total annual precipitation= 84.8 in./yr (SW-12; WK-5)
(Ref 7)
3. Max. 2-yr/24-hr precip.= 3.4 inches (SW-14; WK-5)
(Ref 4)
4. Net precipitation (see 2.2, GW-13)= 57.6 in. (WK-9)
(Ref 7)
5. Is the site not in a flood plain? _____ (SW-14; WK-5)
Is the site in a 500 year flood plain? _____
Is the site in a 100 year flood plain? X
(Ref 11)
6. What is the terrain slope to the nearest surface water?
<2% (SW-14,15; WK-6) (Ref 2,8)
7. What is the subsurface hydraulic conductivity? $>10^{-3}$
cm/sec (GW-14; WK-9) (sand and fill) (Sources 4 & 6)
8. What is the vertical depth from the deepest point of known contamination to ground water? 3 feet (GW-15; WK-9) (Ref 6)

Additional
 comments: _____

IV. Targets

A. DISTANCE TO SURFACE WATER (SW-16; WK-6)

1. What surface water(s) (lake, stream, river, pond, bay, etc.) is/are within 10,000 feet (downgradient) of the site?

<u>Name</u>	<u>Dist.-ft.</u>	<u>Obs.</u>	<u>Meas.</u>
Hoquiam River	0 ft	_____	<u> X </u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(Ref 1,2,8)

None? _____ .Comments

2. What drinking water intakes are within 2 miles of the site? (all lake intakes, river intakes downstream only) (SW-12; WK-6)

None? X

(Ref 9)

<u>Location</u>	<u>Pop. Served</u>	<u>Source</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. How much acreage (anywhere) is irrigated by surface water intakes (downstream only) or wells (anywhere) within 2 miles of the site? (SW-16; GW-18; WK-6,9)

None? X

(Ref 9)

SURFACE WATER: Acres _____ (1600 acres max.)

Source(s) _____;

GROUNDWATER: Acres _____ (4500 acres max.)

Source(s) _____

4. What is the distance to the nearest fishery resource (total of overland distance plus downgradient distance)? (SW-17; WK-6)

Over 10,000 feet? _____ Distance if less than 10,000 feet? 0 _____ ft. (Ref 1,2,8)

5. What are the names of, and the distances to, the nearest sensitive environments (total of overland distances plus downgradient distances)? (SW-18; A-15; WK-6)

Over 10,000 feet? _____ Names and distances if less than 10,000 feet: 0 feet Hoquiam River Fishery
2,000 feet to Sunset Memorial Park _____

(Ref 1,8)

6. Is the aquifer a federally-designated sole source aquifer? No _____ (GW-16; WK-9)

7. Is the ground water used for: (GW-16; WK-9)

_____ private supply
_____ public supply
_____ irrigation of human food crops or livestock
_____ non-food (human) vegetation
_____ not used due to natural contaminants
X _____ ground water not used, but usable

(Ref 1,9)

8. Distance to nearest drinking water well? _____ >10,000 feet (GW-17; WK-9)

(Ref 1,9)

9. Is there an alternate source available to groundwater for private or public water supply? (WK-9) Yes _____
(Ref 1,9)

10. Population served by drinking water wells within 2 miles? 0 _____ (GW-17; WK-9)
(Ref 1,9)

11. Distance to the nearest population? 50 feet
(A-15, 16; WK-8) (Ref 1,8)

12. Population within one-half mile radius? 1391
(A-16; WK-8) (Ref 1)

Additional comments (e.g. potential for natural resource
damage, or other ecological concerns): _____

