

SITE HAZARD ASSESSMENT OF
EXTINE PETROLEUM
1819 SH 508, ONALASKA, WA 98570
WDOE FACILITY # 1171

CONTENTS OF FILE

August 28, 2001

1. Site Hazard Assessment of Exline Petroleum, by Steve Garrett, August 28, 2001
Sources:
 1. Laboratory Analysis Report from Columbia Analytical Services, Kelso, WA, July 2, 2001.
 2. Site visit by Steve Garrett of Lewis County Environmental Health, and Michael Spencer of WDOE, June 6, 2001
 3. Lewis County Auditor's Report showing owner of record and parcel map, two pages.
 4. Lewis County Road Atlas, 1996
 5. WDOE's, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
 6. WDOE's WARM Scoring Manual, April 1992
 7. Table of Evapotranspiration Data.
 8. Flood Insurance Rate Maps, (FIRM).
 9. US EPA SITEINFO GIS Query for lat./long. Of site, Report # 69434.
 10. Ecology Water Rights Information System (WRATS) Report 8/17/2001.
 11. Sampling Notes, June 14, 2001, S. Garrett
 12. Soil Survey of Lewis County Area, WA USDA SCS, 1987
 13. Phone conversation with Lewis County Water District 2, 8/21/2001.
2. Soil Sampling and Analysis Plan with Site Map showing proposed and overwriten with actual sampling locations.
3. Site Safety and Health Plan, 6/14/2001
4. Letter to property owner, Kevin Kent, from WDOE, indicating intent to conduct SHA, March 1, 2001
5. Letter to property owner, Kevin Kent, from LCFH describing ranking of site.

WORKSHEET 1
SUMMARY SCORE SHEET

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

Exline Petroleum
1819 SH 508
Onalaska, Lewis County, WA 98570

TPN 32778-003-000

Latitude: 46° 34m 33s
Longitude: 122° 43m 4s
Site ranked for August 2001 update.

Author of report: Steven J. Garrett, RS, Lewis County Environmental Health

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

In response to a report of potential contamination at the long time bulk fuel facility at 2568 SH 508 in Onalaska, Washington Department of Ecology (WDOE) conducted an initial investigation on October 13, 1992. Conditions observed at the facility indicated soil contamination and a potential for groundwater contamination. The site was subsequently placed on WDOE's Confirmed and Suspected Contaminated Sites List.

On June 6, 2001, Michael Spencer of WDOE and Steve Garrett of Lewis County Environmental Health, conducted a site inspection and collected soil samples for analysis of contaminants at a commercial laboratory. Laboratory results of soil samples taken at the site on 6/14/2001 indicate the following:

Sample E-1 indicated non detect for petroleum hydrocarbon screen.
Sample E-2 at 12 inches depth: diesel 1500ppm, gasoline 14ppm.
Sample E-3 at 18 inches depth: diesel 4800ppm, gasoline 1500ppm.

The laboratory results of Sample E-3 will be used to rank the Exline site according to the Washington Ranking Method (WARM).

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

ROUTE SCORES:

Surface Water/Human Health: 2.9
Air/Human Health: 16.4
Air/Environmental: 9.3
Ground Water/Human Health: 41.6

OVERALL RANK 5

1. SURFACE WATER ROUTE

List those substances to be considered for scoring: Source: 1,2
TPH Diesel and TPH Gasoline

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

Analytical results from soil samples showed concentrations greater than the respective Method A MTCA cleanup levels for TPH Diesel and TPH Gasoline.

List those management units to be considered for scoring: Source: 1,2

Contaminated on-site surface and subsurface soils.

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

Chemical analyses of on-site soils indicated significant concentrations of TPH diesel and TPH Gasoline.

2. AIR ROUTE

List those substances to be considered for scoring: Source: 1,2
TPH Diesel, and TPH Gasoline

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

Analytical results from soil samples showed concentrations greater than the respective Method A MTCA cleanup levels for TPH Diesel and TPH Gasoline.

List those management units to be considered for scoring: Source: 1,2

Contaminated on-site surface and subsurface soils.

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

Chemical analyses of on-site surface soils indicated significant concentrations of TPH Diesel and TPH Gasoline, with no vapor collection system.

3. GROUND WATER ROUTE

List those substances to be considered for scoring: Source: 1,2

TPH Diesel and TPH Gasoline

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

Analytical results from soil samples showed concentrations greater than their respective Method A MTCA cleanup levels for TPH Diesel and TPH Gasoline.

List those management units to be considered for scoring: Source: 1,2

Contaminated on-site surface and subsurface soils.

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

Chemical analyses of on-site surface soils indicated significant concentrations of TPH Diesel and TPH Gasoline.

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Drinking Water Standard	Substance	(ug/l) Val.	(mg/kg-bw) Val.	(mg/kg/day) Val.	Chronic Toxicity	Carcino-genicity
1. TPH Diesel	20	6	490 (rat)	5	0.004	3 A
2. TPH Gasoline	5	8	3306 (rat)	3	ND	NS
Potency Factor	Source: 1,2,5,6					
Highest Value:	(Max.=10) 8					

+2 Bonus Points? 2
Final Toxicity Value: 10 (max.+12)

1.2 Environmental Toxicity

Substance	(ug/l) Value	(mg/kg) Value	Non-human Mammalian
1. TPH Diesel	20	2	Acute Toxicity
2. TPH Gasoline	5	2	Acute Toxicity

(max.+10) 2

1.3 Substance Quantity: Total Unknown
Source: 1,2,6 Value: 1
Explain basis: use default value + 1 (max.+10)

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment Explain basis: Management unit scored as a spills/discharges/contaminated soil
Occurs only in the subsurface, but less than 24 inches.
Source: 2,6 Value: 0 (Max.=10)

2.2 Surface Soil Permeability: #48 Chehalis silty clay Source: 1,2,6,12 Value: 7 (Max.=7)
2.3 Total Annual Precipitation: 45.4 inches Source: 7 Value: 3 (Max.=5)
2.4 Max. 2-Yr/24-hour Precipitation: 2-3.5 inches Source: 6 Value: 3 (Max.=5)
2.5 Flood Plain: no! Source: 8 Value: 0 (Max.=2)
2.6 Terrain Slope: 2-5% Source: 2,3,6 Value: 2 (Max.=5)
Note: site has been filled, was probably 2-5% originally.

3.0 TARGETS

3.1 Distance to Surface Water: <1000' Source: 1-4 Value: 10 (Max.=10)
3.2 Population Served within 2 miles (See WARM Scoring Manual Regarding Direction): $\sqrt{\text{pop.}} = \sqrt{0} = 0$ Source: 9,10 Value: 0 (Max.=75)
3.3 Area Irrigated within 2 miles = 826 acres; $0.75\sqrt{\text{no. acres}} = 22$ Source: 10 Value: 22 (Max.=30)
3.4 Distance to Nearest Fishery Resource: abt 3000 feet Source: 1,2,4,8,9 Value: 4
Newaukum River (Max.=12)
3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Fishery 3000 feet Source: 1,2,4,8,9 Value: 4 (Max.=12)

4.0 RELEASE

Explain basis for scoring a release to surface water: Source: 1,2 Value: 0 (Max.=5)
None documented by analytical evidence.

1.0 SUBSTANCE CHARACTERISTICS

- ## 1.1 Introduction (WARM Scoring Manual) - Please review before scoring

- ## 1.2 Human Toxicity

Substance	Air	Acute	Chronic	Carcino- genicity
1.TPH Diesel	166.5 4	ND	ND	ND
2.TPH Gasoline	0.12 10	31947 (rat) 3	ND	A 0.029
	(ug/m ³) Val.	(mg/m ³) Val.	(mg/kg/day) Val.	MOE PF ^a Val.

