Weyerhaeuser

7001 396th Southeast
Snoqualmie, Washington 98065
Tel (206) 888 2511

June 15, 1992

Mr. Joe Hickey
Contaminated Site Inspector
Washington State Department of Ecology
North West Region Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

RE: Snoqualmie Petroleum Contamination

Dear Mr. Hickey:

The attached technical memorandum 12, is a continuing follow-up report to the initial release report sent to you on September 6, 1989, plus reports sent on September 6, 1989, February 27, 1990, and April 22, 1991.

Weyerhaeuser will continue to access the site with its monitoring program under contract with Shannon and Wilson.

Very truly yours,

WEYERHAEUSER COMPANY
Cascade Operations

Obe M. Healea, Jr.
Environmental/Project Manager

OMH:efm

cc: Mr. Ken Johnson - CH1K31
Mr. Robert Colombo - Shannon and Wilson, Inc.

SR 6/17/92 BAF

Interim Soil Gw

Weyerhaeuser Snoqualmie? #1583

T-1276-01

SHANNON & WILSON, INC.
Geotechnical Consultants
Engineering and Applied Geosciences

Over 35 Years of Excellence

400 North 34th Street, Suite 100 • P.O. Box 300303 • Seattle, WA 98103 • (206) 632-8020 • Fax: (206) 633-6777

May 1, 1992

The Weyerhaeuser Company
7001 396th Southeast
Snoqualmie, Washington 98065

Attn: Mr. Max Healea, Jr.
Environmental Project Manager

RE: TECHNICAL MEMORANDUM 12, GROUNDWATER QUALITY DATA; SECOND BI-ANNUAL SAMPLING EVENT OF MONITORING WELLS IN AREAS No. 1 AND 2

Enclosed you will find Shannon and Wilson's, Inc. (S&W's) Technical Memorandum 12 which contains the results of the second, bi-annual sampling event of the 11 groundwater monitoring wells located in Areas No. 1 and 2 within The Weyerhaeuser Cascade Division's, Snoqualmie, Washington facility.

1.0 Authorization

Services are provided in accordance with our contract dated 06/19/91 (WEYCO PO. No. 11-42540).

2.0 Results

In Table 1, page 1 of 2, presents groundwater quality data from the sampling event of July 15 through July 16, 1991; page 2 of 2 tabulates the groundwater quality data from the sampling event of March 4 through March 5, 1992.

Concentrations of Benzene, Toluene, Ethylbenzene, and Xylenes (BTE&X) exceed Washington State Department of Ecology (WDOE) Model Toxic Control Act (MTCA) Method "A" levels in Monitoring Well (MW) 003 in Area No. 1 (former fuel storage facility).

Concentrations of Total Extractable Petroleum Hydrocarbons (TEPH) exceed regulatory levels in MW-003 and are approaching regulatory levels of concern in MW-005 in Area No. 1.

Total lead concentrations exceed MTCA Method "A" levels in five monitoring wells in Area No. 1, (MW) 001, 003, 004, 005, and 006. Area No. 2's monitoring wells 002 and 003 also exceed the total lead cleanup level of 5 parts per billion.

3.0 Conclusions

Reported concentrations of total lead, when compared to concentration of lead in background wells at the sites, are most likely indicative of expected "natural" background levels and are not the direct result of spilled petroleum products which contain lead.

4.0 Closure

We suggest that a copy of this technical memorandum be forwarded to the appropriate department within the WDOE for their review and comment. We will again sample the sites in October, 1992.

If you have any questions or comments regarding this material, please contact me at (206) 632-8020.

Respectfully,

SHANNON AND WILSON, INC.

Kimberly A. L. Fenske
Engineer

Robert Colombo
Environmental Project Manager

4/30

FRANK W. PITA
STATE OF WASHINGTON
17522
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES 5/6/

Frank W. Pita, P.E., P.G.

