UST-SITE INVESTIGATION AND FINAL CLEANUP REPORT FOR

Bill's Cut Rate Gasoline Station in
Chelan, Washington

Prepared for:

Mrs. Debbie Love

Prepared by:

Peter Trabusiner
Engineer

NetCompliance Products & Services, Inc.
210 N. Perry St. Suite B.
Kennewick, WA 99336
(509) 736-1187

Client:	Debbie Love 917 East Woodin Ave. Chelan, WA 98816
Property:	Bill's Cut Rate Gas Chelan, Washington
Major Commercial Activity:	Gasoline Station Mini Mart
Site Assessor:	Peter Trabusiner
Project Number:	48-001-063
Report Date:	December 27, 1999

Legal Description: Lots 1,2,3,4,5,6,7,and the east 8 feet of lot 8, Block 2, Lakeview Addition to Chelan, Chelan County, Washington.

Zoning: The subject property is zoned C-HS-Highway Service Commercial District, chapter 17.36 of the City of Chelan's zoning code.

EXECUTIVE SUMMARY

At the request of Mrs. Debbie Love, daughter of Mrs. Norma L. Shourd, the owner of the subject property, a site investigation and site assessment were conducted at Bill's Cut Rate Gasoline Station in Chelan, Washington, on November 8, and 18, 1999. Mr. Peter Trabusiner, Engineer with NetCompliance Products & Services, Inc. (NCPS, Inc.) did the UST's site check and the soil sampling with site assessment together with Cascade Drilling from Portland, Oregon.

All site-specific information with regard to the 1992 UST's closure, upgrade and cleanup activities at the subject property was available from the present operator, Mrs. Love, and the Washington Department of Ecology in Yakima.

The information derived from our file review and interviews with the owner and the DOE follows in condensed form:

On March 5, 1992, Blue Ridge Assossiates with Carter Excavation conducted a UST's site decommissioning at the subject site. Initially five tanks were removed and decommissioned. During the excavation two abandoned tanks were found and decommissioned. Approximately 3,400 cubic yards of petroleum hydrocarbon contaminated soil was excavated and temporarily stored on site and off site. According to the Blue Ridge site assessment, some contaminated soil was left in place at the perimeter of the excavation before the new tanks were installed. Approximately 2,000 cu/yards were disposed of in a sanitary landfill (Waste-Management), the remainder of about 1,400 cu/yards was land farmed at an orchard property. The closure and cleanup activities lasted until the end of June, 1992. The UST's closure report and the site assessment were received by DOE in August, and filed under the #92-34 as a LUST Site in September, 1992.

See copy of the report in the Appendix.

At the present time the subject site is an active gasoline station under the name of Bill's Cut Rate Gas Site ID# 9768. The site was inspected on November 8, 1999, by NCPS, Inc. for compliance, and a subsurface investigation with soil testing was conducted on November 18, 1999, by Cascade Drilling, Co.

Soil sampling underneath each dispenser was conducted on November 8, 1999. The dispenser pumps were opened and the inside was observed for signs of leaks or discolored soil. No obvious contamination was evident at any of the pumps.

The inspection of the three underground storage tanks revealed no evidence for non-compliance. The new sti-P3 tanks were installed in 1992. The tanks have external coating with corrosion protection for tanks and piping. Automatic leak detection and inventory control is installed for all tanks and the piping.

The compliance inspection revealed no deficiencies, and the soil testing found no contamination with petroleum hydrocarbons at the site.

It is our opinion, if there was petroleum contaminated soil left in place in 1992, by now (1999) naturally biodegradation has removed most of the petroleum hydrocarbons from the soil.

As a result of on-site visual and physical inspection, soil sampling and testing, interviews, records research, historical document review, and investigations of reported Federal and State environmental information databases, this Assessment has revealed no obvious evidence of potential environmental risks or recognized environmental conditions indicating the presence of hazardous conditions that could potentially impact the property.

It is our opinion that the subject gasoline station fulfills the basic requirements to be in compliance with the Washington DOE-USTs regulations, and the *No Further Action Required* status should be granted.

Purpose:

The purpose of this USTs Site Check was to investigate, review, assess, and evaluate--through research, document and record review, and visual or physical observations:

•Contamination by petroleum products.

•A brief overview, evaluation, and assessment of the severity of the current potential environmental risk based upon known standards or applicable regulations.

Unless specifically noted within the text of this report, this Environmental Site Assessment does not include or address groundwater.

Protocol:

The procedure for this Site Assessment was to perform in practical and reasonable steps--employing currently available technology, existing regulations, and generally acceptable engineering practices--investigation to ascertain the possibility, presence, or absence of petroleum releases or threatened releases as required by the Scope of Work.

Objectives:

•To attempt to accomplish all appropriate inquiry into ownership and uses of the property consistent with good commercial or customary practice, in an effort to minimize liability.

•To provide environmental information that will assist in evaluating the ownership's risk of potential loss or value impairment of the security interest, due to environmental defects.

Although this Site Check cannot absolutely quantify and qualify every possible past and present environmental risk, the assessment does provide a partial information basis for reasonable decision making regarding the potential for environmental liabilities and risk, based upon the current site-specific situation, assessment limitations, and methods of evaluation.

Site History:

The subject site is located in Chelan, Washington, at the corner of Woodin Avenue and Clifford Road. Lake Chelan is located approximately one mile to the west at the end of Woodin Avenue, with the Chelan Dam being located at the southeastern edge of the city limits.

The site has been in operation as "Bill's Cut Rate Gas" for more than twenty years. The two (2) 10,000 gallon gasoline UST's (leaded and unleaded) were installed in May, 1972. The two (2) 6,000 gallon gasoline UST's (unleaded and super-unleaded) were installed in July, 1975. The one (1) 5,000 gallon gasoline UST (unleaded) was installed in May, 1984. The two (2) unexpected 2,000 gallon UST's were installed previous to the installation of the two (2) 10,000 gallon gasoline UST's in May, 1972. "Welk Brothers of Spokane" was clearly marked on the tanks. It appears they were the distributor, and. possibly the tank installer. Norma Shourd, the present owner, stated that her deceased husband, Bill Shourd, installed the tanks, and did all his own plumbing.

The following details the work performed during the course of the decommissioning supervision and the site assessment. In 1992, Blue Ridge Associates, Inc. (Blue Ridge), was retained by Bill Tibbits of Columbia Construction to perform a UST decommissioning and site assessment for five gasoline tanks at Bill's Cut Rate Gas Station at 817 East Woodin in Chelan, Washington. The station was owned and operated by Norma Shourd, Bill Shourd's widow, of Chelan, Washington.
The tanks removed included two (2) 10, 000 gallon (one leaded and one unleaded gasoline), two (2) 6, 000 gallon (one unleaded and one super unleaded), and one (1)
5, 000 gallon (unleaded) Underground Storage Tank (UST's). Two (2) additional 2, 000 gallon UST's (unknown product, possibly gasoline) were discovered during excavation of the two 10,000 gallon tanks.
Jackie E. Stephens, Washington Certified UST Site Assessor and Decommissioning Supervisor conducted the UST's site closure and the site assessment. The work started on March 5, 1992.
Two (2) 10,000 gallon, two (2) 6,000 gallon, one (1) 5,000 gallon, and two (2) 2,000 gallon UST's were removed. The tanks were formerly located at Bill's Cut Rate Gas, with all seven tanks being east of the service station. The tanks were excavated by Carter Excavation of Brewster, Washington. The tanks were inerted, cut, opened, cleaned, and removed by Hydrocarbon Specialty Contractors, Inc., (HSCI) of Spokane, Washington. The UST's were purchased by Craig Carter of Carter Excavation from Norma Shourd, owner of Bill's Cut Rate Gas, for the sum of one dollar.
As part of this site closure in 1992, contacts were made with State and local governmental agencies to obtain information and data in regards to the subject property and its surrounding area. The Washington Department of Ecology (DOE) Yakima office was contacted, and it was learned that the tanks were registered with the agency under the Facility Site No. 9768, and Tank ID numbers 3, 4, 5,.6, and 7. Jim Chulas, Randy Holman and Susan Bergdorf of the DOE were contacted several times before and after the site closure. David Prosch, R.S., the Environmental Health Specialist for the Chelan-Douglas Health District, was also contacted. He made several visits to the site and to the orchard "land farm" east of Chelan. Mitch Atkinson, Chelan County Fire Marshal, was at the site the day of the tank pulls, and he observed much of the project.

1992 UST's Decommissioning and Site Cleanup

All the UST s were located east-northeast of the service station on the property of Bill's Cut Rate Gas. The **two (2) 2,000 gallon** UST's were located approximately 10 feet east of the southeast corner of the service station. The bottom of the tanks were located about 12 feet below the ground surface with the long axis in a north-south direction. The **two (2) 10,000 gallon** UST's were located east and northeast of the two (2) 2,000 gallon UST's. The bottom of the tanks were about 14 feet below the ground surface .with the long axis in a north-south direction. The **two (2) 6,000 gallon** UST's were located directly east of the two (2) 10,000 gallon UST's. The bottom of the tanks were about 14 feet below the ground surface. The one (1) **5,000 gallon** UST is located approximately 30 feet northeast of the two (2) 6,000 gallon UST's.

The Underground Storage Tanks were removed on March 5, 1992. The tanks were excavated and removed by Carter Excavation, Inc., of Brewster, Washington. A hole 50 feet by 24 feet and 15 feet deep was dug to expose the two (2) 10,000 gallon and two (2) 6,000 gallon UST's east of the service station and west of the two pump-islands. That material was removed to an area at Clifford Street and placed on plastic.

Additional plumbing was uncovered to the north of the two pump islands. The abandoned pump island was completely covered with asphalt, and it lead to an abandoned 5,000 gallon UST.
A hole 10 feet by 16 feet by 16 feet deep was excavated to expose the isolated 5,000 gallon UST. That impacted material was removed and deposited on plastic, located about 40 feet to the southwest of the excavation, for later remediation. The material removed consisted of a finely laminated indigenous clay approximately two to three feet beneath the bottom of the tanks that acted as a barrier to downward flowing contamination. This clay was saturated with petroleum product and had a very strong odor, but there was no free product. Driscoll [1986] suggests a range for the hydraulic conductivity of clays of 0.001-0.000001 gallons per day per square foot. The clay unit originally extending to the surface, however, was excavated and removed when the tanks were first installed.

1999 Site Investigation :

DOE Site ID #: 9768
At the time of our inspection, the site contained three underground storage tanks.
The tanks are in compliance with the Washington UST regulations.

TANK ID#	AGE	SIZE	MATERIAL	PRODUCT STORED
1	7	10000	sti-P3	Unleaded Gasoline
2	7	10000	sti-P3	Unleaded Premium
3	7	5000	sti-P3	Diesel

The tanks are corrosion-protected steel with exterior coating.
The piping is single wall corrosion protected galvanized steel. Line leak detectors are installed for the piping.
Stage one vapor recovery, overfill, and spill containments are installed at the three tanks, the turbine pumps, and the dispensers.