*Potency Factor

Source: 1, 2, 5, 6
Highest Value: 10
(Max. = 10)

(Max. = 10)

+2 Bonus Points? 0

Final Toxicity Value: 10 (Max.=12)

 $(\text{Max}, 12)$

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

- 1.3.1 Gaseous Mobility

Vapor Pressure(s) (mmHg): 1) 8.2E-02 = 3; Source: 2,5,6

$$2) 9,5E=+01,7 = 4$$

Value:

- 1.3.2 Particulate Mobility N/A

Soil type:

Source:

Productivity:

Value: (Max.=4)

Climate Factor:

- 1.4 Highest Human Health Toxicity/Mobility Matrix Value (from

ality Matrix Value (from

Table A-7) equals Final Matrix Value: 20 (Max, π)

(MAX, =24)

- 1.5 Environmental Toxicity/Mobility

Source: 2, 5, 6

Substance	Inhal. Toxicity (mg/m ³) Value	Mobility (mmHg) Value	Value Matrix Value
Non-human Mammalian Acute			

1. TPH Diesel

2. TPH Gaso

31947 (rat)

9.5E+01

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9

Highest Environmental Toxicity/Mobility Matrix Value

(From Table A-7) equals Final Matrix Value: $\frac{(Max, = 24)}{6}$

9

WORKSHEET 5 (CONTINUED)
AIR ROUTE

1.6 Substance Quantity: unknown Source: 1,2,6 Value: 1
(Max.=10)
Explain basis:

2.0 MIGRATION POTENTIAL

2.1 Containment: Vapor: Cover<2 feet and no vapor Source: 1,2,6 Value: 10
(Max.=10)
collection system.

3.0 TARGETS

3.1 Nearest Population: < 1000 feet Source: 1,2,4,9 Value: 10
(Max.=10)
3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Wetlands, 2000 - 3000 feet Source: 1,2,4,9 Value: 5
(Max.=7)

3.3 Population within 0.5 miles: $0. \sqrt{\text{pop.}} = \sqrt{84} = 9$ Source: 1,2,9 Value: 9
pop 0-1 mile=337, 0.25 (337) = pop 0-.5 miles=84
(Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: None Source: 2,6 Value: 0
(Max.=5)
documented.

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Drinking Water Standard	Substance	1. TPH Diesel	2. TPH Gasoline
(ug/l) Val.	(mg/kg-bw) Val.	(mg/kg/day) Val.	WOE PF*
6	3306	3	ND
5	3306	ND	0.029 5
8	3306	ND	

*Potency Factor

Source: 1,2,5,6
Highest Value: 8
(Max.=10)
+2 Bonus Points? 2
Final Toxicity Value: 10
(max.=12)

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions: _____
Source: _____
Value: 3
(Max.=3)

Or

Solubility(mg/l): 1) 3.0E+01 = 1 2) 1.8E+03 = 3;
Source: 1,5,6

1.3 Substance Quantity: unknown
Explain basis: _____
Source: 2,6 Value: 1
(Max.=10)

2.0 MIGRATION POTENTIAL

2.1 Containment
Explain basis: Spills, discharge to soil = 10
Source: 1,2,6 Value: 10
(Max.=10)

2.2 Net Precipitation: 27.9 inches
Source: 7 Value: 3
(Max.=5)

2.3 Subsurf. Hydraul. Conduct.: #48, Chehalis Silty Clay
Source: 1,2,6,12 Value: 2
(Max.=4)

2.4 Vertical Depth to Ground Water: <25 feet
Source: 2,6,13 Value: 8
(Max.=8)

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

3.1	Ground Water Usage: private supply but alternate sources available with minimum requirements.	Source: 2, 9, 13	Value: 4	(Max.=10)
3.2	Dist. to Nearest Drinking Water Well: abt 1000 feet	Source: 2, 9, 13	Value: 4	(Max.=5)
3.3	Population Served within 2 miles: $\sqrt{\text{pop.}} = \sqrt{0} = 31$	Source: 9,	Value: 31	(Max.=100)
3.4	Area Irrigated by (Groundwater) Wells within 2 miles: $0.75\sqrt{\text{no. acres}} = 0.75\sqrt{532} = 17$	Source: 9, 10	Value: 17	(Max.=50)
4.0	RELEASE Explain basis for scoring a release to ground water: None documented by analytical data	Source: 2,	Value: 0	(Max.=5)

SOURCES USED IN SCORING

1. Laboratory Analysis Report from Columbia Analytical Services, Kelso, WA, July 2, 2001
2. Site visit by Steve Garrett of Lewis County Environmental Health, and Michael Spencer of WDOH, June 6, 2001.
3. Lewis County Auditor's report showing owner of record and parcel map, two pages.
4. Lewis County Road Atlas, 1996.
5. Washington Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
6. Washington Department of Ecology, WARM Scoring Manual, April 1992.
7. See attached table identified as Reference 7, evapotranspiration data.
8. Flood Insurance Rate Maps (FIRM).
9. U.S. EPA SITEINFO GIS Query for lat./long. of site, Report # 69434.
10. Ecology Water Rights Information System (WRIS), report 8/17/2001.
11. Sampling Notes, June 14, 2001, S. Garrett
12. Soil Survey of Lewis County Area, WA, USDA SCS, 1987.
13. Phone conversation with Lewis County Water District 2, 8/21/2001



Service Request No: K2104194

July 2, 2001

Steve Garrett
Lewis County Department of Environmental Health
350 N. Market Blvd.
Chehalis, WA 98532

Re: Extin Petroleum/1171

Dear Steve:

Enclosed are the results of the sample(s) submitted to our laboratory on June 14, 2001. Preliminary results were transmitted via facsimile on June 21, 2001 and June 29, 2001. For your reference, these analyses have been assigned our service request number K2104194.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3280.

Respectfully submitted,

Columbia Analytical Services, Inc.

Les Kennedy
Project Chemist

LK/ee

Page 1 of

17

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- U The compound was analyzed for, but was not detected ("Non-detected") at or above the MRL/MDL.
- I The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- B The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- E The reported value is estimated because of the presence of matrix interference.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The compound was analyzed for, but was not detected ("Non-detected") at or above the MRL/MDL.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- I The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.
- * The duplicate analysis is not within control limits. See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
- U The compound was analyzed for, but was not detected ("Non-detected") at or above the MRL/MDL.
- I The MRL/MDL has been elevated due to a chromatographic interference.
- X See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- I The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

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Chain of Custody Documentation



CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

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PROJECT NAME EXTINE PETROLEUM PROJECT NUMBER # 1171 PROJECT MANAGER S. GARETT COMPANY/ADDRESS LEWIS CO. ENV. HEALTH PHONE # 300-740-1233 FAX # 300-740-1245 SAMPLER'S SIGNATURE				RECEIVED BY: Signature: _____ Date/Time: _____ Printed Name: _____	
RELINQUISHED BY: Signature: _____ Date/Time: _____ Printed Name: _____				RECEIVED BY: Signature: _____ Date/Time: _____ Printed Name: _____	

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	SPECIAL INSTRUCTIONS/COMMENTS:									
E-1	6/14/01	9:53		1	SOIL	Circle which metals are to be analyzed: Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg									
E-2	6/14/01	10:09		2	SOIL										
E-3	6/14/01	10:11		3	SOIL										

REPORT REQUIREMENTS I. Routine Report: Method Blank, Surrogate, as required II. Report Dup., MS, MSD as required III. Data Validation Report (includes all raw data) IV. CLP Deliverable Report V. EDD	INVOICE INFORMATION P.O. # _____ Bill To: _____ TURNAROUND REQUIREMENTS 24 hr. _____ 48 hr. _____ 5 Day _____ Standard (10-15 working days) Provide FAX Results Requested Report Date _____
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Samples that required preservation or received out of temperature:

YES NO

Were custody seals on outside of cooler?

If yes, how many and where?

Where seals intact and signature & date correct.

COC #

Temperature of cooler(s) upon receipt:

Temperature Blank:

Were custody papers properly filled out (ink, signed, etc.)?

Type of packing material present

Did all bottles arrive in good condition? (unbroken)?