Enclosures As Noted

TABLE 1; Page 1 of 2.
SNOQUALMIE FORMER UNDERGROUND FUEL AND ABOVE GROUND ROAD OIL STORAGE FACILITIES
FIRST BI-ANNUAL SAMPLING EVENT, 07/91
GROUNDWATER SAMPLE RESULTS (1)

SAMPLE NUMBER Sampled 07-15-91 through 07-16-91	BENZENE (ppb) (2)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	o-XYLENE (ppb)	m,p-XYLENE (3) (ppb)	TEPH (ppm) (4)	TOTAL LEAD (ppb)
WEY-MW001-001-373-W-0						0.12	24
WEY-MW001-001-374-W-0	1<	1<	1<	1<	1<		
WEY-MW001-002-370-W-0						0.49	21
WEY-MW001-002-371-W-0	1<	1<	1<	1<			
WEY-MW001-003-361-W-1						1.7	64
WEY-MW001-003-362-W-1	700	<10	670	430	160		
WEY-MW001-003-358-W-0						1.5	58
WEY-MW001-003-359-W-0	640	200	1700	350	710		
WEY-MW001-004-364-W-0						0.59	11
WEY-MW001-004-365-W-0	1<	1<	1<	1<	1<		
WEY-MW001-005-366-W-0						1.1	18
WEY-MW001-005-368-W-0	1<	1<	2.3	1<	2.4		
WEY-MW001-006-391-W-0						0.75	<5
WEY-MW001-006-392-W-0	1<	1<	1<	1<	1<		
WEY-MW001-007-376-W-0						0.18	7
WEY-MW001-007-377-W-0	1<	1<	1<	1<	1<		
WEY-MW001-007-393-W-4	1<	1<	1<	1<	1<		
WEY-MW002-001-379-W-0						0.37	22
WEY-MW002-001-380-W-0	1<	1<	1<	1<	1<		
WEY-MW002-002-388-W-0						0.08	<5
WEY-MW002-002-389-W-0	1<	1<	1<	1<	1<		
WEY-MW002-003-382-W-0						0.42	53
WEY-MW002-003-383-W-0	1<	1<	1<	1<	1<		
WEY-MW002-004-385-W-0						0.27	7
WEY-MW002-004-385-W-0	1<	1<	1<	1<	1<		
REGULATORY LEVELS	5.0	40	30	20	20	1.0	5.0

< = Below detection limit, detection limit reported.

NOTES

1) As reported by Alden Analytical Laboratories, Inc. on 07-30-91.
2) Parts Per Billion (ppb).
3) m-Xylene and p-Xylene cannot be separated and are reported here as a total of the the two isomers.
4) Parts Per Million (ppm).
5) Original laboratory report and correspondence available at the Shannon and Wilson (S&W) Seattle office.
6) Benzene maximum concentrations in water is 5 ppb; (WDOE, Model Toxics Control Act (MTCA), Chapter 173-340 WAC, 02-28-91, Method A - Cleanup Levels - Groundwater.
7) Toluene maximum concentrations in water is 40 ppb; (WDOE, MTCA Method A Cleanup Levels - Groundwater).
8) Ethylbenzene maximum concentrations in water is 30 ppb; (WDOE, MTCA Method A Cleanup Level - Groundwater).
9) Xylenes maximum concentrations in water is 20 ppb; (WDOE, MTCA Method A Cleanup Level - Groundwater).
10) Benzene, toluene, ethylbenzene and xylene concentrations determined by EPA Method 8240.
11) TEPH is the abbreviation for Total Extractable Petroleum Hydrocarbons as determined by EPA Method 8015.
12) TEPH maximum concentrations in water is 1 ppm; (WDOE, MTCA Method A Cleanup Level - Groundwater).
13) Total lead as determined by EPA Method 7421.
14) Total lead maximum concentration in groundwater is 5 ppb.
15) Sample identification scheme: WEY-MW001-002-373-W-0 represents a WEYCO project (WEY), Area No. 1 (MW001), Monitoring Well 002 (002), Sample No. 373 (373), Groundwater (W), and: (O) represents a regular environmental sample (1) is a duplicate sample for QA/QC, (4) is a QA/QC rinsate sample of the sampling device.
16) All groundwater samples obtained with disposable VOSS Technology bailers.