Investigative Methodology:

After all utilities on site were located, Cascade Drilling of Portland conducted the subsurface investigation. Fifteen sample locations were selected to cover the area of the former USTs. The sampling locations were placed close to the edge of the interference of the in 1992 backfilled material and the native soil, to find out if any contamination previously left in place by Blue Ridge has migrated, or if there is any contamination at all. The locations were determined by reviewing the old photos taken during the cleanup in 1992, and information from the owners and the neighbor. Using a push probe with 1" PVC sample liners, we collected fifteen (15) soil samples for the laboratory from 12' to 15' depth.
Soil screening was done on selected samples at depths between six and 10 feet with a Microtip PID. The TPH levels measured were from 1.3 ppm at hole #14 to 8.4 ppm at hole #3. These values are well below the MTCA Method A cleanup levels for residential soils.

Sampling Methodology:

Soil sampling was conducted by Mr. Trabusiner, an Engineer with NCP&S. The samples were retrieved from the PVC liner with a 7/8" wooden dowel directly into the four-ounce glass container and closed with Teflon-lined lids. They were stored in a cool environment until released, with a chain-of-custody, to the laboratory. The sampling tools were disposed of between samples.
Random field testing was done by utilizing the "head space" field screening method to detect the volatiles as measured by a Combustible Gas Instrument (CGI).
Soils are contained inside a sealed glass container and exposed to a heat source. The volatile components in the soil evaporate and are contained within the "head space." The Teflon probe of the CGI is inserted through the seal and the gasses are extracted and measured within the CGI.
Field screening was used as a general guideline to delineate areas of possible contamination. Screening results were not used to aid in the selection of soil samples submitted to the laboratory for chemical analysis. Additionally screening methods included visual and olfactory methods. The precision and accuracy of field screening were not quantified.
During visual screening, the soil samples were observed for anomalous color and odor and stains indicative of possible contamination.

Analysis of the soil samples taken during the closure activities was conducted by OnSite Environmental Laboratory in Redmond, Washington, an EPA and State of Washington accredited laboratory.
Results from these samples are contained in the following table:

Laboratory Tests:

The following table is a summary of the results of chemical testing by the laboratory (See Appendix B--Laboratory Report). Each sample was analyzed for total petroleum hydrocarbons (NWTPH-HCID) and total lead in soil.

Sample ID.	Boring#	Gasoline	Diesel	Heavy Oil	Lead
BC-01	#1/12'	ND	ND	ND	ND
BC-02	#2/14'	ND	ND	ND	ND
BC-03	#3/12'	ND	ND	ND	ND
BC-04	#4/15'	ND	ND	ND	ND
BC-05	#5/14'	ND	ND	ND	ND
BC-06	#6/14'	ND	ND	ND	ND
BC-07	#7/12'	ND	ND	ND	ND
BC-08	#8/14'	ND	ND	ND	ND
BC-09	#9/14'	ND	ND	ND	6,8
BC-10	#10/12'	ND	ND	ND	7.9
BC-11	#11/14'	ND	ND	ND	7.9
BC-12	#12/15'	ND	ND	ND	12
BC-13	#13/13'	ND	ND	ND	14
BC-14	#14/12'	ND	ND	ND	8.9
BC-15	#15/13'	ND	ND	ND	7.9

No contamination with petroleum hydrocarbons was detected in either of the samples. See the laboratory report in the Appendix.
The concentrations for lead in samples BC-09 to BC-15 are well below the MTCA Level A cleanup level of 250 ppm.

Area and location:

Surrounding Properties

Bill's Cut Rate Gas service station is located at the corner of Woodin Avenue and Clifford Road. There is an alley to the north of Bill's Cut Rate Gas, with several houses located just across the alley.

Geology and Hydrology

> **Source:** Soil Survey of Chelan County Area, Washington (United States Department of Agriculture, Soil Conservation Service, 1985).

The geologic units located at the southern end of Lake Chelan and in the vicinity of the City of Chelan were deposited during the Pleistocene Epoch. They include bedded silt, terrace gravels and glacial drift deposits. The bedded silt deposits range from very fine sand to clay, distinctly inter-bedded, and commonly containing ice-rafted dropstones. The terrace gravel deposits consist of moderately sorted cobble to pebble gravel. Most of these deposits are inwash and outwash fill, with the outwash fill grading up valley to moraines within the glacial drift unit. The glacial drift deposits consist of gravelly outwash, and, in some areas, the outwash is interbedded with till and minor lacustrine sediments (Tabor and others, 1987).

The geologic unit at the subject site is distinctly a fine grained, flat lying, laminated grey clay. When exposed to the atmosphere, drying takes place rapidly and the clay becomes white and dusty, resembling talcum powder. It is extremely absorbent and, when a petroleum product leak occurred, it functioned as a sponge or wick.

Groundwater in the area can generally be found at an elevation of approximately 1,045 feet above mean sea level. A six inch well was reported to have been drilled by Gardner Drilling in the SW1/4NE1/4 section 18, T27N R23W, to 604 feet. The well had a static water level of 105 feet below the 1,150 feet surface elevation.

Hydrogeologic and Soil Characteristics

a) *Overburden:* Consists of asphalt underlain by sand fill, sitting within a finely laminated indigenous clay.

b) *Drainage and Groundwater:* The area drains to the southwest, towards Lake Chelan, and south towards Chelan Canyon, with a depth to groundwater of approximately 100 feet.

c) *Locations of drinking water wells in the vicinity:* None. The City of Chelan obtains its water supply from Lake Chelan.

Findings

The findings of the assessment are presented below in our **Conclusions**. Laboratory sample analysis results are attached in the Appendices of this report. Photographs are included in this report and follow the appendices.

Conclusions:

Based on the soil test results and visual inspection of the USTs system, there is no indication of a release from this UST site, and the UST system seemes to be in compliance with the Washington DOE-UST regulations.
With regard to the 1992 site cleanup and the rating as a LUST site by the DOE, the property does not serve as a current or will not serve as a future residential area; the property does not have the potential to serve as a future residential area based on the consideration of zoning, statutory and regulatory restrictions, comprehensive plans, historical use, adjacent land use, and other relevant factors. Appropriate use restrictions are implemented at the property, and no other restrictions are necessary to protect human health and the environment. The property is currently and will be used in the future for commercial purposes and warrants no further soil cleanup based on the above listed constituents.

It is our opinion that the subject site is suitable for the Permanent Closure Status and **No Further Action** is requested.

STATEMENT OF THE ENVIRONMENTAL PROFESSIONALS

Statement of Quality Assurance

I have performed this Assessment in accordance with generally accepted environmental practices and procedures, as of the date of this report. I have employed the degree of care and skill ordinarily exercised under similar circumstances by reputable environmental professionals practicing in this area. The conclusions contained within this assessment are based upon site conditions I readily observed or were reasonably ascertainable and present at the time of my site inspection

The conclusions and recommendations stated in this report are based upon personal observations made by myself and other employees of NetCompliance Products & Services, Inc., and also upon information provided by others. I have no reason to suspect or believe that the information provided is inaccurate.

Signature of Environmental Professional--Peter H. Trabusiner

Environmental Engineer

Assessment and Report Limitations:

The purpose of an environmental assessment is to reasonably evaluate potential or actual effects of past or current practices on a given site. In performing an environmental assessment, a balance must be struck between reasonable inquiry into environmental issues and an exhaustive analysis of every conceivable issue of possible concern. This environmental assessment contains NCPS opinion regarding environmental issues of concern and/or additional issues that may need to be addressed. In rendering our professional opinion, NCPS warrants that the services provided within the scope of this assessment were performed, within the limits described, in accordance with generally accepted environmental consulting principles and practices. No other warranty, express or implied, is made. The following paragraphs describe the assumptions and standard parameters under which such opinion is rendered.

Any opinions and/or recommendations presented in this report apply to site conditions existing at the time of performance of services. NCPS is unable to report on or accurately predict events that may affect the site after performance of services, whether occurring naturally or caused by human forces. NCPS assumes no responsibility for conditions NWE did not investigate, or conditions not generally recognized as environmentally unacceptable at the time services were performed.

Where subsurface work was performed, NCPS professional opinions are based in part on the interpretation of data from discrete sample locations that may not represent actual conditions at the non-sampled locations.

Except where there is express concern of our client, or where specific environmental contaminants have previously been reported by others, naturally occurring toxic substances, potential environmental contaminants located inside buildings, or contaminant concentrations not of current environmental concern, may not be addressed in this document.

No assessment is thorough enough to exclude the presence of hazardous materials at a given site. Therefore, if specific hazardous materials have not been identified during this assessment, the lack of such identifications should not be construed as a guarantee of the absence of hazardous materials, but merely as the result of services performed within the scope, limitations, and cost of work done.

NCPS is not responsible for the effects of changes in applicable environmental standards, practices, or regulation after the performance of services.

Services provided for this assessment were performed in accordance with NCPS agreement and understanding with our client, which may not be fully disclosed in this report. Opinions and/or recommendations are intended for the client, purpose, site, location, time frame, and project parameters indicated.

This report was prepared solely for the use of Mrs. Debbie Love and the Washington Department of Ecology, and should be reviewed in its entirety; NCPS is not responsible for subsequent separation, detachment, or partial use of this document. Any reliance on this report by a third party shall be at such party's sole risk.