Were all bottle labels complete (i.e. analysis, preservation, etc.)?

Did all bottle labels and tags agree with custody papers?

Were the correct types of bottles used for the tests indicated?

Were all of the preserved bottles received at the lab with the appropriate pH?

Were VOA vials checked for absence of air bubbles, and if present, noted below?

Did the bottles originate from CAS/K or a branch laboratory?

Work Order K21

~~Copier received on 2/14/01 and opened on~~

— and opened on

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Columbia Analytical Services Inc.
Cooler Receipt And Preservation Form

Total Solids

Total Solids

Units: PERCENT
Basis: WET

Prep Method:
Analysis Method:
Test Notes:

NONE
160.3M

Result
Notes

Result

Date

Date

Date

Lab Code

Sample Name

E-1
E-2
E-3

78.9	06/18/2001	06/14/2001	06/14/2001	06/14/2001	K2104194-001
80.5	06/18/2001	06/14/2001	06/14/2001	06/14/2001	K2104194-002
74.2	06/18/2001	06/14/2001	06/14/2001	06/14/2001	K2104194-003

Petroleum Hydrocarbon Scan (HCID)

Analytical Report

Client: Lewis County Dept. of Env. Health
 Project: Exline Petroleum/1171
 Sample Matrix: Soil
 Service Request: K2104194
 Date Collected: 6/14/01
 Date Received: 6/14/01

Hydrocarbon Identification Screen

Sample Name: E-1
 Lab Code: K2104194-001
 Test Notes: Units: mg/Kg (ppm)
 Basis: Dry

Analyte	Prep	Method	Analysis	MRL	Dilution	Factor	Extracted	Analyzed	Result	Notes
Gasoline Range Organics	EPA 3550B	NWTPH-HCID	20	1	1	6/15/01	6/16/01	ND		
Diesel Range Organics	EPA 3550B	NWTPH-HCID	50	1	1	6/15/01	6/16/01	ND		
Residual Range Organics	EPA 3550B	NWTPH-HCID	100	1	1	6/15/01	6/16/01	ND		

Approved By: 

Date: JUN 20 2001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Lewis County Dept. of Env. Health
 Project: Exline Petroleum/1171
 Sample Matrix: Soil
 Service Request: K2104194
 Date Collected: 6/14/01
 Date Received: 6/14/01

Hydrocarbon Identification Screen

Sample Name: E-2
 Lab Code: K2104194-002
 Test Notes:
 Units: mg/Kg (ppm)
 Basis: Dry

Analyte	Prep	Method	Analysis	MRL	Dilution	Factor	Extracted	Date	Analyzed	Result	Notes
Gasoline Range Organics	EPA 3550B	NWTPH-HCID	20	1	1	6/15/01	6/16/01	D			
Diesel Range Organics	EPA 3550B	NWTPH-HCID	50	1	1	6/15/01	6/16/01	D			
Residual Range Organics	EPA 3550B	NWTPH-HCID	100	1	1	6/15/01	6/16/01	D			

Detected at or above the method reporting limit. Follow-up analyses are required for quantitative results.

D

Approved By: 

1S22/020597p

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Page No.:

Date: JUN 20 2001 00008

Analytical Report

Client: Lewis County Dept. of Env. Health
 Project: Exline Petroleum/1171
 Sample Matrix: Soil
 Service Request: K2104194
 Date Collected: 6/14/01
 Date Received: 6/14/01

Hydrocarbon Identification Screen

Sample Name: E-3
 Lab Code: K2104194-003
 Test Notes:
 Units: mg/Kg (ppm)
 Basis: Dry

Analyte	Prep	Method	Analysis	MRL	Dilution	Date	Date	Result	Notes
Gasoline Range Organics	EPA 3550B	NWTPH-HCID	20	1	6/15/01	6/16/01	D		
Diesel Range Organics	EPA 3550B	NWTPH-HCID	50	1	6/15/01	6/16/01	D		
Residual Range Organics	EPA 3550B	NWTPH-HCID	100	1	6/15/01	6/16/01	D		

Detected at or above the method reporting limit. Follow-up analyses are required for quantitative results.

D

Approved By: *Mc*

Date: JUN 20 2001

1S22/020597p

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Analytical Report

Client: Lewis County Dept. of Env. Health
 Project: Extine Petroleum/1171
 Sample Matrix: Soil

Service Request: K2104194
 Date Collected: NA
 Date Received: NA

Hydrocarbon Identification Screen

Units: mg/Kg (ppm)
 Basis: Dry

Sample Name: Method Blank
 Lab Code: K010615-MB
 Test Notes:

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Extraction Date	Analysis Date	Result	Notes
Gasoline Range Organics	EPA 3550B	NWTPH-HCID	20	1	6/15/01	6/16/01	ND	
Diesel Range Organics	EPA 3550B	NWTPH-HCID	50	1	6/15/01	6/16/01	ND	
Residual Range Organics	EPA 3550B	NWTPH-HCID	100	1	6/15/01	6/16/01	ND	

Approved By: *[Signature]*

Date: JUN 20 2001

1522/020597p

04194PHCL1.1 - MB 6/20/01

Page No.:

00010

QA/QC Report

Client: Lewis County Dept. of Env. Health
 Project: Extine Petroleum/1171
 Sample Matrix: Soil

Service Request: K2104194
 Date Collected: 6/14/01
 Date Received: 6/14/01
 Date Extracted: 6/15/01
 Date Analyzed: 6/16/01

Prep Method: EPA 350B
 Analysis Method: NWTPH-HCID
 Units: PERCENT
 Basis: NA

Sample Name	Lab Code	Test	Notes	o-Terphenyl	4-Bromofluorobenzene	n-Triacontane
E-1	K2104194-001			91	54	88
E-2	K2104194-002			90	79	87
E-3	K2104194-003			81	91	88
Method Blank	K010615-MB			96	60	90

CAS Acceptance Limits: 50-150 20-150 50-150

Approved By: 

Date: JUN 20 2001

Diesel Range Organics

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Lewis County Dept. of Env. Health
 Project: Extine Petroleum
 Sample Matrix: Soil
 Service Request: K2104194
 Date Collected: 06/14/2001
 Date Received: 06/14/2001

Diesel and Residual Range Organics

Sample Name: E-2
 Lab Code: K2104194-002
 Extraction Method: EPA 3550B
 Analysis Method: NWTPH-Dx
 Units: mg/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result Q	MRL	Dilution	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	1500 F	30	1	06/15/01	06/16/01	KWG0103388	
Residual Range Organics (RRO)	470 O	120	1	06/15/01	06/16/01	KWG0103388	
Surrogate Name	%Rec	Control Limits	Date Analyzed	Note			
o-Terphenyl	90	50-150	06/16/01	Acceptable			
n-Tricontane	87	50-150	06/16/01	Acceptable			

Comments:

00012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Lewis County Dept. of Env. Health

Exline Petroleum

Soil

Sample Matrix:

Client:
Project:

Service Request: K2104194
Date Collected: 06/14/2001
Date Received: 06/14/2001

Diesel and Residual Range Organics

Sample Name: E-3
Lab Code: K2104194-003
Extraction Method: EPA 3550B
Analysis Method: NWTPH-Dx
Units: mg/Kg
Basis: Dry
Level: Low

Analyte Name	Result Q	MRL	Dilution	Factor	Extraction Date	Analyzed Date	Lot	Note
Diesel Range Organics (DRO)	4800 F	34	1	1	06/15/01	06/16/01	KWG0103388	
Residual Range Organics (RRO)	250 O	130	1	1	06/15/01	06/16/01	KWG0103388	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	81	50-150	06/16/01	Acceptable
n-Triacontane	88	50-150	06/16/01	Acceptable

Comments:

00013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Lewis County Dept. of Env. Health
 Project: Extine Petroleum
 Sample Matrix: Soil