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1. Ecology and Environment, Inc. October 1991. Site Inspection Report for Little Hoquiam Boat Shop, Inc.
2. Soderberg, Patrick. Science Applications International Corp. (SAIC) Site inspection on April 14, 1995.
3. Washington Department of Ecology. January 1992. Toxicology Database for Use in Washington Ranking Method Scoring. Publication No. 92-37.
4. Washington Department of Ecology. 1990. Washington Ranking Method Scoring Manual. Revised April 1992. Publication No. 90-14.
5. Grays Harbor County Soil Survey.
6. Water Well Reports filed with Department of Ecology:
 - Gull Hoquiam, Owner. Grays Harbor County, SE 1/4, SW 1/4, Sec. 2, T17N, R10W. Completed 6/13/94. Depth of completed monitoring well-19 feet.
 - Former Chevron. Grays Harbor County, NE 1/4, SE 1/4, Sec. 2, T17N, R10W. Completed 4/19/92. Depth of completed monitoring well-18.5 feet.
 - Former Chevron. Grays Harbor County, NE 1/4, SE 1/4, Sec. 2, T17N, R10W. Completed 4/29/92. Depth of completed monitoring well-15 feet.
7. Washington State Cooperative Extension Service. 1968. Washington Climate for Grays Harbor County.
8. U.S. Geological Survey. Photorevised 1983. Hoquiam Quadrangle Washington - Grays Harbor Co. 7.5 Minute Series (Topographic).
9. Water Rights Information System (WRIS) Database. 1995. Washington Department of Ecology.
10. Washington Department of Fisheries. A Catalog of Streams and Salmon Utilization, Vol 1&2.
11. Hoquiam Planning Department (360) 532-5700. Effective June 15, 1979. Community Panel Number 5300610005B.

Feb 1996

CSD 2.06

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name: Little Hoquiam Boat Shop #2

Site Location: (City, County, or Section/Township/Range)
825 Queens Ave. Hoquiam, WA 98550 Grays Harbor County
Section 2, Township 17N, Range 10W

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

The Little Hoquiam Boat Shop #2 housed a shake mill, a door manufacturing company, and a chair manufacturing company for 40 to 50 years prior to becoming a boat manufacturing shop in 1982. In October of 1987 the ROI Group purchased the facility and later filed for bankruptcy in December 1990. Since 1992 when Howard Moe purchased the site, the facility has been used for manufacturing boats. Howard Moe also owned the shop prior to 1987. The land is owned by Dynatrol, Inc. The site is adjacent to the Hoquiam River, a fishery, however most of the surface drainage is toward the office building where there is a drain that drains away from the river. The northern portion of the site and the area in the ditch and culvert would drain into the river. The closest house is approximately 50 feet from the facility.

During the 1995 SHA Inspection no stained areas of soil were observed. However, sandblast grit was observed on the ground in the garage that is attached to the manufacturing building. There were empty 55-gallon drums stored in this area. Used acetone is distilled on site and reused. The still bottoms are used to fill the boat keels for weight. The paint room had over 300 1-gallon and 5-gallon containers of paint, epoxy, glue, acid wash, and thinner. The paint room is a structure with a wood floor located on old asphalt with gaps around the bottom of the building. The facility has a catch basin where they transfer chemicals. This is where they store 11 55-gallon drums of polyester resin, 29 55-gallon drums of resin, and 5 55-gallon drums of acetone. There is also a shelf unit located in the same area that has approximately 25 5-gallon containers of polyester based adhesive and styrene monomer. This area is inside the manufacturing building near the garage.

Analytical data from the 1991 site inspection indicated that there was soil contamination from both spilled materials and hazardous materials that had been stored on site including acetone. The soils data indicated a large number of constituents were present including copper, phenol, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene, acetone, styrene, and dimethylphthalate. PAHs were present above MTCA cleanup levels.

Special Considerations: (Include limitations in site file data, data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site)

Even though there was no containment to prevent migration to shallow ground water, it was not evaluated since there was no drinking water or irrigation uses within two miles of the site on the site, other than one well that was at least a mile away and across the Hoquiam River.

Since there were no visibly stained soil areas, the site was scored based on a minimal area of contaminated soil. The surface water route was scored based on the adjacent Hoquiam River fishery since there were no drinking water or irrigation uses. The air route was scored on particulates, even though acetone was present in soil samples since there are not likely to be any gaseous releases from the site at this time.