APPENDIX

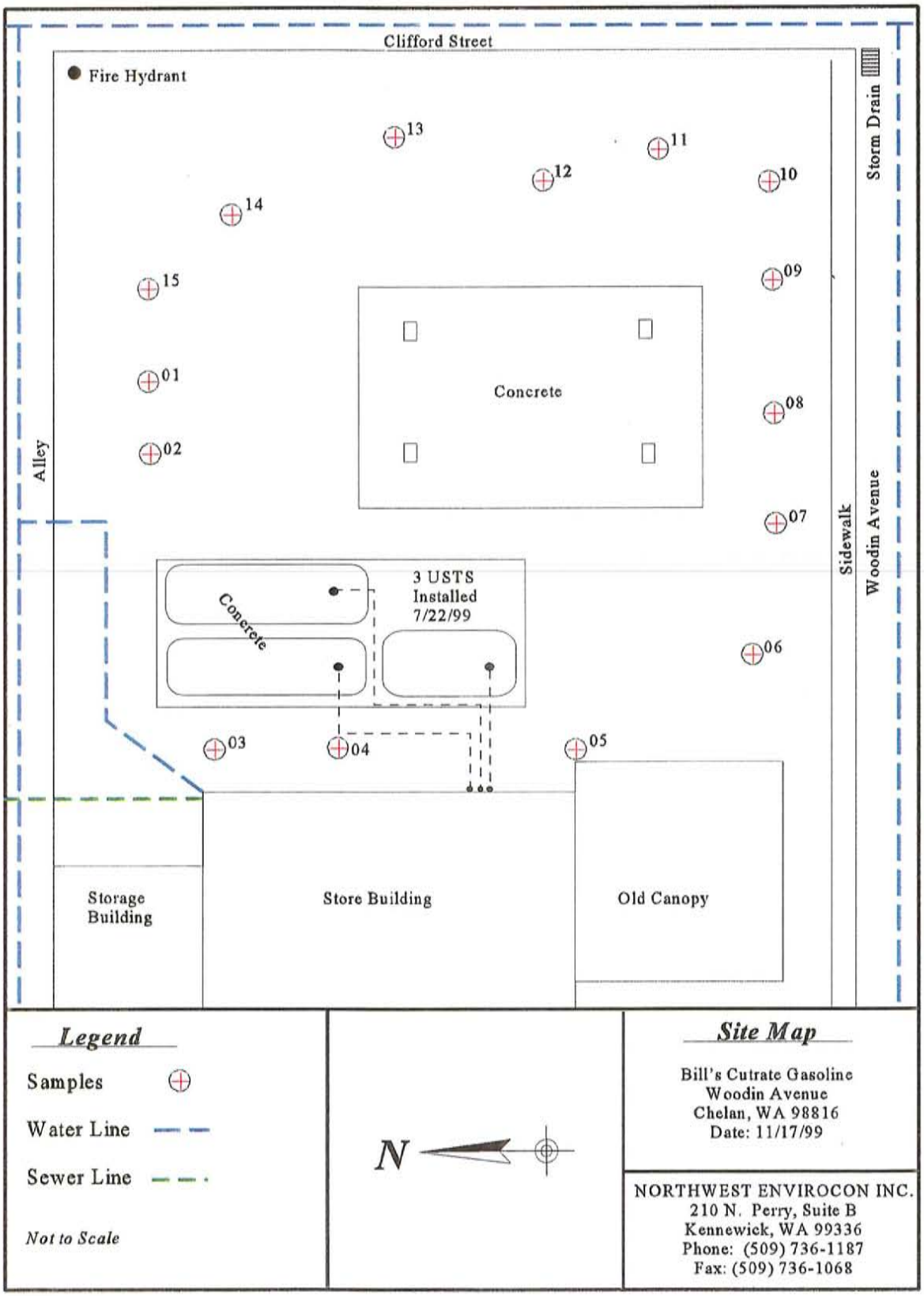
Site Location Map

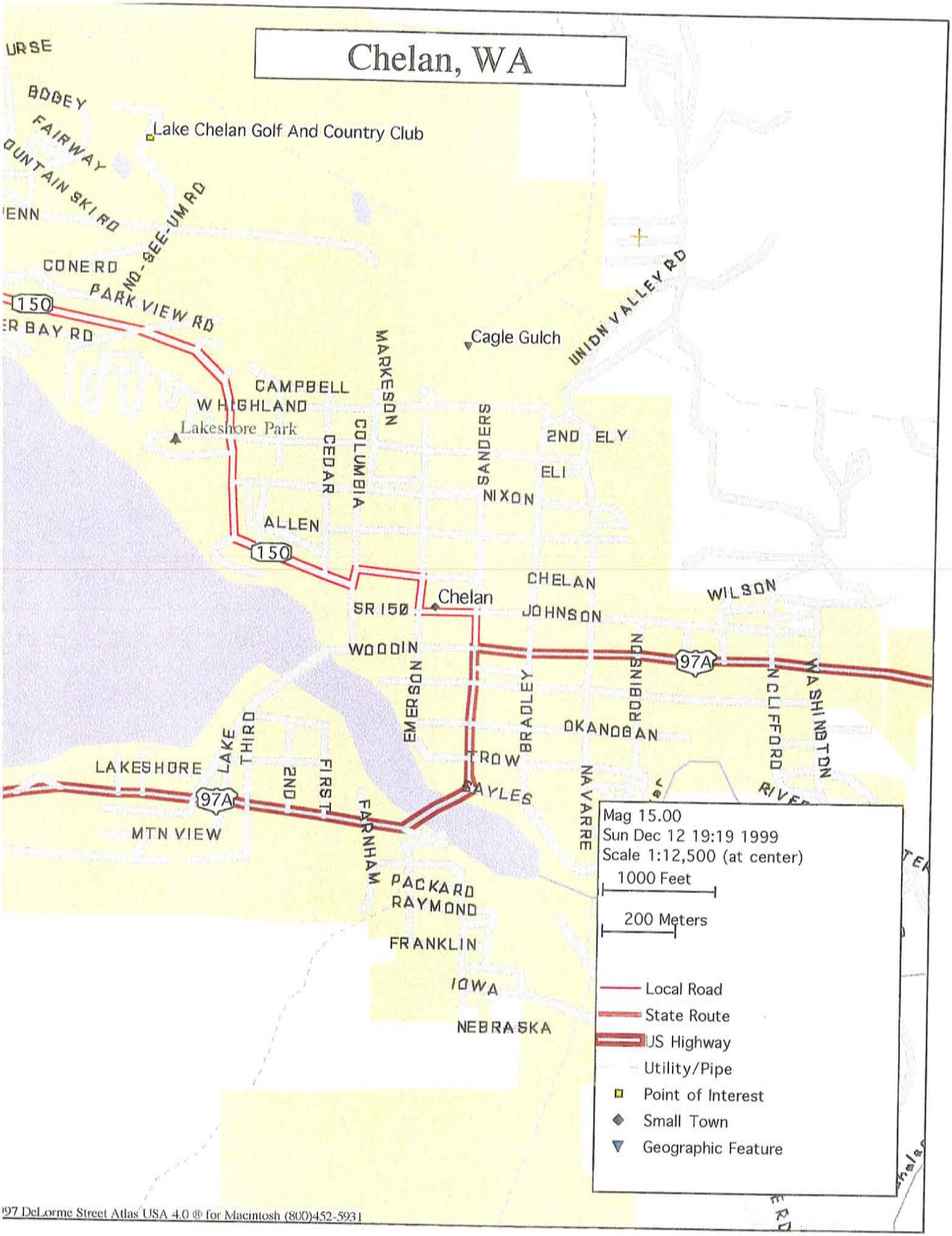
Site Drawing

Site Photographs

Copies from DOE File

Copy from Blue Ridge 1992


Clifford Street
Fire Hydrant
Storm Drain
13
11
12
10
14
09
15
Concrete
01
08
02
Alley
Sidewalk
Woodin Avenue
07
3 USTS
Installed
7/22/99
Concrete
06
03
04
05
Storage
Building
Store Building
Old Canopy
Legend
Samples
Water Line
Sewer Line
Not to Scale
N
Site Map
Bill's Cutrate Gasoline
Woodin Avenue
Chelan, WA 98816
Date: 11/17/99
NORTHWEST ENVIROCON INC.
210 N. Perry, Suite B
Kennewick, WA 99336
Phone: (509) 736-1187
Fax: (509) 736-1068



OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

November 30, 1999

Peter Trabusiner
Net Compliance
210 N. Perry, Suite B
Kennewick, WA 99336

Re: Analytical Data for Project 48-001-063
Laboratory Reference No. 9911-153

Dear Peter:

Enclosed are the analytical results and associated quality control data for samples submitted on November 23, 1999.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

NWTPH-HCID

Date Extracted: 11-24-99
Date Analyzed: 11-24-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	BC-01	BC-02	BC-03
Lab ID:	11-153-01	11-153-02	11-153-03
Gasoline:	ND	ND	ND
PQL:	29	29	31
Diesel Fuel:	ND	ND	ND
PQL:	58	57	62
Heavy Oil:	ND	ND	ND
PQL:	120	110	120
Surrogate Recovery:			
o-Terphenyl	90%	93%	83%

Flags:

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

NWTPH-HCID

Date Extracted: 11-24-99
Date Analyzed: 11-24-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	BC-04	BC-05	BC-06
Lab ID:	11-153-04	11-153-05	11-153-06
Gasoline:	ND	ND	ND
PQL:	30	30	30
Diesel Fuel:	ND	ND	ND
PQL:	61	60	61
Heavy Oil:	ND	ND	ND
PQL:	120	120	120
Surrogate Recovery:			
o-Terphenyl	96%	99%	98%

Flags:

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

NWTPH-HCID

Date Extracted: 11-24-99
Date Analyzed: 11-24-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	BC-07	BC-08	BC-09
Lab ID:	11-153-07	11-153-08	11-153-09
Gasoline:	ND	ND	ND
PQL:	30	29	28
Diesel Fuel:	ND	ND	ND
PQL:	60	59	56
Heavy Oil:	ND	ND	ND
PQL:	120	120	110
Surrogate Recovery:			
o-Terphenyl	100%	93%	108%

Flags:

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

NWTPH-HCID

Date Extracted: 11-24-99
Date Analyzed: 11-24-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	BC-10	BC-11	BC-12
Lab ID:	11-153-10	11-153-11	11-153-12
Gasoline:	ND	ND	ND
PQL:	27	28	27
Diesel Fuel:	ND	ND	ND
PQL:	55	56	54
Heavy Oil:	ND	ND	ND
PQL:	110	110	110
Surrogate Recovery:			
o-Terphenyl	91%	97%	100%

Flags:

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

NWTPH-HCID

Date Extracted: 11-24-99
Date Analyzed: 11-24-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	BC-13	BC-14	BC-15
Lab ID:	11-153-13	11-153-14	11-153-15
Gasoline:	ND	ND	ND
PQL:	27	27	27
Diesel Fuel:	ND	ND	ND
PQL:	54	54	54
Heavy Oil:	ND	ND	ND
PQL:	110	110	110
Surrogate Recovery:			
o-Terphenyl	91%	93%	106%

Flags:

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

NWTPH-HCID
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-24-99
Date Analyzed:	11-24-99
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB1124S1
Gasoline:	ND
PQL:	25
Diesel Fuel:	ND
PQL:	50
Heavy Oil:	ND
PQL:	100
Surrogate Recovery:	
o-Terphenyl	126%

Flags

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

TOTAL LEAD
EPA 6010B

Date Extracted:	11-29-99
Date Analyzed:	11-29-99
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
BC-01	11-153-01	**ND**	5.8
BC-02	11-153-02	**ND**	5.7
BC-03	11-153-03	**ND**	6.2
BC-04	11-153-04	**ND**	6.1
BC-05	11-153-05	**ND**	6.0
BC-06	11-153-06	**ND**	6.1
BC-07	11-153-07	**ND**	6.0
BC-08	11-153-08	**ND**	5.9
BC-09	11-153-09	**6.8**	5.6
BC-10	11-153-10	**7.9**	5.5
BC-11	11-153-11	**7.9**	5.6
BC-12	11-153-12	**12**	5.4
BC-13	11-153-13	**14**	5.4
BC-14	11-153-14	**8.9**	5.4
BC-15	11-153-15	**7.9**	5.4

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-29-99
Date Analyzed:	11-29-99
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1129S1

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 11-29-99
Date Analyzed: 11-29-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-153-01

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**ND**	**ND**	NA		5.0

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 11-29-99
Date Analyzed: 11-29-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-153-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**237**	95	**231**	92	2.6	

Date of Report: November 30, 1999
Samples Submitted: November 23, 1999
Lab Traveler: 11-153
Project: 48-001-063

Date Analyzed: 11-24-99

% MOISTURE

Client ID	Lab ID	% Moisture
BC-01	11-153-01	14
BC-02	11-153-02	13
BC-03	11-153-03	19
BC-04	11-153-04	18
BC-05	11-153-05	17
BC-06	11-153-06	18
BC-07	11-153-07	17
BC-08	11-153-08	15
BC-09	11-153-09	10
BC-10	11-153-10	9.0
BC-11	11-153-11	10
BC-12	11-153-12	7.0
BC-13	11-153-13	8.0
BC-14	11-153-14	8.0
BC-15	11-153-15	8.0

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range, and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

Z -

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day

☐ 2 Day ☐ 3 Day

☒ Standard
(Hydrocarbon analyses: 5 days, All other analyses: 7 days)

☐ 12/2 (other)

Project Chemist: DB

Laboratory No. 11-153

Company: NCPS, INC.