Diesel and Residual Range Organics

Sample Name: Method Blank
 Lab Code: KWG0103388-3
 Extraction Method: BPA 3550B
 Analysis Method: NWTPH-Dx
 Units: mg/Kg
 Basis: Dry
 Level: Low

Analyte Name	Result Q	MRL	Dilution	Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND U	25	1	1	06/15/01	06/16/01	KWG0103388	
Residual Range Organics (RRO)	ND U	100	1	1	06/15/01	06/16/01	KWG0103388	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	96	50-150	06/16/01	Acceptable
n-Triacontane	90	50-150	06/16/01	Acceptable

Comments:

00014

Gasoline Range Organics

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Lewis County Dept. of Env. Health
 Project: Extine Petroleum
 Sample Matrix: Soil

Gasoline Range Organics

Sample Name: E-2
 Lab Code: K2104194-002
 Extraction Method: EPA 5035/5030B
 Analysis Method: NWTPH-Gx
 Units: mg/Kg
 Basis: Dry
 Level: Med

Analyte Name	Result Q	MRL	Dilution	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	14 F	5.2	1	06/23/01	06/24/01	KWG0103616	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	99	50-150	06/24/01	Acceptable

Comments:

00015

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Lewis County Dept. of Env. Health
Project: Extine Petroleum
Sample Matrix: Soil

Service Request: K2104194
Date Collected: 06/14/2001
Date Received: 06/14/2001

Gasoline Range Organics

Sample Name: H-3
Lab Code: K2104194-003
Extraction Method: EPA 5035/5030B
Analysis Method: NWTPH-Gx

Units: mg/Kg
Basis: Dry
Level: Med

Analyte Name	Result Q	MRL	Dilution	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	1500 F	57	1	06/23/01	06/26/01	KWG0103616	
Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	Acceptable		
4-Bromofluorobenzene	65	50-150	06/26/01				

Comments:

00016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Lewis County Dept. of Env. Health
Project: Exline Petroleum
Sample Matrix: Sediment

Service Request: K2104194
Date Collected: NA
Date Received: NA

Gasoline Range Organics

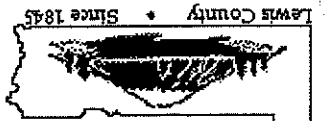
Sample Name: Method Blank
Lab Code: KWG0103616-4
Extraction Method: EPA 5035/5030B
Analysis Method: NWTPH-Gx

Units: mg/Kg
Basis: Dry
Level: Med

Analyte Name	Result Q	MRL	Dilution	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics (GRO)	ND U	4.2	1	06/23/01	06/23/01	KWG0103616	
Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	Acceptable		
4-Bromofluorobenzene	105	50-150	06/23/01		Acceptable		

Comments:

00017



Property Account Summary

Account No.: 032778003000 Alternate Property Number:

Account Type: Real Property

TCA: 545

Located On:

Site Address: 0 ST HWY 508

ONALASKA, WA

Legal: MP 135129-3 PART SW4 SW4 DESCRIBED IN 447/119 29-13-1E

Parties:

Role Name & Address

Owner KENT, KEVIN RUSSELL

PO BOX 373

SALKUM, WA 98582

Taxpayer KENT, KEVIN RUSSELL

PO BOX 373

SALKUM, WA 98582

Property Values:

Value Name	2002	2001	2000
Taxable Value Regular	\$17,400	\$17,400	\$17,400
Market Total	\$17,400	\$17,400	\$17,400
Assessed Value	\$17,400	\$17,400	\$17,400
Market Land	\$9,000	\$9,000	\$9,000
Market Improvement	\$8,400	\$8,400	\$8,400

Property Characteristics:

Tax Year	Characteristic	Value
2002	Use Code	69 Service - Miscellaneous

Exemptions:

(End of Report)

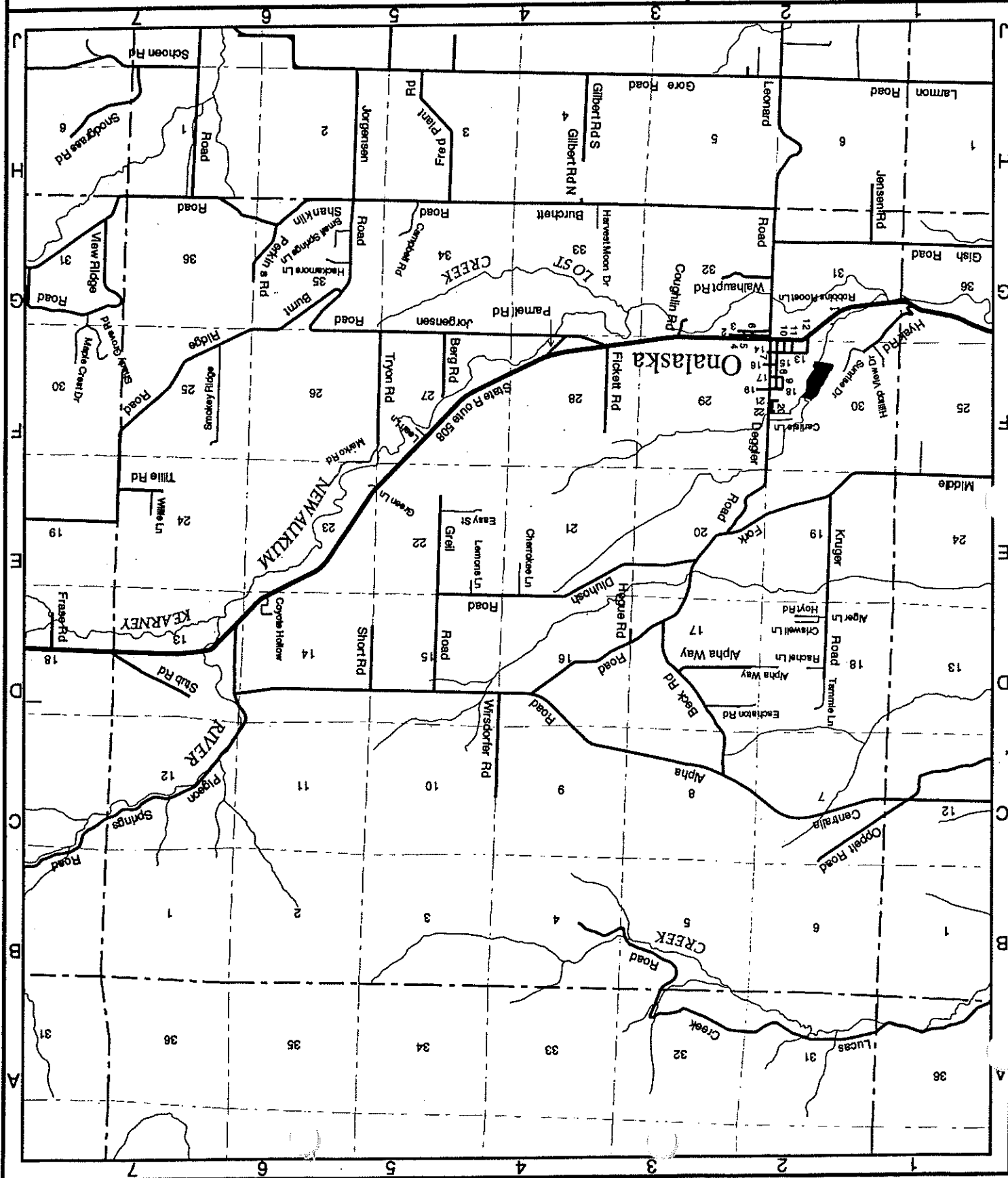
- LEGEND**
- State Highway
 - County Road
 - City Street
 - Private Road

Lewis County, Washington

Scale: 1" = 1 Mile

Twp. 13 N. Rge 1 E.