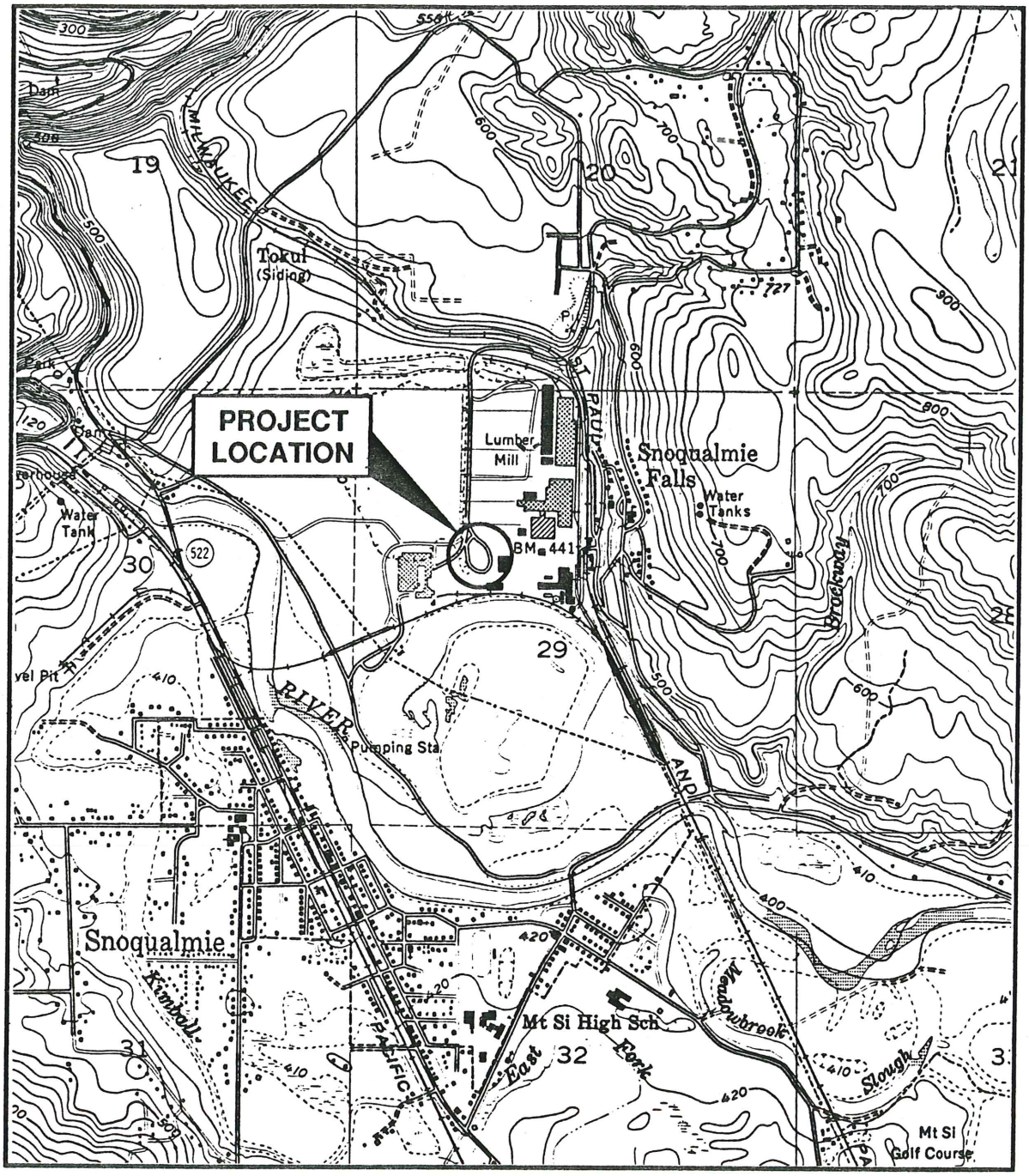
TABLE 1; Page 2 of 2
SNOQUALMIE FORMER UNDERGROUND FUEL AND ABOVE GROUND ROAD OIL STORAGE FACILITIES
SECOND BI-ANNUAL SAMPLING EVENT, 03/92
GROUNDWATER SAMPLE RESULTS (1)