Project No.: 48-001-063

Project Name: BILLS CUTRATE GAS

Project Manager: P. TRABUSINER

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	TOTAL LEAD						% Moisture
1	BC-01	11/18-99	7:40	Soil	1	X													X						V
2	BC-02	11/18	8:35		1	X													X						Y
3	BC-03	11/18	9:15		1	X													X						V
4	BC-04	11/18	9:50		1	X													X						X
5	BC-05	11/18	10:15		1	X													X						V
6	BC-06	11/18	10:40		1	X													X						V
7	BC-07	11/18	11:05		1	X													X						V
8	BC-08	11/18	11:50		1	X													X						V
9	BC-09	11/18	12:15		1	X													X						V
10	BC-10	11/18	12:40		1	X													X						X
11	BC-11	11/18	13:20		1	X													X						X
12	BC-12	11/18	13:50		1	X													X						X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
P Trabusiner	11/22/99	[illegible]	11/23/99
FIRM NCPS, INC.	TIME 10:30	FIRM OSE	TIME
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

Chromatographs with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☐ Standard
(Hydrocarbon analyses: 5 days, All other analyses: 7 days)
☐ 12/2
(other)

Project Chemist: DB

Laboratory No. 11-153

Company: NCP&S, Inc.
Project No.: 48-001-063
Project Name: Bills Cutrate Gas
Project Manager: P. Trabusiner

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	TOTAL LEAD						% Moisture
13	BC-13	11/18	14:22	Soil	1	X													X						X
14	BC-14	11/18	14:50	Soil	1	X													X						X
15	BC-15	11/18	15:10	Soil	1	X													X						X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
P. Trabusiner	11/22/99		11/22/99
FIRM NCP+S, INC.	TIME 10:30	FIRM OSE	TIME
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

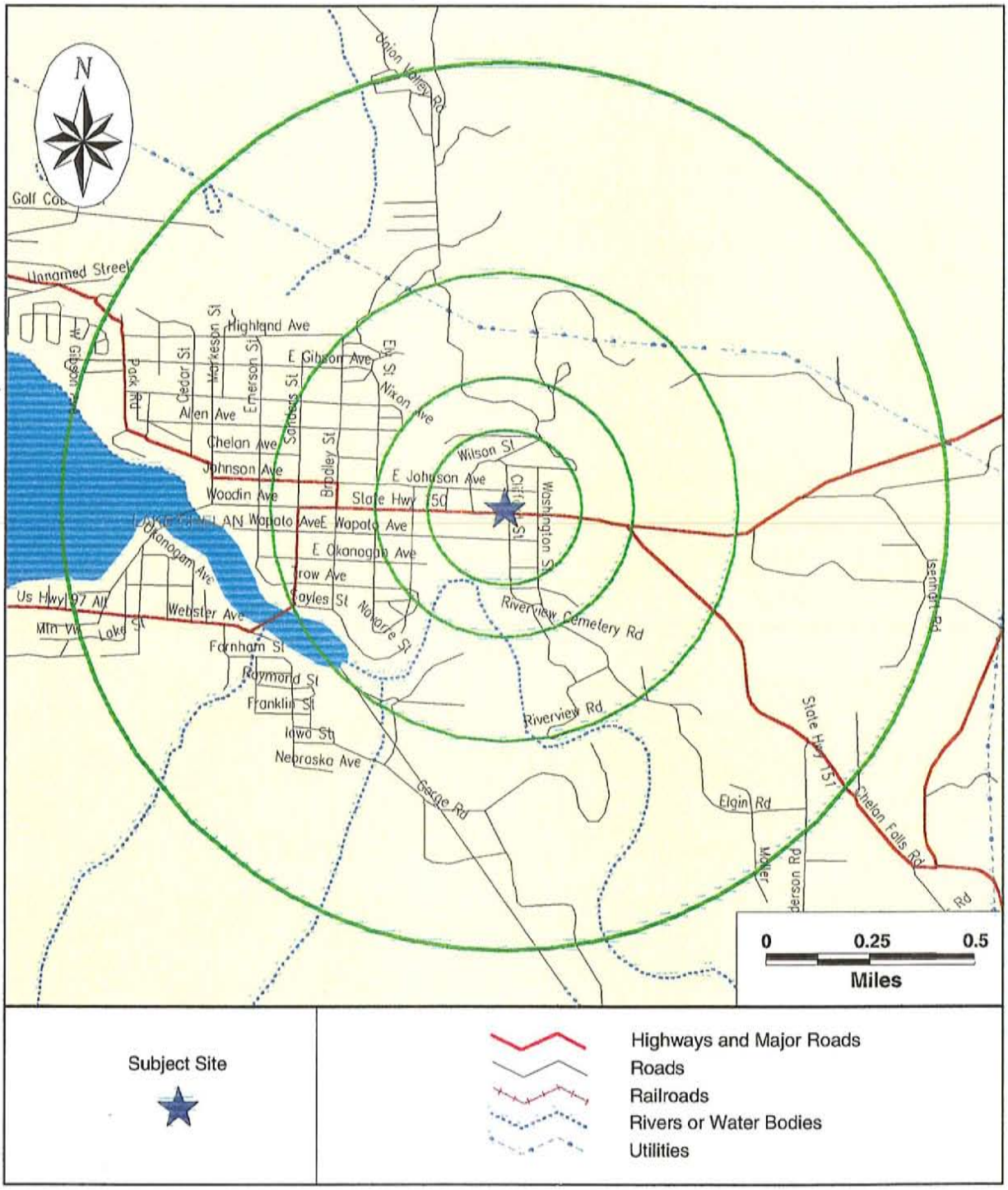
COMMENTS:
Invoice to:
Bills Cutrate Gas
Attn: Debbie Love
817 E. Woodin Ave
Chelan, WA 98816

Chromatographs with final report ☐

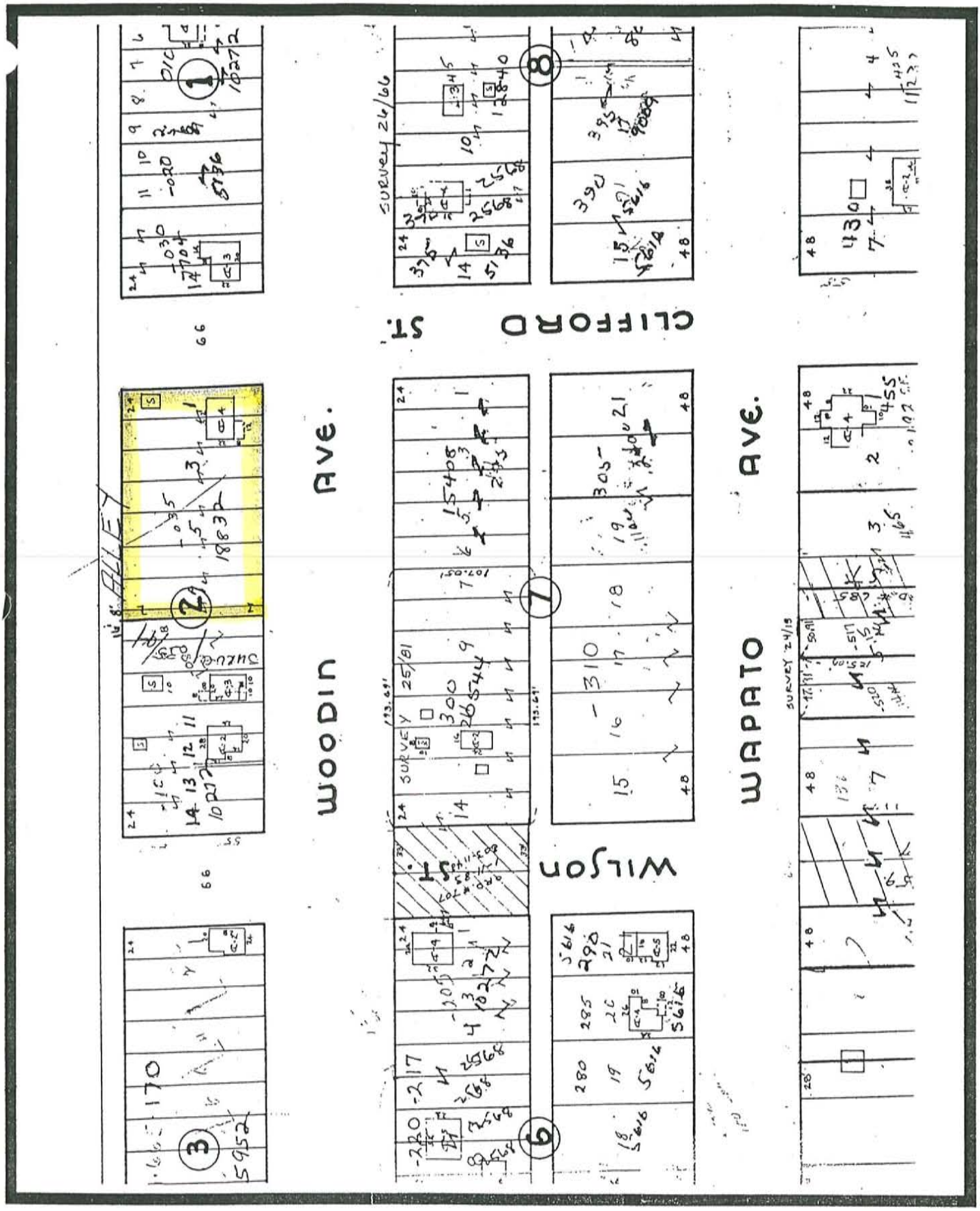
DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