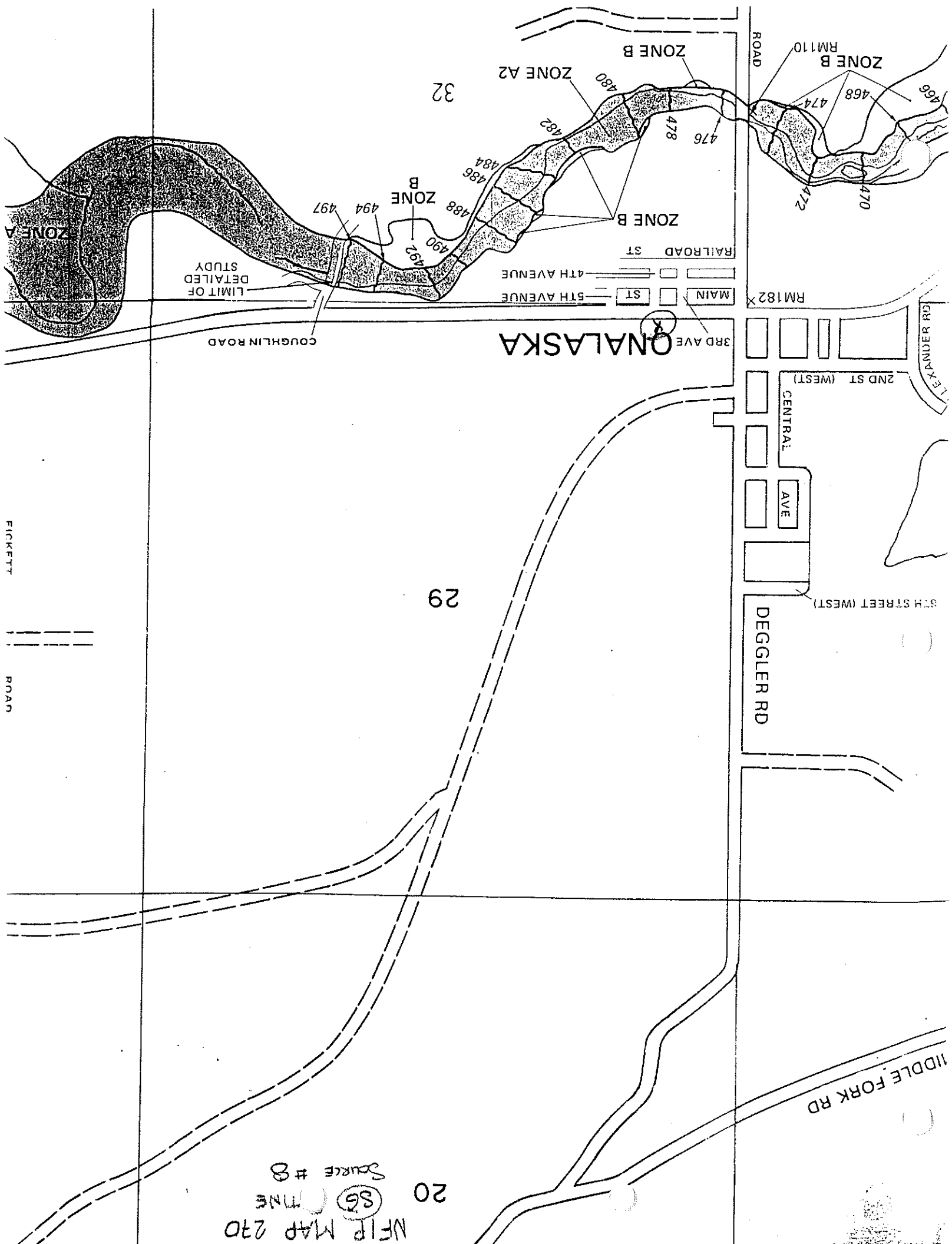
21	22	27
19	20	25
17	18	



(Precipitation (Precip), Potential Evap
the 6-inch waterholding capacity soil

[illegible]

TABLE 16--ESTIMATED EVAPOTRANSPIRATION
(Inches of water)



NEIP MAP 270
S9
TINE
Source #8

20

29

32

FICKETT

ROAD

=====

EPA GEOGRAPHIC INFORMATION QUERY SYSTEM (Version 97.1.8) 08/21/01

=====

Title : Extline3
Sub-Title: Unspecified

LEWIS County, WA.

Location in Lat/Long: 46 34 33 122 43 4 (DMS)

US Albers: X = -361289 Y = 546854 (Meters)

Map Scale: Auto Fit to 15 x 11

Notes:

Read Notes on accuracy and extent of all GIS database coverages!!!

Note Version id on top line as we are continuously upgrading data layers, quality, and calculation methods for this report and associated graphics.

Disclaimer:

This computer representation has been compiled by the Environmental Protection Agency (EPA) from sources which have supplied data or information that has not been verified by the EPA. This data is offered here as a general representation only, and is not to be used for commercial purposes without verification by an independent professional qualified to verify such data or information. The EPA does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any loss or injury resulting from reliance upon the information shown.

*** End of Notes ***

<ff>

** EPA Regulated Site / Management Information **

Indian Nation Information

Site apparently not located within 1 mile any Indian Nation areas.

=====

EPA Facility Databases Information

=====

Distance Range From 0 to 1 mile(s):

CERCLA: 0 sites in distance 0 to 1 mile(s):

RCRA TSD: 0 sites in distance 0 to 1 mile(s):

Toxic Release Inventory (TRI): 0 sites in distance 0 to 1 mile(s):

NPDES (Mostly Majors): 2 sites in distance 0 to 1 mile(s):

Rec#1946 Fac ID:WA0024546 Lat/Long: 0 0

Name: LEWIS CO WATER DIST 2 ONALASKA

Plant: City: ONALASKA

Major:

Rec#2241

Name: QUALICAST FOUNDRY INC

Lat/Long: 46 34 16 122 43 39

Plant: City:
Major:

AIRS/AFS: 0 sites in distance 0 to 1 mile(s):

Distance Range From 1 to 2 mile(s):

CERCLA: 0 sites in distance 1 to 2 mile(s):

RCRA TSD: 0 sites in distance 1 to 2 mile(s):

Toxic Release Inventory (TRI): 0 sites in distance 1 to 2 mile(s):

NPDES (Mostly Majors): 0 sites in distance 1 to 2 mile(s):

AIRS/AFS: 0 sites in distance 1 to 2 mile(s):

<ff>

** Human Health Factors/Concerns **

Population Factors Using 1990 Census Data

Approximate Population and Demographic Analysis

Notes:

1) Based on summing Census Tract/Block centroids within distance ranges.

A portion of actual block may extend beyond distance (overcount),

or portions of some blocks may be within distance but centroid

is outside (undercount). Usually within 5% in the 1 to 5 mile range.

2) The Hispanic Origin category is defined as an ethnic category, not as a race in the official Census definitions. Hispanic Origin may include counts from any of the Census race categories including White. PL171 Census data included a cross tabulation of origin versus race. Our definition for Total People of Color is Total Population - White Origin as tabulated in the PL171

data. The individual race summaries are summarized as originally defined.

Distance Range 0 to 1 mile(s):

20 Census Tract/Block Centroids within area

Household Units = 123

Total Population = 337

Age Over 18 = 218

Age Under 18 = 119

By Race: White = 332 98.5% 35.3% Stats

Black = 0 0% 2.3%

Amer Indian = 1 0.3% 1.5%

Asian = 0 0% 3.3%

Other = 4 1.2% 2.3%

By Origin: Hispanic Org = 10 3.0% 4.4%

Total People of Color = 11 3.3% 11.3% See note 2.

Average Pop Density per sq mi = 107 (Centroids/Described Area)

Distance Range 0 to 2 mile(s):

27 Census Tract/Block Centroids within area

Household Units = 275

Total Population = 741

Age Over 18 = 475

Comparison ID, OR, WA

08/22/2001 08:09 AM

Washington Stream Segments with Fisheries Catch Data: DATABASE NOT AVAILABLE.

Distance Range 0 to 1 mile(s):

Food Chain Information

Washington Public Surface Water Intakes: DATABASE NOT AVAILABLE.