Surface Water/Human Health:	<u>12.4</u>	Surface Water/Environ.:	<u>32.1</u>
Air/Human Health:	<u>17.9</u>	Air/Environmental:	<u>22.8</u>
Ground Water/Human Health:	<u>NS</u>		

OVERALL RANK: 4

**WORKSHEET 2
ROUTE DOCUMENTATION**

1. SURFACE WATER ROUTE

List those substances to be considered for scoring:

Source: 1

Copper, fluoranthene, pyrene, benzo(a)pyrene, benzo(b)fluoranthene, and dimethylphthalate

Explain basis for choice of substances to be used in scoring.

These substances were all in onsite soils samples above background levels and where applicable above MTCA cleanup standards. These samples were collected during a 1991 site inspection.

List management units to be considered in scoring:

Source: 1,2

Contaminated surface soils.

Explain basis for choice of unit used in scoring.

There had not been removals of the soils since the 1991 inspection, so they are still available to migration.

2. AIR ROUTE

List those substances to be considered for scoring:

Source: 1

Copper, fluoranthene, pyrene, benzo(a)pyrene, benzo(b)fluoranthene, and dimethylphthalate

Explain basis for choice of substances to be used in scoring.

These substances were all in onsite soils samples above background levels and where applicable above MTCA cleanup standards. These samples were collected during a 1991 site inspection.

List management units to be considered in scoring:

Source: 1,2

Contaminated surface soils.

Explain basis for choice of unit used in scoring.

There had not been removals of the soils since the 1991 inspection, so they are still available to migration.

3. GROUND WATER ROUTE

List those substances to be considered for scoring:

Source: NA

There is no ground water usage so this route is not being scored.

Explain basis for choice of substances to be used in scoring.

List management units to be considered in scoring:

Source: NA

Explain basis for choice of unit used in scoring.

**WORKSHEET 4
SURFACE WATER ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Std.		Chronic Toxicity		Acute Toxicity		Carcinogenicity Potency		
	(µg/l)	Value	mg/kg/day	Value	mg/kg-bw	Value	WOE	Factor	Value
Copper	1,300	2	0.037	1	-	ND	-	-	ND
Fluoranthene	-	ND	0.04	1	2,000	3	-	-	ND
Pyrene	0.2	10	0.03	1	2,700	3	-	-	ND
Benzo(a)pyrene	0.2	10	-	ND	50	10	B2	12	7
Benzo(b)fluoranthene	0.2	10	-	ND	-	ND	B2	11.5	7
Dimethylphthalate	4	8	1	1	6,800	1	-	-	ND

Source: 1,3
 Highest Value: 10
 +2 Bonus Points?: +2
 Value: 12 ✓

1.2 Environmental Toxicity Based on Fresh Water

Source: 1,3 Value: 10 ✓

It should be noted that the environmental toxicity is most likely overestimated since there is no fresh water acute criteria available for benzo(a)pyrene and the marine acute value is only 4.

Substance	Acute Criteria (µg/l)	Value	Non-human mammalian acute toxicity (mg/kg)	Value
Copper	18	6	-	ND
Fluoranthene	3,980	2	2,000	3
Pyrene	-	ND	2,700	3
Benzo(a)pyrene	-	ND	50	10
Benzo(b)fluoranthene	-	ND	ND	-
Dimethylphthalate	940	4	6,800	1

1.3 Substance Quantity

Source: 1-4 Value: 1 ✓

Explain basis: There were no stained areas visible during the SHA visit, so the default value of 1 is used for an unknown area.