SAMPLE NUMBER Sampled 03-04-92 through 03-05-92	BENZENE (ppb) (2)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	o-XYLENE (ppb)	m,p-XYLENE (3) (ppb)	TEPH (ppm) (4)	TOTAL LEAD (ppb)
WEY-MW001-001-407-W-0	<1.0	<1.0	<1.0	<1.0	<1.0	0.26	6
WEY-MW001-002-408-W-0	<1.0	<1.0	<1.0	<1.0	<1.0	0.61	ND
WEY-MW001-003-409-W-0	1200	1400	370	260	1300	4.6	6
WEY-MW001-003-410-W-1	1400	1600	460	290	1500	4.0	7
WEY-MW001-004-406-W-0	<1.0	<1.0	<1.0	<1.0	<1.0	0.69	18
WEY-MW001-005-403-W-0	<1.0	<1.0	<1.0	<1.0	<1.0	0.98	7
WEY-MW001-006-404-W-0	<1.0	<1.0	<1.0	<1.0	<1.0	0.67	6
WEY-MW001-007-405-W-0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.25	ND
WEY-MW002-001-415-W-0	<1.0	<1.0	<1.0	<1.0	<1.0	0.47	ND
WEY-MW002-002-413-W-0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.25	3
WEY-MW002-003-414-W-0	<1.0	<1.0	<1.0	<1.0	<1.0	0.78	6
WEY-MW002-004-412-W-0	<1.0	<1.0	<1.0	<1.0	<1.0	0.42	ND
REGULATORY LEVELS	5.0	40	30	20	20	1.0	5.0

< = Below detection limit, detection limit reported.

NOTES

1) As reported by Alden Analytical Laboratories, Inc. on 04-01-92.
2) Parts Per Billion (ppb).
3) m-Xylene and p-Xylene cannot be separated and are reported here as a total of the the two isomers.
4) Parts Per Million (ppm).
5) Original laboratory report and correspondence available at the Shannon and Wilson (S&W) Seattle office.
6) Benzene maximum concentrations in water is 5 ppb; (WDOE, Model Toxics Control Act (MTCA), Chapter 173-340 WAC, 02-28-91, Method A - Cleanup Levels - Groundwater.
7) Toluene maximum concentrations in water is 40 ppb; (WDOE, MTCA Method A Cleanup Levels - Groundwater).
8) Ethylbenzene maximum concentrations in water is 30 ppb; (WDOE, MTCA Method A Cleanup Level - Groundwater).
9) Xylenes maximum concentrations in water is 20 ppb; (WDOE, MTCA Method A Cleanup Level - Groundwater).
10) Benzene, toluene, ethylbenzene and xylene concentrations determined by EPA Method 8240.
11) TEPH is the abbreviation for Total Extractable Petroleum Hydrocarbons as determined by EPA Method 8015.
12) TEPH maximum concentrations in water is 1 ppm; (WDOE, MTCA Method A Cleanup Level - Groundwater).
13) Total lead as determined by EPA Method 7421.
14) Total lead maximum concentration in groundwater is 5 ppb.
15) All groundwater samples obtained with disposable VOSS Technology bailers.
16) ND - None Detected at or above the method reporting limit.



0 1/4 1/2 1

Scale in Miles

NOTE

Map adapted from USGS topographic map of Snoqualmie, WA quadrangle, dated 1973.