Distance Range 1 to 2 mile(s):

Washington Public Surface Water Intakes: DATABASE NOT AVAILABLE.

Distance Range 0 to 1 mile(s):

Public Surface Water Supply Information

System ID: 13N 01E 29A1 SP
Name: LEWIS CO WTR DIST #2
State Permit#: 470013
Lat/Long: 463515 1224155
Total System Population Served = 940.

Washington Public Groundwater Supply Wells: 1 found

Distance Range 1 to 2 mile(s):

System ID: 463440122431101
Name: LEWIS CO WTR DIST #2
State Permit#: 470013
Lat/Long: 463440 1224311
Total System Population Served = 940.

Washington Public Groundwater Supply Wells: 1 found

Distance Range 0 to 1 mile(s):

Public Groundwater Supply Information

Site apparently not located within 1 mile of any Sole Source Aquifer areas.

Groundwater Sole Source Aquifer Information

<FF>

Average Pop Density per sq mi = 58 (Centroids/Described Area)

Age Under 18 =	266	35.9%	Stats
By Race: White	733	98.9%	90.6%
Black	0	0%	2.3%
Amer Indian	4	0.5%	1.5%
Asian	0	0%	3.3%
Other	4	0.5%	2.3%
By Origin: Hispanic Org =	19	2.6%	4.4%
Total People of Color =	23	3.1%	11.3%
			See note 2.

Distance Range 1 to 2 mile(s) :

Washington Stream Segments with Fisheries Catch Data: DATABASE NOT AVAILABLE.

<ff>

** Ecosystem/Sensitive Environments Factors/Concerns **

=====
National Park Information

Site apparently not located within 1 mile any National Park areas.

=====
Priority/Sensitive Animals, Plants, and Habitats

In general, agreements, concerns, and legislative requirements with the providers of the following databases prevent us from plotting and/or analyzing in more detail the sensitive areas and points on maps that may be released to the general public. Contact the local database source for the most recent or further detailed information.

State Natural Heritage Databases
Individual State Heritage Programs compile databases containing significant site observations of selected species of concern, including federal and state species listed threatened, endangered, sensitive and other priority species.

Washington Priority Habitats and Species
Database from Washington Dept of Fish & Wildlife - Jan 1994.
Includes priority habitats and species information. May include DUPLICATE information from the Washington Heritage database. Contact the WDW Data Request Line (Lori Adkins) at 360-902-2543 for more information.

=====
State Heritage Databases

Sorry -- Due to restrictive distribution agreements with the State Heritage Database programs, this information is available for internal EPA users only. You must separately contact the individual State Heritage programs for info.

Washington Natural Heritage Program
Mail: snmm490@wadnr.gov
Phone: 360-902-1667

=====
Washington Priority Habitats and Species

Distance Range 0 to 1 mile(s) :

Washington - Priority Habitats/Species areas/points: 1/0 within area
Areas below may be overlapping - Actual total of areas = 53.4 acres.
Also, portions of the Spec/Hab areas may lay outside of selected area.

Spec/Hab: Bald Eagle Species Use: Regular Small Concentration
Desc: CARLISLE LAKE, USED BY REGULAR SMALL CONCENTRATIONS OF BALD EAGLES FO
R WINTERING' AND FEEDING'

Areas= 1 Sum Area= 53.4 acres

Distance Range 1 to 2 mile(s) :

Washington - Priority Habitats/Species areas/points: 0/0 within area

Wetlands Areas

Portions of any reported wetland area(s) may lay outside of the actual specified distance range.
Washington Database from USF&W National Wetlands Inventory (NWI).
Obtained from Washington Dept Ecology in 1992. We are reporting only a subset of wetland type: US EM FO RS SB SS.

Distance Range 0 to 1 mile(s) :

Washington Wetlands (USF&W NWI) : 50 within area
5 Wetland(s) with FWS Code: PFOA and total area of 27.5 acres.
18 Wetland(s) with FWS Code: PSSC and total area of 103.0 acres.
17 Wetland(s) with FWS Code: PEMC and total area of 138.5 acres.
1 Wetland(s) with FWS Code: PEMKX and total area of 1.1 acres.
1 Wetland(s) with FWS Code: PEMAX and total area of 2.2 acres.
6 Wetland(s) with FWS Code: PFOC and total area of 84.3 acres.
1 Wetland(s) with FWS Code: R3USA and total area of 0.5 acres.
1 Wetland(s) with FWS Code: R3USC and total area of 0.4 acres.
Total area of wetlands= 357.7 acres.

Distance Range 1 to 2 mile(s) :

Washington Wetlands (USF&W NWI) : 83 within area
30 Wetland(s) with FWS Code: PEMC and total area of 109.3 acres.
18 Wetland(s) with FWS Code: PSSC and total area of 97.3 acres.
9 Wetland(s) with FWS Code: PFOA and total area of 77.2 acres.
22 Wetland(s) with FWS Code: PFOC and total area of 144.1 acres.
1 Wetland(s) with FWS Code: PEMFX and total area of 0.6 acres.
3 Wetland(s) with FWS Code: PEMAX and total area of 28.5 acres.
Total area of wetlands= 456.9 acres.

Stream Segments of Concern

Portions of reported segments may occur outside of distance ranges.
Note that streams may not register correctly with other stream traces on maps due to differing source data scales and other considerations.
Washington streams information from 1992 WARIS GIS Database from the Department of Fish & Wildlife. Contact Martin Hudson at F&W for any more information at 206-664-0383.
The report indicates overall quality of reach for resident fish, existence of critical spawning habitats, presence species of concern, and the number of anadromous species present.

Distance Range 0 to 1 mile(s) :

Washington Stream Segments with data: 4 in area

Reach #/Stream Name	Miles Quality	Spawn Chcnr	Pres	Crit Spec	#Anad
17100103-44 NEWAUKUM R, S FK	2.64 Substantial	-	Y	5	
17100103-44 NEWAUKUM R, S FK	9.30 Substantial	-	Y	6	
17100103-1080 Name not specified	0.79 No Data	-	-	1	

17100103-1085 Name not specified 0.76 Insuf Data - - 1

Distance Range 1 to 2 mile(s):

Washington Stream Segments with data: 5 in area
Length Res Fish Crit Spec #Anad
Miles Quality Spawn Cncrn Pres
Reach #/Stream Name
17080005-71 LACAMAS CR 5.81 No Data - 1
17080005-602 Name not specified 4.31 No Data - 1
17100103-44 NEWAUKUM R, S FK 5.13 Substantial - 5
17100103-46 NEWAUKUM R, M FK 8.22 Substantial - 1
17100103-1093 LOST CR 2.60 No Data - 1