SITE ASSESSMENT PLUS REPORT

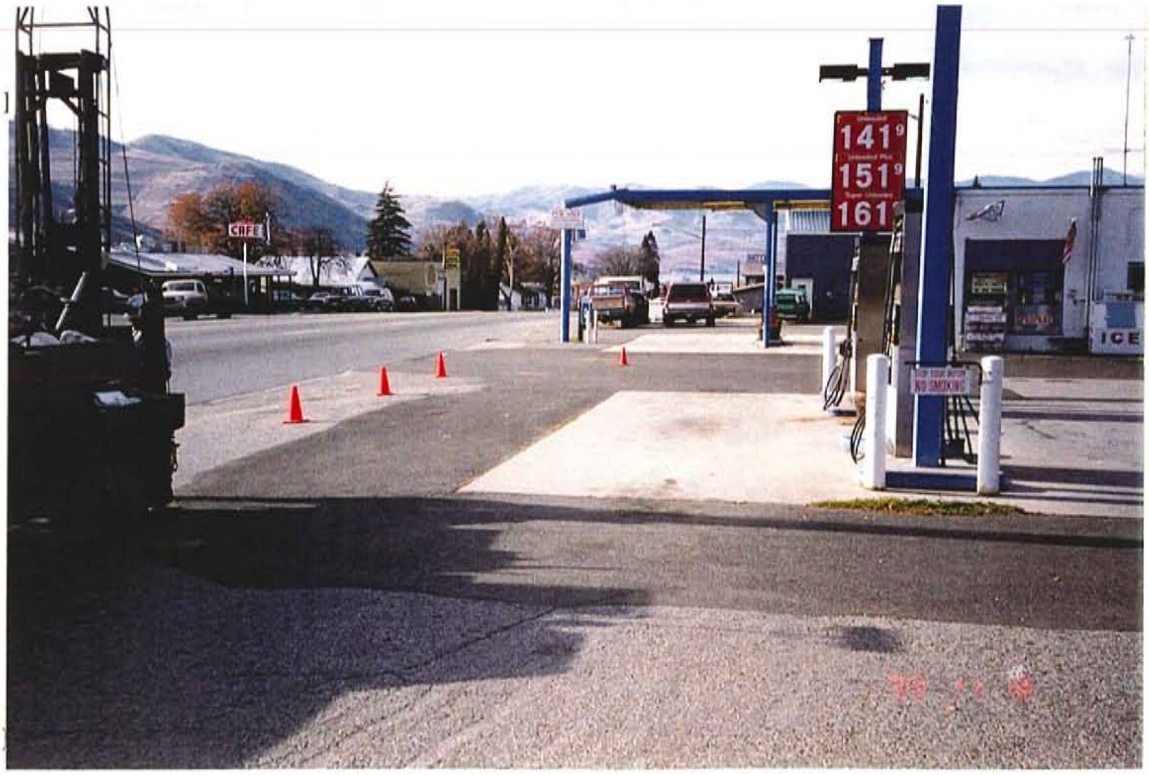
Street Map



Plat Map


WOODIN AVE.
WILSON ST.
WAPATO AVE.
CLIFFORD ST.
SURVEY 24/66
SURVEY 24/19

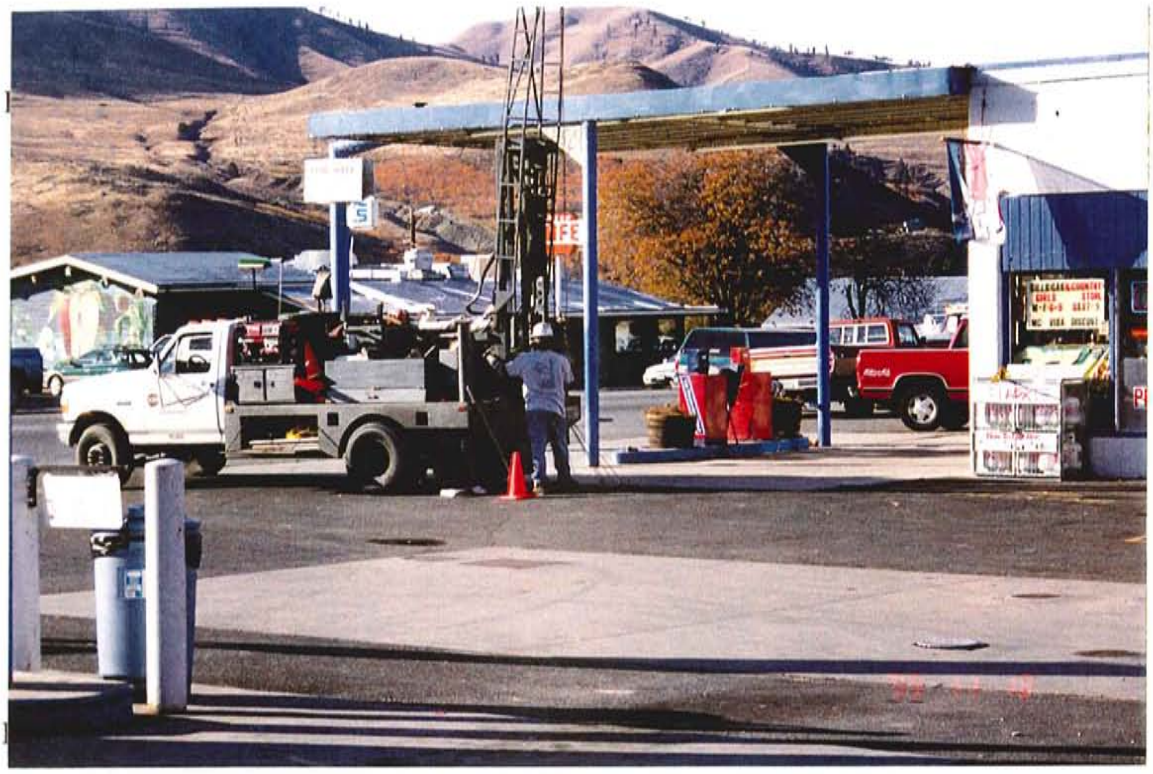
BILLS CUTRATE GASOLINE STATION IN CHELAN, WASHINGTON.



SOIL TESTING ON NOVEMBER 18, 1999 AT THE SUBJECT SITE. TEST LOCATIONS #6, #7, #8, AND #9 ALONG WOODIN AVENUE.

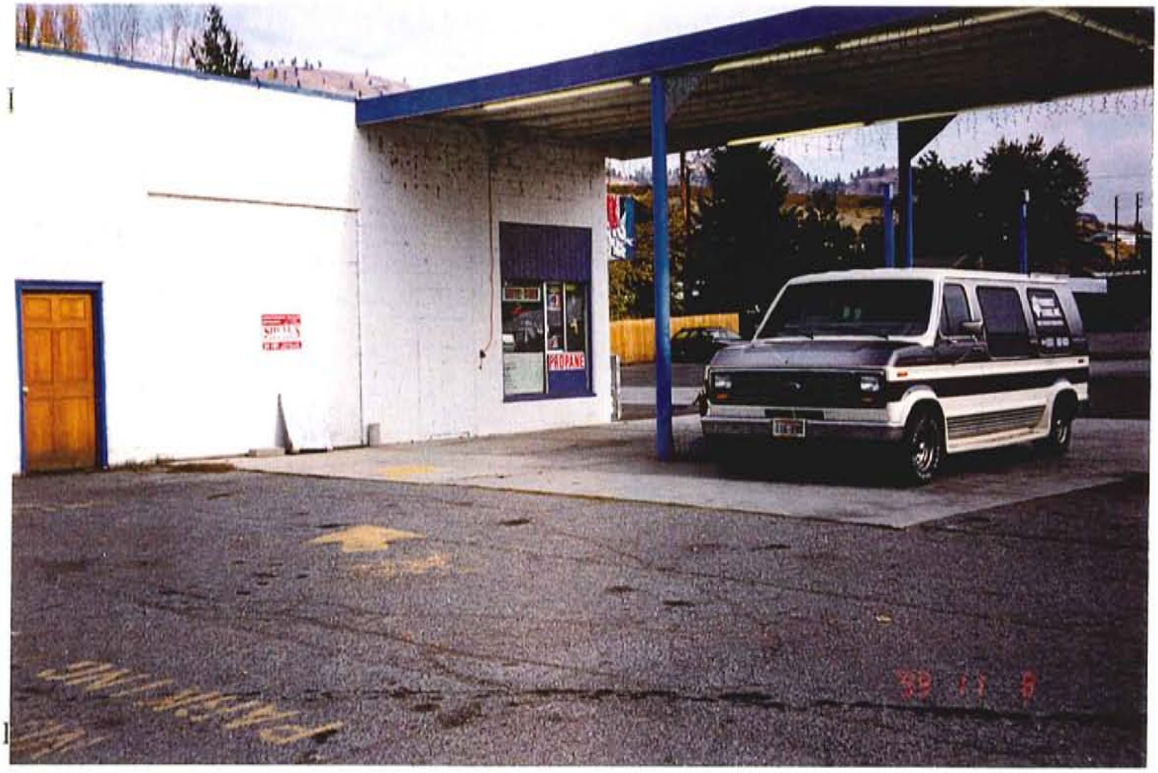
DIRECT-PUSH SOIL SAMPLING SYSTEM USED FOR THE PROJECT.

SAMPLING LOCATION #1 AND #2 ALONG THE NORTHERLY PROPERTY LINE.