Weyerhaeuser Snoqualmie Mill Site
Snoqualmie, Washington

VICINITY MAP

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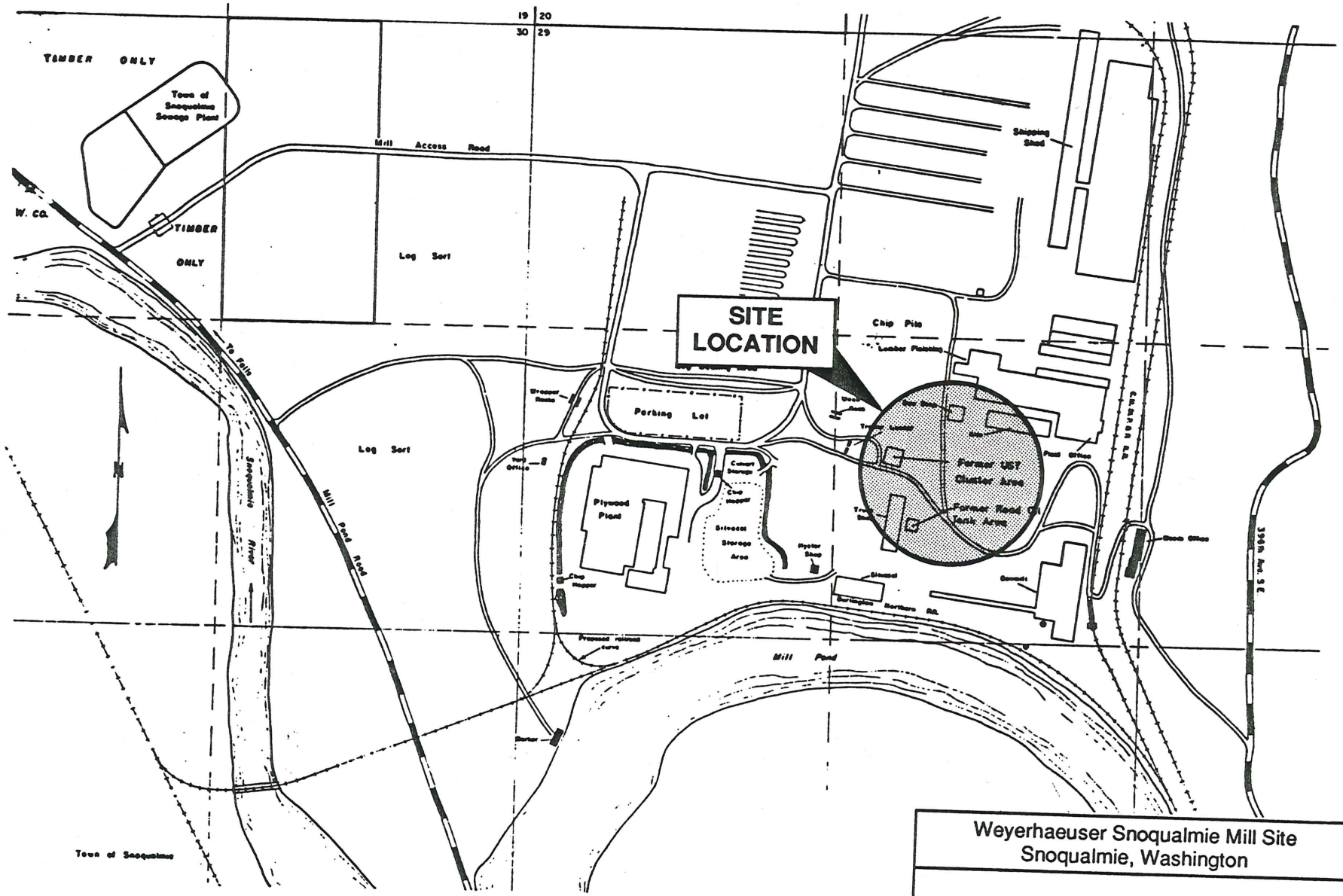
FIG. 1



NOTE

This plan was provided by Weyerhaeuser Company, dated December 1989.