*** End of Report ***

8/17/2001

** WATER RIGHTS APPLICATION TRACKING SYSTEM **
 Southwest Regional Office
 WRATS REPORT BY TRS
 PAGE 2-B

CONTROL NUMBER	TYPE/ STAT	BUSINESS/PERSON NAME	PRIORITY DATE	WRIA CODE	COUNTY NAME	Q1	ACRE FT/YR	ACRES IRR	DOM UNITS	PURPOSES	SOURCE	TRS	QUAD
G2-066337CL	CL(S)	BENSON, SILAS		23	LEWIS				DG ST			T13N/R 1E-19	
G2-030611CL	CL(L)	COURTNEY, DAVID A.	0/0/1940	23	LEWIS			35	DG ST IR			T13N/R 1E-19	
S2-300360CL	CL(L)	DE YOUNG, PETE	0/0/1914	23	LEWIS	0.000	14.00	0	DG ST OT		UNNAMED SPRING	T13N/R 1E-19	
G2-036749CL	CL(S)	DEYOUNG, FRANK		23	LEWIS				DG ST			T13N/R 1E-19	
G2-036750CL	CL(S)	DEYOUNG, FRANK		23	LEWIS				DG ST			T13N/R 1E-19	
G2-159292CL	CL(L)	LORD, ROBERT	0/0/1972	23	LEWIS			5	DG IR		WELL	T13N/R 1E-19	
G2-009969CL	CL(L)	RAUSCH, HERMAN W.	0/0/1947	23	LEWIS				DG			T13N/R 1E-19	
G2-*01858CMRIS -01709	CE	SZELAP R R,	3/12/51	23	LEWIS	140.000	70.00	35	IR		WELL	T13N/R 1E-19	NW/4SE/4
G2-144148CL	CL(L)	WILKINS, GUY S	0/0/1930	23	LEWIS				DG ST IR		WELL	T13N/R 1E-19	
G2-020609CL	CL(L)	BALSEMER, SIGFRED	0/0/1916	23	LEWIS				DG ST			T13N/R 1E-20	
G2-045651CL	CL(S)	HEATON, KEITH V.		23	LEWIS				DG			T13N/R 1E-20	
S2-27763	CE	LEWIS CNTY WATER DIS	5/15/90	23	LEWIS	.060	0.00		MU		UNNAMED SPRING	T13N/R 1E-20	SE/4SE/4
G2-045317CL	CL(S)	LYANS, MAGGIE		23	LEWIS				DG ST			T13N/R 1E-20	
G2-045533CL	CL(S)	LYON, C. W.		23	LEWIS				DG ST			T13N/R 1E-20	
G2-049022CL	CL(L)	LYONS, WILLARD K.	0/0/1970	23	LEWIS				DG ST		WELL	T13N/R 1E-20	
G2-029804CL	CL(L)	MAHONEY, EDGAR	0/0/1968	23	LEWIS				DG ST			T13N/R 1E-20	
G2-094969CL	CL(L)	MARTIEN, JACK N	0/0/1954	23	LEWIS				DG ST IR		WELL	T13N/R 1E-20	
G2-162879CL	CL(L)	SANDERSON, VINCENT	0/0/1971	23	LEWIS				DG		WELL	T13N/R 1E-20	
G2-29860	AP	WHERRY, DARWIN	6/10/99	23	LEWIS	12.000			1 ST-DS-		WELL	T13N/R 1E-20	NW/4NE/4
G2-023311CL	CL(L)	CAIN, KYLE	0/0/1958	23	LEWIS				DG ST			T13N/R 1E-21	
G2-023310CL	CL(L)	CAIN, KYLE H.	0/0/1967	23	LEWIS				DG ST			T13N/R 1E-21	
G2-26700CMRIS	CE	PIES SHIRLEY A,	5/13/85	23	LEWIS	10.000	1.00		DS-		WELL	T13N/R 1E-21	NE/4N
G2-092879CL	CL(L)	ALLIE, BERTHA	0/0/1964	23	LEWIS				DG		WELL	T13N/R 1E-27	
G2-053227CL	CL(S)	BERG, ROGER		23	LEWIS				DG ST		WELL	T13N/R 1E-27	
G2-124725CL	CL(L)	BOYD, JOSEPH R	0/0/1972	23	LEWIS				DG		WELL	T13N/R 1E-27	
S2-124724CL	CL(L)	BOYD, JOSEPH R	0/0/1970	23	LEWIS				IR		RIVER	T13N/R 1E-27	
G2-038826CL	CL(S)	BROWER, ROBERT M.		23	LEWIS				DG			T13N/R 1E-27	
G2-072057CL	CL(L)	CARTER, CLYDE	0/0/1950	23	LEWIS				DG ST IR		WELL	T13N/R 1E-27	
G2-086823CL	CL(L)	DECKER, WILLIAM C.	0/0/1967	23	LEWIS				DG ST IR		WELL	T13N/R 1E-27	

N O T E

This report contains information about water right Certificates, Permits, and Claims. Because of unauthorized changes or non-use, Ecology cannot guarantee the validity of the Permits, and Certificates. Validity of Claims can only be determined in Superior Court. You are encouraged to verify that current use is consistent with the document as described.

Ext, m

Southwest Regional Office

WRATS REPORT BY TRS

PAGE 2-B

CONTROL NUMBER	TYPE/ STAT	BUSINESS/PERSON NAME	PRIORITY DATE	WRIA CODE	COUNTY NAME	Q1	ACRE FT/YR	ACRES IRR	DOM UNITS	PURPOSES	SOURCE	TRS	QUAD
G2-144285CL	CL [L]	ERICKSON, S O	0/0/1924	23	LEWIS					DG ST IR	WELL	T13N/R 1E-27	
G2-065947CL	CL [L]	GUENTHER, CLARENCE	0/0/1937	26	LEWIS			260		DG ST IR	SPRING	T13N/R 1E-27	
G2-140429CL	CL [S]	HAMILTON, ALBERTA		23	LEWIS					DG ST IR		T13N/R 1E-27	
G2-140432CL	CL [L]	HAMILTON, ALBERTA	0/0/1930	23	LEWIS					DG ST	WELL	T13N/R 1E-27	
G2-140430CL	CL [L]	HAMILTON, ALBERTA	0/0/1928	23	LEWIS				15	ST IR	POND	T13N/R 1E-27	
G2-140431CL	CL [L]	HAMILTON, ALBERTA	0/0/1928	23	LEWIS				25	ST IR	NEKAKUM RIVER	T13N/R 1E-27	
G2-132393CL	CL [L]	JORDAN, MIKE	0/0/1944	23	LEWIS					DG ST IR	WELL	T13N/R 1E-27	
G2-140260CL	CL [L]	LYONS, ROBERT D	0/0/1939	23	LEWIS					DG	WELL	T13N/R 1E-27	
G2-143753CL	CL [L]	MARTIN, LOUIS	0/0/1938	23	LEWIS					DG	WELL	T13N/R 1E-27	
G2-053325CL	CL [S]	MORRIS, JAMES E.		23	LEWIS					DG		T13N/R 1E-27	
G2-102664CL	CL [S]	RACHAU, JAMES E.		23	LEWIS					DG IR		T13N/R 1E-27	
G2-125367CL	CL [L]	ROGERS, JOHN T	0/0/1930	23	LEWIS					DG ST	WELL	T13N/R 1E-27	
G2-091746CL	CL [L]	ROGERS, KERMIT R		23	LEWIS					DG	WELL	T13N/R 1E-27	
G2-081466CL	CL [L]	RUSHTON, GLADYS	0/0/1966	23	LEWIS					DG	WELL	T13N/R 1E-27	
G2-086750CL	CL [S]	SCHOONOVER, JACK		23	LEWIS					DG	WELL	T13N/R 1E-27	
G2-146951CL	CL [L]	TRYON, JAMES C		23	LEWIS					DG	WELL	T13N/R 1E-27	
G2-011519CL	CL [L]	TRYON, LLOYD C.	0/0/1963	23	LEWIS					DG ST		T13N/R 1E-27	
G2-044446CL	CL [S]	COURTNEY, JOHN R.		23	LEWIS					DG	WELL	T13N/R 1E-28	
G2-018911CL	CL [L]	FICKETT, DANIEL C.	0/0/1919	23	LEWIS					DG		T13N/R 1E-28	
G2-018775CL	CL [L]	FRICKETT, DANIEL C.	0/0/1948	23	LEWIS					DG		T13N/R 1E-28	
G2-040210CL	CL [L]	GLAZE, WILLIE	0/0/1965	23	LEWIS					DG	WELL	T13N/R 1E-28	
G2-073992CL	CL [L]	HANSON, FRED	0/0/1972	23	LEWIS					DG ST IR	WELL	T13N/R 1E-28	
G2-146750CL	CL [L]	HIRTZEL, JAMES J	0/0/1945	23	LEWIS					DG	WELL	T13N/R 1E-28	
G2-143752CL	CL [L]	MARTIN, LOUIS		23	LEWIS					DG		T13N/R 1E-28	
G2-160558CL	CL [L]	NEHRING, RALPH R	0/0/1925	23	LEWIS					DG	SPRING	T13N/R 1E-28	
G2-074038CL	CL [L]	WITZEL, LYNN	0/0/1960	23	LEWIS					DG ST	WELL	T13N/R 1E-28	
G2-074039CL	CL [L]	WITZEL, LYNN	0/0/1973	23	LEWIS				20	DG ST IR	A WELL	T13N/R 1E-28	
G2-080086CL	CL [L]	WOLFE, HARLEY	0/0/1971	23	LEWIS					DG	WELL	T13N/R 1E-28	
G2-080087CL	CL [L]	WOLFE, HARLEY	0/0/1916	23	LEWIS					DG ST	WELL	T13N/R 1E-28	
G2-099245CL	CL [L]	WRIGHT, LYDIA A	0/0/1949	23	LEWIS					DG ST IR	WELL	T13N/R 1E-28	
G2-108689CL	CL [L]	BURTON, GLEN M	0/0/1908	23	LEWIS					DG ST	WELL	T13N/R 1E-29	