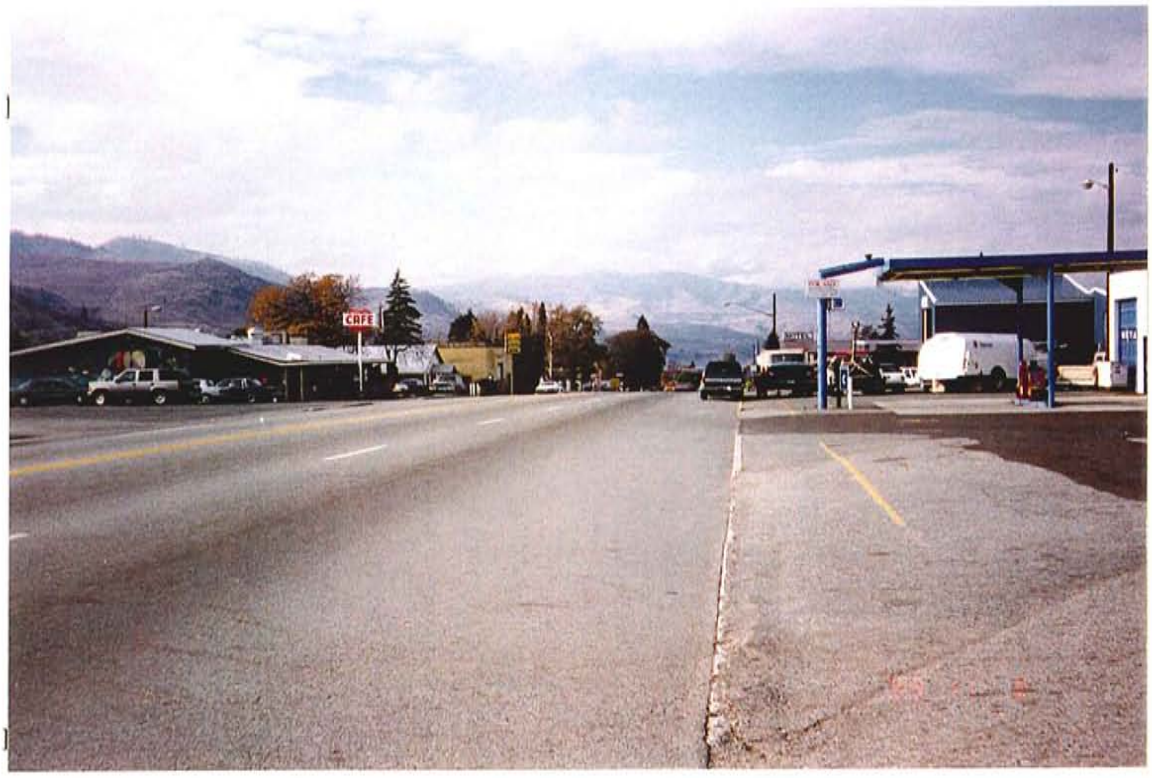
THE SUBJECT SITE AS SEEN FROM THE NE TOWARDS THE SW.

THE STORE WITH THE NORTHERLY PRPERTY LINE.



CANOPY FROM THE OLD GAS STATION WHICH WAS CLOSED IN 1992.

LOCATION OF THE THREE NEWLY IN 1992 INSTALLED USTs.



WOODIN AVENUE TOWARDS THE LAKE.

SITE TOWARDS CLIFFORD STREET TO THE EAST.

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

6308 Start Card No. 86228

Water Right Permit No. G

(1) OWNER: Name Chelan County Transfer Station Address

LOCATION OF WELL: County Chelan SW ¼ NE ¼ Sec 18 T. 27 N., R. 23 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) 1 Mile N. of Chelan on Hy 97

(3) PROPOSED USE: [X] Domestic [X] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one)

Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 604 feet. Depth of completed well 604 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from -2 ft. to 120 ft.
Welded [ ] Liner installed [ ] Threaded [ ] " Diam. from ft. to ft.
" Diam. from ft. to ft.

Perforations: Yes [ ] No [X]
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes [ ] No [X]
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [ ] Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 25+ ft.
Material used in seal
Did any strata contain unusable water? Yes [ ] No [X]
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level 1150 ft.
Static level 105 ft. below top of well Date 4-1-92
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [X] No [ ] If yes, by whom? Driller
Yield: 3.3 gal./min. with Total ft. drawdown after 4 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

Bailer test gal./min. with ft. drawdown after hrs.
Airtest 3 gal./min. with stem set at 600 ft. for 1 hrs.
Artesian flow g.p.m. Date
Temperature of water 61 Was a chemical analysis made? Yes [ ] No [X]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
overburden w/gravel	0	8
Cobels	8	12
Boulder very Hard	12	17
Sand & gravel w/clay binder	17	62
Coarse gravel	62	115
decomposed Granit	115	218
Granit Soft w/water 15GPM	218	290
Hard granit	290	375
Soft Granit	375	401
Clear Quartz Hard	401	412
Med. Hard Granit water ½ GPM	412	520
Hard Granit w/cracks	520	580
Very Hard Granit Water 3GPM	580	604

Work started 3-15-92 Completed 3-25, 1992

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Gardner Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address RT 1 Box 402 Manson

(Signed) Roger Gardner (WELL DRILLER) License No. 1242

Contractor's Registration No. GARDND 055LI Date 3-28-, 1992

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (rev 87) 1329

VISTA Address*:	BILLS CUT-RATE 817 E WOODIN AVE CHELAN, WA 98816	VISTA ID#: Distance/Direction: Plotted as:	4685963 0.04 MI / W Point
STATE UST - State Underground Storage Tank / SRC# 6183		Agency ID:	9768

Map ID **2**

Agency Address:	*SAME AS ABOVE*
Underground Tanks:	*10*
Aboveground Tanks:	*NOT REPORTED*
Tanks Removed:	*7*

Tank ID:	*1-GASOLI*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*UNLEADED GAS*	**Leak Monitoring:**	*NOT AVAILABLE*
Tank Age:	*7*	**Tank Piping:**	*NOT AVAILABLE*
Tank Size (Units):	*10000 (GALLONS)*	**Tank Material:**	*COATED STEEL*
Tank ID:	*1-HEATIN*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*LEADED GAS*	**Leak Monitoring:**	*NOT AVAILABLE*
Tank Age:	*7*	**Tank Piping:**	*NOT AVAILABLE*
Tank Size (Units):	*10000 (GALLONS)*	**Tank Material:**	*COATED STEEL*
Tank ID:	*1-HEHF-7*	**Tank Status:**	*REMOVED*
Tank Contents:	*UNLEADED GAS*	**Leak Monitoring:**	*NOT AVAILABLE*
Tank Age:	*35*	**Tank Piping:**	*NOT AVAILABLE*
Tank Size (Units):	*NOT REPORTED (NOT AVAILABLE)*	**Tank Material:**	*STEEL*
Tank ID:	*1-JP5 FU*	**Tank Status:**	*REMOVED*
Tank Contents:	*LEADED GAS*	**Leak Monitoring:**	*NOT AVAILABLE*
Tank Age:	*35*	**Tank Piping:**	*NOT AVAILABLE*
Tank Size (Units):	*NOT REPORTED (NOT AVAILABLE)*	**Tank Material:**	*STEEL*
Tank ID:	*1-NU*	**Tank Status:**	*REMOVED*
Tank Contents:	*OTHER*	**Leak Monitoring:**	*NOT AVAILABLE*
Tank Age:	*35*	**Tank Piping:**	*NOT AVAILABLE*
Tank Size (Units):	*NOT REPORTED (NOT AVAILABLE)*	**Tank Material:**	*STEEL*
Tank ID:	*1HU*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*UNLEADED GAS*	**Leak Monitoring:**	*NOT AVAILABLE*
Tank Age:	*7*	**Tank Piping:**	*NOT AVAILABLE*
Tank Size (Units):	*5000 (GALLONS)*	**Tank Material:**	*COATED STEEL*
Tank ID:	*1KU*	**Tank Status:**	*REMOVED*
Tank Contents:	*LEADED GAS*	**Leak Monitoring:**	*NOT AVAILABLE*
Tank Age:	*35*	**Tank Piping:**	*NOT AVAILABLE*
Tank Size (Units):	*NOT REPORTED (NOT AVAILABLE)*	**Tank Material:**	*STEEL*
Tank ID:	*1KU*	**Tank Status:**	*REMOVED*
Tank Contents:	*LEADED GAS*	**Leak Monitoring:**	*NOT AVAILABLE*
Tank Age:	*35*	**Tank Piping:**	*NOT AVAILABLE*
Tank Size (Units):	*NOT REPORTED (NOT AVAILABLE)*	**Tank Material:**	*STEEL*
Tank ID:	*1KU*	**Tank Status:**	*REMOVED*
Tank Contents:	*LEADED GAS*	**Leak Monitoring:**	*NOT AVAILABLE*
Tank Age:	*35*	**Tank Piping:**	*NOT AVAILABLE*
Tank Size (Units):	*NOT REPORTED (NOT AVAILABLE)*	**Tank Material:**	*STEEL*

CASCADE DRILLING INC. PROJECT INFORMATION SHEET CASCADE #_____

RIG #_____ CELL PH#_____ PH# 521-6031 FAX# 521

CLIENT NW ENVIROCON LOC WA CONTACT PETER MIBUSINER

WORK DATE_____ DAY OF WEEK_____ START TIME_____

NAME OF JOB SITE_____ SITE PHONE#_____

STREET ADDRESS_____ CROSS STREETS_____

CITY CLEAN CLIENT JOB#_____ BILL TO NAME_____
BILL TO ADDRESS:_____ BILL TO #_____
HAZARDOUS SITE:_____ SERVICES: 1 2 3 4 5 6 SERVICE___RETAIL___WHSL___
SITE OWNER AND ADDRESS:_____
LEGAL DESCRIPTION ____1/4, ____1/4, SECTION____TOWNSHIP____RANGE____
UNDERGROUND ALERT TICKET #:_____ DATE_____

OF BORINGS 15 DEPTH 25 SOIL ONLY

OF WELLS_____DEPTH____DIA___

OF WELLS_____DEPTH____DIA___

DEPTH TO WATER_____SCREEN INTERVAL_____SLOT SIZE_____DEVELOP_____
ACCESS PROBLEMS NO WORK HOUR RESTRICTIONS NO TRAFFIC CONTROL_____
SURFACE:ASPHALT X CONCRETE 4 ac 5 DIRT_____WATER ON SITE_____

BACKFILL_____SURFACE COMPLETION_____DRUMS ~~OR STOCKPILE~~

SAMPLER SIZE:_____MOVE CUTTINGS:_____

SAMPLING PROCEDURES_____SOIL TYPES SILT + SAND FINE

POTENTIAL CONTAMINANTS_____TYVEK__GLOVES__BOOTS__RESPIRATOR__

EMERGENCY FACILITY_____SITE SAFETY BY:_____

AUGERS 10"ID____8"ID____6"ID____4"ID____OTHER_____

OPERATOR_____HELPER_____LABORER_____

SUPPORT VEHICLES_____FULL WATER TANK_____PERDIEM_____

SAND #3	_____	PVC DIAMETER	_____	DECON W/STEAMER	_____
SAND 2/12	_____	PVC SLOT SIZE	_____	CONCRETE CORE/SAW	_____
PEA GRAVEL	_____	20'PVC SLOTTED	_____	CONCRETE BIT	_____
PORTLAND CEMENT	_____	10'PVC SLOTTED	_____	JACKHAMMER	_____
CONCRETE	_____	5'PVC SLOTTED	_____	GROUT MIXER	_____
QUICKSET	_____	20'PVC BLANK	_____	GROUT PUMP	_____
BENTONITE CHIPS	_____	10'PVC BLANK	_____	PLYWOOD	_____
VOLCLAY GROUT	_____	5'PVC BLANK	_____	PLASTIC SHEET	_____
12" WELL COVER	_____	SLIP CAPS	_____	HOLE COVER PLATES	_____
8" WELL COVER	_____	THREADED CAPS	_____	WOOD PLUGS	_____
MONUMENT CASING	_____	LOCKING CAPS	_____	SAMPLE LINERS	_____
BALLARDS	_____	TREMIE PIPE	_____	BAILER	_____
DOT 17H BARRELS	_____	TRAFFIC CONTROL	_____	SURGE BLOCK	_____

OTHER_____PDSCAS04

1/2

For: Columbia Construction

SITE ASSESSMENT and DECOMMISSIONING

Bill's Cutrate Gas
Chelan, Washington

By: Jackie E. Stephens, Geologist/President
Blue Ridge Associates, Inc.