0 400 800

Scale in Feet

Weyerhaeuser Snoqualmie Mill Site
Snoqualmie, Washington

SITE PLAN

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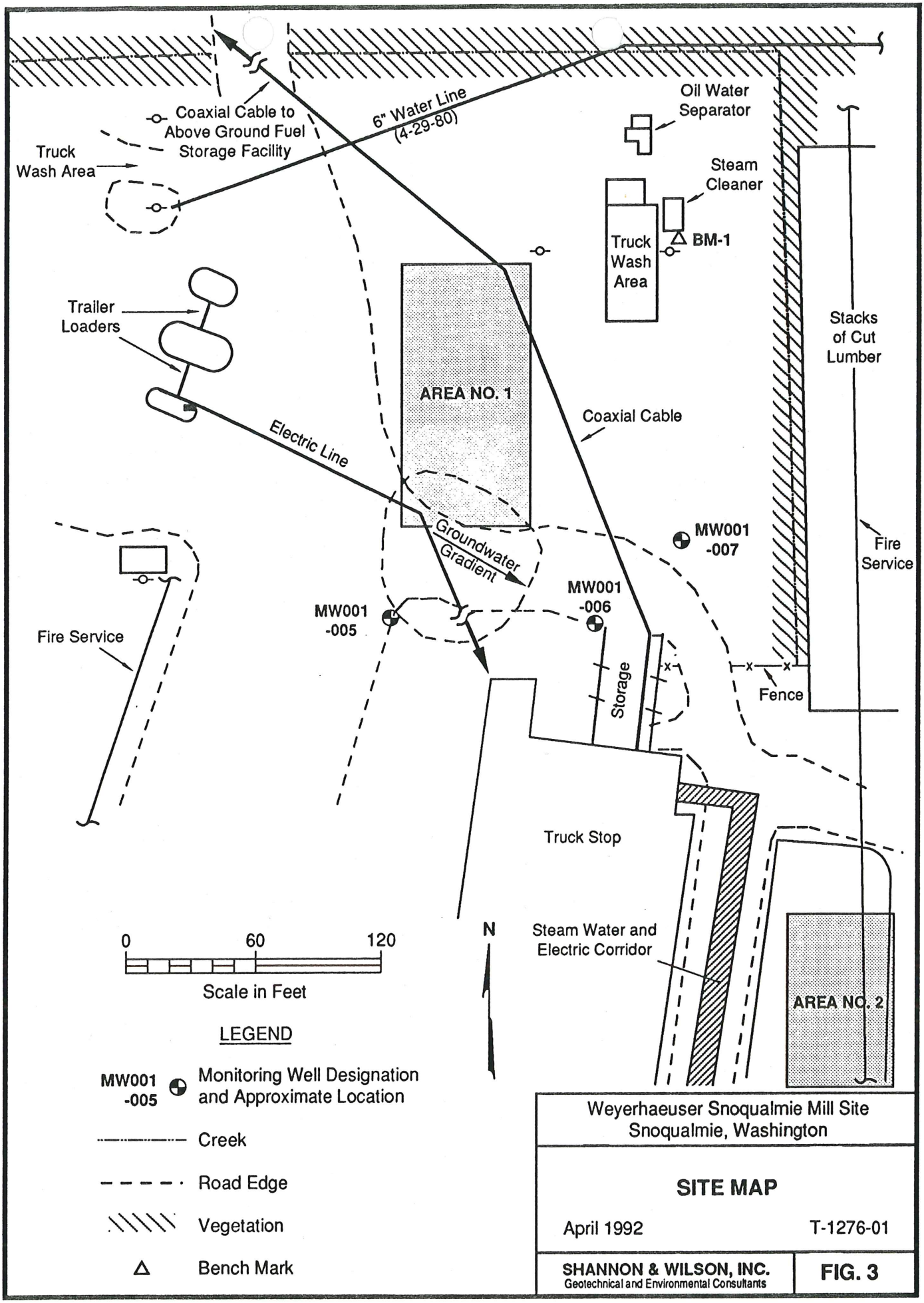
FIG. 2