2.0 MIGRATION POTENTIAL

2.1 Containment

Source: 4 Value: 4 ✓

Explain basis: Spill, discharge, or contaminated soil at the surface with unmaintained or ineffectively maintained run-on/runoff control

2.2 Surface Soil Permeability: The soil is sandy silt with gravel

Source: 2,4-6 Value: 3 ✓

2.3 Total Annual Precipitation: 84.8 in/yr

Source: 7 Value: 5 ✓

- 2.4 Maximum 2-Year 24-Hr Precip on: 3.4 inches Source: 4 Value: 3
- 2.5 Flood Plain: The site is in a 100-year flood plain Source: 11 Value: 2
- 2.6 Terrain Slope: <2% Source: 2,8 Value: 1
- 3.0 TARGETS
- 3.1 Distance to Surface Water: Adjacent (<1000 feet) Source: 1,2,8 Value: 10
- 3.2 Population Served within 2 miles: 0 Source: 9 Value: 0
- 3.3 Area Irrigated by Sources within 2 miles: 0 Source: 9 Value: 0
- 3.4 Distance to Fishery Resource: <1000 feet adjacent to site Source: 1,2,8,10 Value: 12
- 3.5 Distance to Sensitive Environment Source: 1,2,8,10 Value: 12
- List: Adjacent - Hoquiam River fishery
- 4.0 RELEASE Source: 1 Value: 0

Explain basis: 2-butanone was detected in river sediments. However, it was not detected in on site soils and is a common lab contaminant so no release was scored.

**WORKSHEET 5
AIR ROUTE**

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction - please review before scoring

1.2 Human Toxicity

Substance	Air Std.		Chronic Toxicity		Acute Toxicity		Carcinogenicity Potency		
	($\mu\text{g}/\text{m}^3$)	Value	mg/kg/day	Value	mg/m ³	Value	WOE	Factor	Value
Copper	3.3	9	-	ND	-	ND	-	-	ND
Fluoranthene	-	ND	-	ND	-	ND	-	-	ND
Pyrene	-	ND	-	ND	170	8	-	-	ND
Benzo(a)pyrene	0.0006	10	-	ND	-	ND	B2	-	ND
Benzo(b)fluoranthene	-	ND	-	ND	-	ND	B2	-	ND
Dimethylphthalate	16.7	7	-	ND	-	ND	-	-	ND

Source: 1,3

Highest Value: 10

+ 2 Bonus Points?: +2

Value: 12

1.3 Mobility

1.3.1 Gaseous Mobility N/A

Vapor Pressure:

Value:

Source:

1.3.2 Particulate Mobility

Soil Type: Silty sand with gravel

Erodibility: 56 tons/acre/yr

Climatic Factor: <1

Particulate Mobility Potential

Source: 4-6

Value: 1

Value: 6 ✓

1.4 Final Human Health Toxicity/Mobility Matrix:

1.5 Environmental Toxicity

Source: 1-4 Value: 8 ✓

Substance	Non-human mammalian acute toxicity (mg/kg)	Value	Mobility (Particulate)	Value
Copper	-	ND		
Fluoranthene	-	ND		
Pyrene	170	8	1	4
Benzo(a)pyrene	-	ND		
Benzo(b)fluoranthene	-	ND		
Dimethylphthalate	-	ND		

Environmental Toxicity Mobility Matrix

Source: 3,4 Value: 4 ✓

1.6 Substance Quantity

Source: 1,2 Value: 1 ✓

Explain basis: Unknown quantity of contaminated soil use default value of 1. (See Surface Water)

2.0 MIGRATION POTENTIAL

2.1 Containment

Source: 1.2 Value: 10

Explain basis: The surface soil is contaminated and is not covered.

3.0 TARGETS

3.1 Nearest Population: 50 feet

Source: 1 Value: 10

3.2 Nearest Sensitive Environment: 2,000 feet
List: Sunset Memorial Park

Source: 8 Value: 6

3.3 Population within 1/2 mile: square root 1,391 = 37

Source: 1 Value: 37

4.0 RELEASE

Explain basis: None documented

Source: - Value: 0

REFERENCES

1. Ecology and Environment, Inc. October 1991. Site Inspection Report for Little Hoquiam Boat Shop, Inc.
2. Soderberg, Patrick. Science Applications International Corp. (SAIC) Site inspection on April 14, 1995.
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7. Washington State Cooperative Extension Service. 1968. Washington Climate for Grays Harbor County.
8. U.S. Geological Survey. Photorevised 1983. Hoquiam Quadrangle Washington - Grays Harbor Co. 7.5 Minute Series (Topographic).
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