August 10, 1992

Chelan UST "DECOMMISSIONING" AND "SITE ASSESSMENT"

1.0 INTRODUCTION

Blue Ridge Associates, Inc. (Blue Ridge), was retained by Bill Tibbits of Columbia Construction to perform an **UST DECOMMISSIONING** and **SITE ASSESSMENT** for five gasoline tanks at Bill's Cut Rate Gas Station at 817 East Woodin in Chelan, Washington. The station is presently owned and operated by Norma Shourd, Bill Shourd's widow, of Chelan, Washington.

The tanks pulled included two (2) 10,000 gallon (one leaded and one unleaded gasoline), two (2) 6,000 gallon (one unleaded and one super unleaded), and one (1) 5,000 gallon (unleaded) Underground Storage Tanks (UST's) (figure 1). Two (2) additional 2,000 gallon UST's (unknown product, possibly gasoline) were discovered during exploratory digging for the first two 10,000 gallon tanks. A Decommissioning and Site Assessment is also included for these two tanks within this report. The report is submitted to satisfy the scope of work of the consultant/client contract for a **UST DECOMMISSIONING** and **SITE ASSESSMENT**, and to meet the requirements of the Washington Department of Ecology (DOE) for UST Permanent Closure and Site Assessments.

UST DECOMMISSIONING SUPERVISION includes on-site supervision during all phases of the tank uncovering, inerting, opening, cleaning, and removal, and the filing of all appropriate forms with the DOE for appropriate closure. Blue Ridge Associates, Inc., was not hired to install any new tanks and was not involved with the owners' selection of either of the two "land-farm" sites. Blue Ridge's agreement to work was with Columbia Construction, and not with the Property Owners.

2.0 SCOPE OF WORK

The scope of work performed for this assessment report is intended to meet the requirements for a **UST DECOMMISSIONING** and the **SITE ASSESSMENT**. The following discussion details the work performed during the course of the decommissioning supervision and the site assessment.

2.1 Site Inspection and UST Supervision

On March 5, 1992, on-site supervision and inspections were conducted by Jackie E. Stephens, Washington Certified UST Technician (W001036). Two (2) 10,000 gallon, two (2) 6,000 gallon, one (1) 5,000 gallon, and two (2) 2,000 gallon UST's were removed. The tanks were formerly located at Bill's Cut Rate Gas, with all seven tanks being east of the service station. The tanks were excavated by Carter Excavation of Brewster, Washington. A 590D John Deere tractor was used for the excavating. The tanks were inerted, cut, opened, cleaned, and removed by Hydrocarbon Specialty Contractors, Inc., (HSCI) of Spokane, Washington. The UST's were purchased by Craig Carter of Carter Excavation from Norma Shourd, owner of Bill's Cut Rate Gas, for the sum of One Dollar ($1.00). Craig Carter was given a copy of the Washington State Department of Ecology protocol for handling the disposal of the tanks in a legal manner and he agreed to the protocol.

2.2 Site History

The subject site is located in Chelan, Washington (see figures 2 and 3), at the corner of Woodin Avenue and Clifford Road. The City of Chelan is located at the southeastern end of Lake Chelan, with the Lake Chelan Dam being located at the southeastern edge of Chelan's city limits.

The site has been in operation as "Bill's Cut Rate Gas" for more than twenty years. The two (2) 10,000 gallon gasoline UST's (leaded and unleaded) were installed in May, 1972. The two (2) 6,000 gallon gasoline UST's (unleaded and super-unleaded) were installed in July, 1975. The one (1) 5,000 gallon gasoline UST (unleaded) was installed in May, 1984. The two (2) unexpected 2,000 gallon UST's were installed previous to the installation of the two (2) 10,000 gallon gasoline UST's in May, 1972. **"Welk Brothers of Spokane"** was clearly marked on the tanks. It appears they were evidently the distributor, and possibly the tank installer. Norma Shourd, the present owner, stated that her deceased husband, **Bill Shourd installed the tanks, and had done all his own plumbing.**

2.3 Review of Area and Location

2.3.1 Surrounding Properties

Bill's Cut Rate Gas service station is located at the corner of Woodin Avenue and Clifford Road. There is an alley to the north of Bill's Cut Rate Gas, with several houses located just across the alley. A house and garage are located to the east. Norma Shourd lives in a trailer to the northeast and beside the extension of the north-bounding alley.

2.3.2 Geology and Hydrology

The geologic units located at the southern end of Lake Chelan and in the vicinity of the City of Chelan were deposited during the Pleistocene Epoch. They include bedded silt, terrace gravels and glacial drift deposits which are related to the Cordilleran icesheet. The bedded silt deposits range from very fine sand to clay, distinctly interbedded, and commonly containing ice-rafted dropstones. The terrace gravel deposits consist of from moderately sorted cobble to pebble gravel. Most of these deposits are inwash and outwash fill, with the outwash fill grading up valley to moraines within the glacial drift unit. The glacial drift deposits consist of gravelly outwash, and, in some areas, the outwash is interbedded with till and minor lacustrine sediments (Tabor and others, 1987).

The geologic unit at Bill's Cut Rate Gas is distinctly a fine-grained, flat lying, laminated grey clay. When exposed to the atmosphere, drying takes place and the clay becomes white and dusty, resembling talcum powder. It is extremely absorbent and, when a petroleum product leak occurred, it functioned as a sponge or wick.

Groundwater in the area can generally be found at an elevation of approximately 1,045 feet above mean sea level. A six inch (6") well was reported to have been drilled by Gardner Drilling in the SW1/4NE1/4 section 18, T27N R23W, to 604 feet. The well had a static water level of 105 feet below the 1,150 feet surface elevation.

The general stratigraphy of the area is overburdened with gravel underlain by cobbles, underlain by sand and gravel with some clay, underlain by coarse gravel, underlain by granite. The water is located in the coarse gravel unit (Appendix I).

2.4 Regulatory Review

As part of this assessment, contacts were made with governmental agencies to obtain information and data in regards to the subject property and its surrounding area. The Washington Department of Ecology (DOE) Yakima office was contacted, and it was learned that the tanks were registered with the agency under the Facility Site No. 9768, and Tank ID numbers 3,7,4,6, and 5 (as listed in the DOE printout - Appendix IV). Jim Chulas, Randy Holman and Susan Bergdorf of the DOE were contacted several times before and after the soil sample analyses were returned. David Prosch, R.S., the Environmental Health Specialist for the Chelan-Douglas Health District, was also contacted. He made several visits to the site and to the orchard "land farm" east of Chelan. Mitch Atkinson, Chelan County Fire Marshal, was at the site the day of the tank-

pulls, and he observed much of the initial job, returning several times at later dates.

3.0 FINDINGS

The findings of the assessment are presented below. Laboratory sample analysis results are attached in the Appendices of this report. Photographs are included in this report and follow the appendices.

The author of this report did unofficially visit the apple orchard area where the contaminated soil was to be placed in the center of the orchard. The author stated to the owners that he felt this site was inappropriate and that he would not recommend it as a "land-farm". He felt it was too small, too close to the fruit trees, houses, people, and the highway. The contaminated soil was placed by the owners directly on the edge of the paved road, stacked about six feet high and covered with plastic. Neighbors quickly complained of the odor, and the owner's next step was to attempt to move the soil to an approved "land-farm". None could be found. However, Dave Prosch of the Chelan County Health Department insisted that the soil be moved or the owners would be fined. "Waste Management" of East Wenatchee Land-Fill offered an alternative, which was to place the contaminated soil in their lined landfill. The author was asked to do what he could to get the soil accepted at the land-fill.

The land-fill management required the following:

1) Benzene analysis
2) Flash point
3) Ph
4) Total petroleum hydrocarbons (TPH)
5) Benzene, toluene, ethylbenzene, xylene (BTEX)
6) TCLcP heavy metal analyses
7) TCLP semi-volatile organics
8) Paint filter test
9) lead (Pb)
10) Poly-chlorinated biphenyls (PCB's)

After all required analyses had been performed, Waste Management agreed to accept the contaminated soils from the orchard area. The soil was then to be transported to East Wenatchee. At that point, the land-fill management insisted we further sample all in-ground reserves of contaminated soils before they would allow the transport of the soils to the landfill.

Waste Management had two problems with the in-ground contaminated soils:

1) benzene was above 100 ppm
2) flash points were too low

Waste Management refused to accept soils containing +100 ppm benzene soils because they felt the law did not exclude carcinogenic materials in the petroleum contaminated soils exclusion. The DOE did not agree with them, and Waste Management asked for their reasoning in writing. This was promised by the DOE, but the project was put on standby until Waste Management received the DOE's written interpretation of the petroleum exemption. After calling back and forth several times, we were told that the DOE had passed the problem on to their legal department, and it could take some time before an answer would be forthcoming. Waste Management refused to take further contaminated soils.

Meanwhile, Jerry Hosman (Norma Shourd's legal representative) asked for a meeting with the DOE and the Chelan County Health Department in Yakima. When I heard of this meeting, I asked Mr. Hosman if I should attend. Mr. Hosman stated, "you are not to attend the meeting, I am taking complete charge of the project, and everything is to go through me in the future".

Mr. Hosman related to Columbia Construction that he had found another "land-farm" site and that the DOE and the Chelan County Health Department would not interfere with the contaminated soils being placed at the new land-farm. When I arrived in Chelan (at Columbia Construction's request) with a "Microtip" Photoionization detector to supervise the excavation of the second 1,200-1,300 yards of contaminated soil previously mapped and sampled (using a backhoe), Mr. Hosman said he did not need me. He stated that the DOE told him "to go ahead and finish the job, and don't call back until it was done". I said "Fine and goodbye", and took a break for lunch at the cafe next door. Meanwhile, Larson Demolition met with Mr. Hosman and explained to him that if I didn't supervise the digging, they were leaving, as they did not want the responsibility of dictating where to dig without an environmental professional on the site.

The SITE ASSESSMENT consists of site inspection, site sampling upon tank removal, submitting of the samples for analysis, review and interpretation of the analytical results, review of past activities on the site and environs, and communication with appropriate governmental agencies. Based on the information obtained, the site is either determined to be free of contamination from the UST, or it is reported as a leaking UST (LUST) site. If the UST is leaking, recommendations are made and included in the report.

3.1 Underground Storage Tank Records

We found no existing records of the two 2,000 gallon UST's that had been located closest to the gas station. The other tanks were found to be registered with the DOE and carried registration numbers as shown above.