FIG. 2



Weyerhaeuser Snoqualmie Mill Site
Snoqualmie, Washington

SITE MAP

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FIG. 3

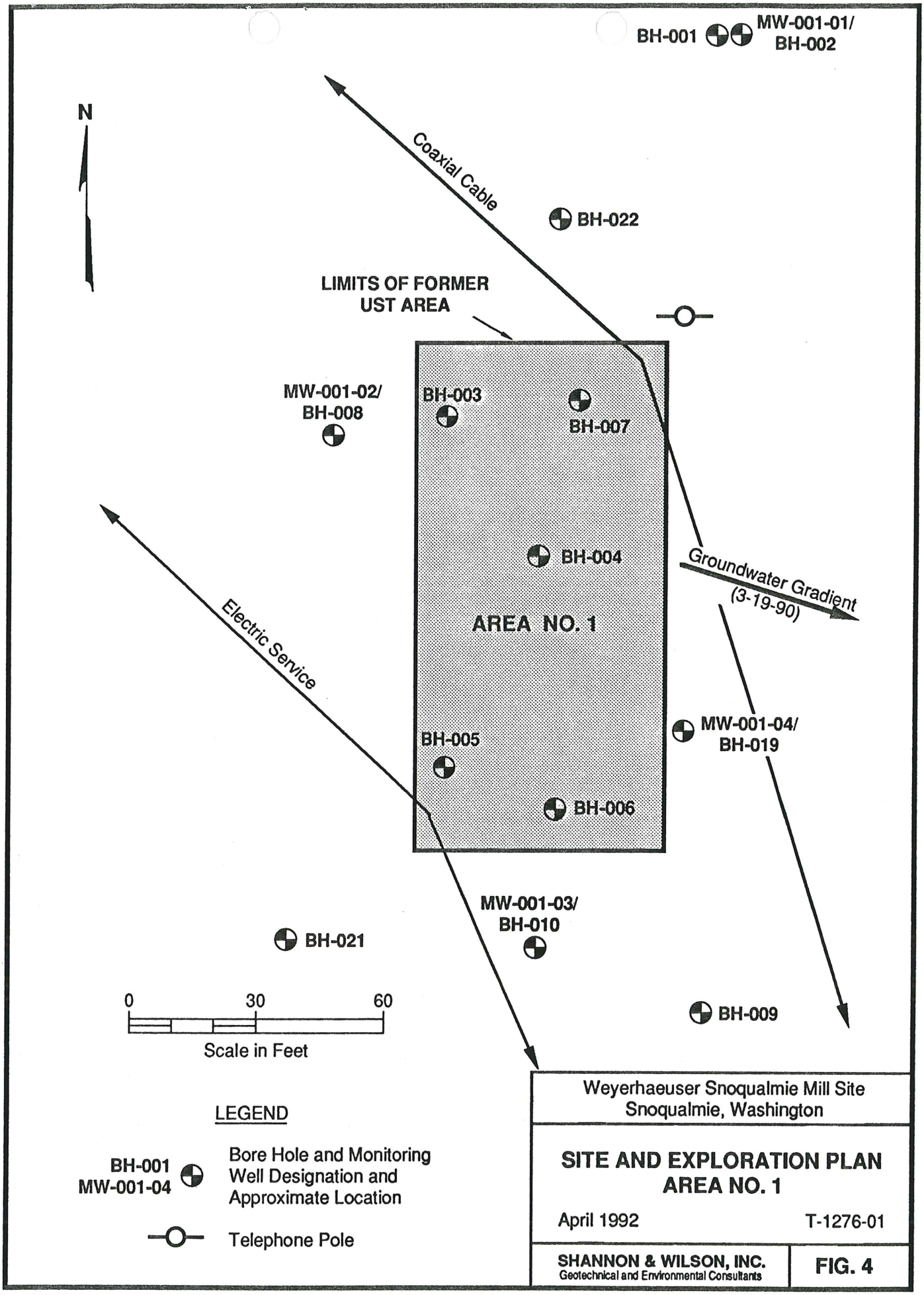
BH-001
MW-001-01/
BH-002
N
Coaxial Cable
BH-022
LIMITS OF FORMER
UST AREA
MW-001-02/
BH-008
BH-003
BH-007
BH-004
AREA NO. 1
Groundwater Gradient
(3-19-90)
Electric Service
MW-001-04/
BH-019
BH-005
BH-006
MW-001-03/
BH-010
BH-021
BH-009
0
30
60
Scale in Feet
LEGEND
BH-001
MW-001-04
Bore Hole and Monitoring
Well Designation and
Approximate Location
Telephone Pole
Weyerhaeuser Snoqualmie Mill Site
Snoqualmie, Washington
SITE AND EXPLORATION PLAN
AREA NO. 1
April 1992
T-1276-01
SHANNON & WILSON, INC.
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FIG. 4