3.2 UST Decommissioning

The Underground Storage Tanks were removed on March 5, 1992. The tanks were exposed and lifted from the site by Carter Excavation, Inc., of Brewster, Washington, using a 590D John Deere tractor. A hole 50 feet by 24 feet and 15 feet deep was dug to expose the two (2) 10,000 gallon and two (2) 6,000 gallon UST's east of the service station and west of the two pump-islands. That material was removed to an upper area and placed on plastic.

A third pump island's plumbing was uncovered to the north of the two in-use pump islands. The third abandoned pump island was completely covered with asphalt, and it traversed out to the seventh smaller 5,000 gallon UST. The material removed consisted of sand fill, which was used to fill around the tanks when they were originally installed. A finely laminated indigenous clay was encountered approximately two to three feet beneath the bottom of the tanks, and it acted as a barrier to downward flowing contamination. This clay was saturated with petroleum product and had a very strong odor, but there was no free-product. Driscoll (1986) suggests a range for the hydraulic conductivity of clays of 0.001 - 0.000001 gallons per day per square foot. The clay unit originally extending to the surface, however, was excavated and removed when the tanks were first installed.

A hole 10 feet by 16 feet by 16 feet deep was excavated to expose the isolated 5,000 gallon UST, which was located northeast of pump island #3. That material was also removed and deposited on plastic, located about 40 feet to the southwest of the excavation, for later remediation. The material consisted of sand fill, which had been used to fill in around the tank when it was installed in May, 1984. A finely laminated clay was also encountered approximately two to three feet beneath the bottom of the tank. Again, the material was saturated with petroleum and the odor was extreme, but there was no free-product.

The tanks were inerted, cut, opened, cleaned, and removed by Hydrocarbon Specialty Contractors, Inc. (HSCI), of 124 South Howe, Spokane, Washington. The tanks were legally closed following the procedures below:

Tank G:

Owner/Operator:	Norma Shourd/Bill's Cut Rate Gas
Facility ID:	
Size:	5,000 gallons
Installation Date:	May, 1984
Substance:	Unleaded gasoline
Last Pressure Test:	Not known
Last Used:	March, 1992
Date Removed:	March 5, 1992

4.1.2 Site Data

All the UST's were located east-northeast of the service station on the property of Bill's Cut Rate Gas. The **two (2) 2,000 gallon UST's** were located approximately 10 feet east of the southeast corner of the service station. The bottom of the tanks were located about 12 feet below the ground surface with the long axis in a north-south direction. The **two (2) 10,000 gallon UST's** were located east and northeast of the two (2) 2,000 gallon UST's. The bottom of the tanks were about 14 feet below the ground surface with the long axis in a north-south direction. The **two (2) 6,000 gallon UST's** were located directly east of the two (2) 10,000 gallon UST's. The bottom of the tanks were about 14 feet below the ground surface. The **one (1) 5,000 gallon UST** is located approximately 30 feet northeast of the two (2) 6,000 gallon UST's.

All the tanks were originally placed in a sand fill, which was underlain by a finely laminated clay (Photograph #??). This clay originally extended upward to the surface as was evidenced within the excavation.

4.1.3 Hydrogeologic and Soil Characteristics

a) *Overburden*: Consists of asphalt underlain by sand fill, sitting within a finely laminated indigenous clay.

b) *Drainage and Groundwater*: The area drains to the southwest, towards Lake Chelan, and south towards Chelan Canyon, with a depth to groundwater of approximately 100 feet.

c) *Locations of drinking water wells in the vicinity*: None. The City of Chelan obtains its water supply from Lake Chelan.

d) *Available data from previous soil or groundwater sampling at the site*: None known.

of this conclusion. This site was not approved by the Chelan County Health Department nor the Central Office of the DOE and the contaminated soil was later transported to the East Wenatchee landfill for disposal. The Site Assessor was called to aid in the removal of the soils from the orchard to the Wenatchee Land Fill.

An additional 1,300 yards of contaminated soil was excavated and removed from the subject site. It was transported to another land-farm, located approximately nine miles to the east and south from Bill's Cut Rate Station in Chelan, for "land farming". This land farm site was sought out and found by the owner's legal representative. The Site Assessor was informed that he was not needed for this, and was not consulted for any recommendation. In addition, he was told to go home when he arrived on site at the request of Columbia Construction. The trucker from Larson Demolition insisted that the Site Assessor be present with a Microtip Photoionization Meter or he would not transport the contaminated soil. The owner then changed his mind and asked the Site Assessor to remain to assist in the loading of the trucks. The Site Assessor was not authorized to have anything to do with the "land-farm", or the unloading of the contaminated soils at the "land farm".

4.3 Field Sampling Summary

a.) *Number of samples*: A total of 62 samples were analyzed for this study. A copy of all analyses sheets are attached to this report, as are other sheets locating the samples.

b.) *Type of samples*: Soil. Samples consisted of sand fill and clay.

c.) *Method of collection*: Hand tools. Gloves were worn to avoid contamination of the samples.

d.) *Method of preservation*: Samples were immediately placed in 300 ml borosilicate glass jars, which were then sealed with teflon-lined lid. The samples were placed in a cooler and ice was added (est. 4° C.). Samples were shipped with a "CHAIN OF CUSTODY" form by U.P.S. and/or Greyhound bus, in accordance with Environmental Protection Agency (EPA) and DOE guidelines.

e.) *Analytical laboratory*: Precision Analytics, Inc.
N.E. 2345 Hopkins Court
Pullman, WA 99163

f.) *Factors that may have compromised the quality of the data or the validity of the results*: None

4.4 Sample Results

A total of 62 samples were analyzed for this site. Laboratory results are included (Appendix II) in this report. Sample locations are shown on figures 4 and 5.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Although the tank pulling was completed for the seven (7) UST's located at Bills Cut Rate Gas Station on March 5, 1992, several regulatory delays were encountered, and the last samples were taken on June 15, 1992.

Soil sample analyses were performed by Precision Analytics, Inc., located at Northeast 2345 Hopkins Court, Pullman, Washington. A number of the samples analyzed were above the action levels for total petroleum hydrocarbons (TPH) and for benzene, toluene, ethylbenzene, and xylene (BTEX) compounds set by the State of Washington.

Contamination was found beneath the five UST's and the three pump-islands. No holes were discovered in the tanks when they were cleaned and inspected, thus the problem was deemed to be with the **plumbing of the piping system, and to improper original installation.**

The contaminated soil was removed to East Wenatchee Land Fill, and to a private "land farm" nine miles east and south of Chelan. **In total, over 250 truck loads were excavated and hauled away from the Chelan site, and contaminated soils remained.**

6.0 LIMITATIONS

This report is for the exclusive use of DOE and of Bill's Cut Rate Gas to assist in the evaluation of potential environmental liability associated with the UST's located on the subject property. All work has been performed in accordance with Washington Department of Ecology (DOE) guidelines. No other warranty, expressed or implied is made.

This assessment is a statement that petroleum contamination was present (due to past UST activities) under five tanks and three pump-islands on the site, and that contaminated soils remain. This finding is supported by the sample results, but is limited to the

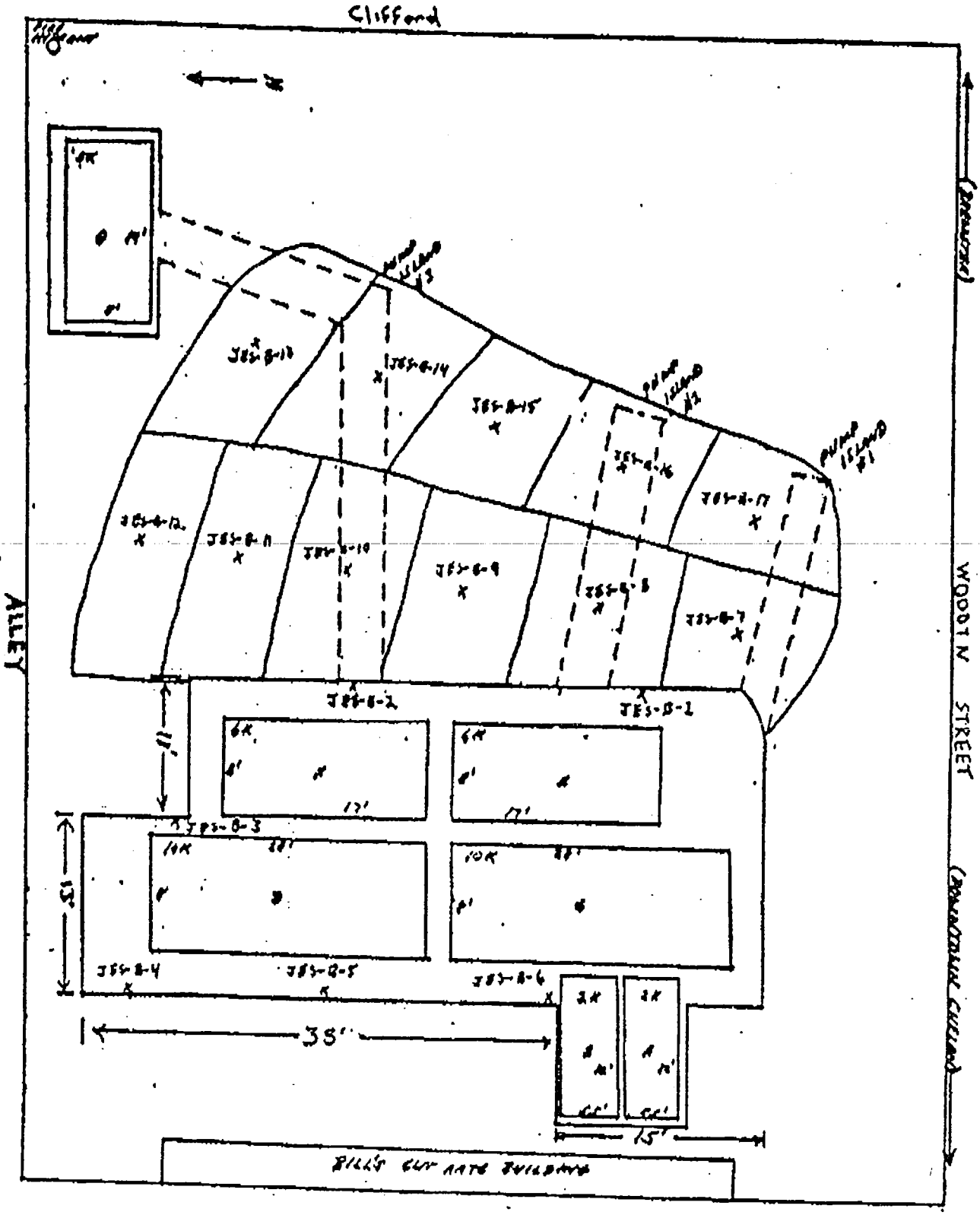


Figure 4: Sample location map #1