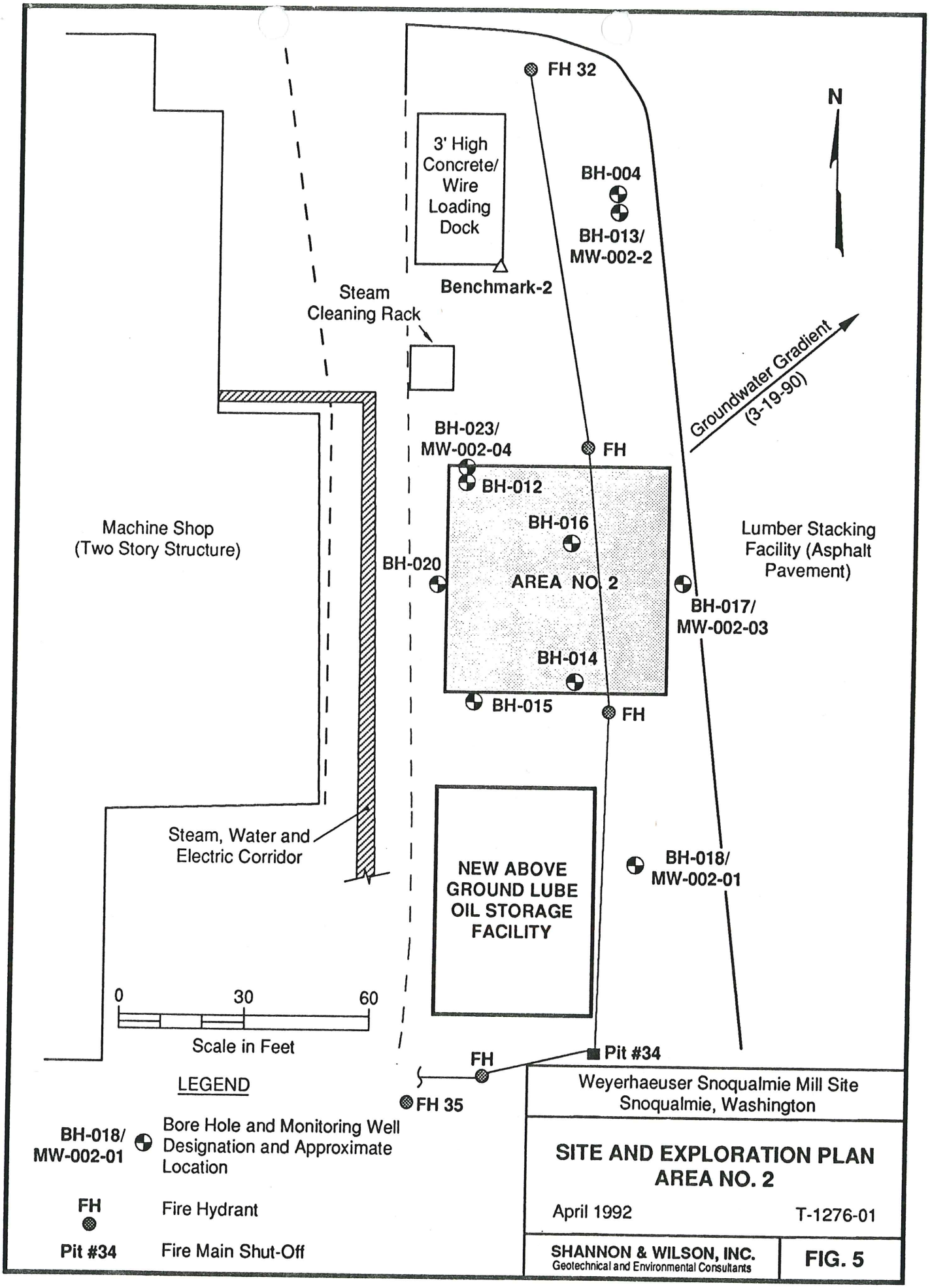
FH 32
N
3' High Concrete/ Wire Loading Dock
BH-004
BH-013/ MW-002-2
Benchmark-2
Steam Cleaning Rack
Groundwater Gradient (3-19-90)
BH-023/ MW-002-04
FH
BH-012
BH-016
Machine Shop (Two Story Structure)
BH-020
AREA NO. 2
Lumber Stacking Facility (Asphalt Pavement)
BH-017/ MW-002-03
BH-014
BH-015
FH
Steam, Water and Electric Corridor
NEW ABOVE GROUND LUBE OIL STORAGE FACILITY
BH-018/ MW-002-01
0
30
60
Scale in Feet
FH
Pit #34
FH 35
LEGEND
BH-018/ MW-002-01
Bore Hole and Monitoring Well Designation and Approximate Location
FH
Fire Hydrant
Pit #34
Fire Main Shut-Off
Weyerhaeuser Snoqualmie Mill Site
Snoqualmie, Washington
SITE AND EXPLORATION PLAN
AREA NO. 2
April 1992
T-1276-01
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FIG. 5