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Southwest Regional Office
WRATS REPORT BY TRS
PAGE 2-B

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G2-005558CL	CL(L)	FODGE, TERRY	0/0/1971	23	LEWIS					DG		T13N/R 1E-29	
G2-00556CMRIS	CE	FODGE TERRY,	8/25/71	23	LEWIS	20.000	5.00			DM-	WELL	T13N/R 1E-29	N/2SW/4SW/4
G2-163145CL	CL(L)	GRENZ, DELBERT	0/0/1944	23	LEWIS					DG	WELL	T13N/R 1E-29	
S2-00200CMRIS	CE	HAMILTON DEAN ET UX,	5/22/70	23	LEWIS	.200	45.00	20		IR-	UNNAMED STREAM	T13N/R 1E-29	N/2NW/4
S2-25444CMRIS	CE	HAMILTON DEAN,	12/12/79	23	LEWIS	.900	220.00	300		ST-IR-	UNNAMED STREAM	T13N/R 1E-29	
G2-011105CL	CL(L)	RUSHTON, GLADYS	0/0/1954	23	LEWIS					DG		T13N/R 1E-29	
G2-009593CL	CL(L)	TURNER, IRA V.	0/0/1957	23	LEWIS			1		DG ST IR		T13N/R 1E-29	
G2-037832CL	CL(L)	VANNOT, C. GENE	0/0/1950	23	LEWIS			2		DG ST IR	WELL	T13N/R 1E-29	
S2-141040CL	CL(L)	KEITH, ARVID E	0/0/1920	23	LEWIS			80		DG ST IR	SPRINGS	T13N/R 1E-30	
CG2-23316	CA	LEWIS CNTY WATER DIS	12/03/97	23	LEWIS	60.000	104.00	0	0		WELL	T13N/R 1E-30	SE/4SE/4
CG2-28332	CP	LEWIS CNTY WATER DIS	9/18/95	23	LEWIS	100.000	0.00	0	0		WELL	T13N/R 1E-30	SW/4SW/4
CG2-28332		LEWIS CNTY WATER DIS	9/18/95					0	0			T13N/R 1E-30	SW/4SW/4
CG2-28332		LEWIS CNTY WATER DIS	9/18/95					0	0			T13N/R 1E-30	SW/4SW/4
CG2-28332		LEWIS CNTY WATER DIS	9/18/95					0	0			T13N/R 1E-30	SW/4SW/4
G2-22828C	CE	LEWIS CNTY WATER DIS	6/28/74	23	LEWIS	35.000	56.00			MU-	WELL	T13N/R 1E-30	SE/4SE/4
G2-23316C	CE	LEWIS CNTY WATER DIS	10/28/74	23	LEWIS	60.000	104.00			MU-	WELL	T13N/R 1E-30	
S2-01084CMRIS	CE	NELSON JACK C,	6/21/68	23	LEWIS	.200	41.00	20		WL-IR-FS-DS-	UNNAMED SPRING	T13N/R 1E-30	
G2-093645CL	CL(L)	NELSON, JACK C.	0/0/1967	23	LEWIS			20		DG ST IR	WELL	T13N/R 1E-30	
G2-066099CL	CL(S)	NOLAN, EARL R.		23	LEWIS					DG		T13N/R 1E-30	
G2-009840CL	CL(L)	STARK, LESTER L.	0/0/1957	23	LEWIS					DG ST		T13N/R 1E-30	
G2-*03577CMRIS -01962	CE	TADE P,	4/13/54	23	LEWIS	100.000	50.00	25		IR-	WELL	T13N/R 1E-30	NE/4NW/4
G2-065701CL	CL(L)	WRZESINSKI, CHARLES	0/0/1964	23	LEWIS					DG	WELL	T13N/R 1E-30	
S2-*20887CMRIS -11078	CE	ALEXANDER D L & D E,	4/10/68	23	LEWIS	.100	10.00	5		RE-IR-FR-CI-	UNNAMED STREAM	T13N/R 1E-31	SW/4NW/4
G2-051408CL	CL(L)	BLANKENSHIP, DALLAS	0/0/1942	23	LEWIS					DG	WELL	T13N/R 1E-31	
S2-251084CMRIS	CE	CHENEY CHRISTOPHER,	11/07/78	23	LEWIS	1.000	160.00	80		IR-	SOUTH FORK NEWAUK	T13N/R 1E-31	NW/4
G2-040471CL	CL(S)	DINKMEIER, JOHN		23	LEWIS					DG		T13N/R 1E-31	
G2-014694CL	CL(L)	DOW, JOHN	0/0/1920	23	LEWIS					DG ST		T13N/R 1E-31	
G2-132358CL	CL(L)	FRIERMOOD, ROGER L	0/0/1920	23	LEWIS			1		DG	WELL	T13N/R 1E-31	
G2-056901CL	CL(L)	GWIN, ELIZABETH W.	0/0/1937	23	LEWIS			5		DG ST IR	A WELL	T13N/R 1E-31	
G2-056903CL	CL(L)	GWIN, ELIZABETH W.	0/0/1937	23	LEWIS			5		DG ST IR	A WELL	T13N/R 1E-31	
G2-042075CL	CL(S)	HAND, ARNOLD W.		23	LEWIS					DG ST		T13N/R 1E-31	

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** WATER RIGHTS APPLICATION TRACKING SYSTEM **
 Southwest Regional Office
 WRAIS REPORT BY TRS
 PAGE 2-B

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G2-104880CL	CL [S]	MAYERS, ARTHUR K		23	LEWIS				DG			T13N/R 1E-31	
S2-*18017CMRIS -09180	CE	MORAN W B,	7/03/63	23	LEWIS	.100	20.00	10	IR-		SOUTH FORK NEWAUK	T13N/R 1E-31	SE/4NW/4
G2-013724CL	CL [L]	NEUMANN, EDWIN D.	0/0/1950	23	LEWIS				DG ST			T13N/R 1E-31	
G2-043539CL	CL [S]	PSINOS, DANIEL N.		23	LEWIS				DG ST			T13N/R 1E-31	
S2-140219CL	CL [S]	RUSSELL, E R		23	LEWIS				DG ST IR		NEWAUKUM R	T13N/R 1E-31	
G2-044414CL	CL [S]	SIVERS, LESLIE		23	LEWIS				DG ST			T13N/R 1E-31	
G2-012438CL	CL [L]	SMOOTS, HARRY L.	0/0/1956	23	LEWIS				DG			T13N/R 1E-31	
G2-012439CL	CL [L]	SMOOTS, HARRY L.	0/0/1969	23	LEWIS				DG			T13N/R 1E-31	
G2-043966CL	CL [S]	WILLIAMS, SUSKY M.		23	LEWIS			10	DG ST			T13N/R 1E-31	
G2-004133CL	CL [L]	COPELAND, JAMES R.	0/0/1969	23	LEWIS				DG ST IR			T13N/R 1E-32	
G2-136388CL	CL [L]	DAVIS, KATHERINE J	0/0/1927	23	LEWIS				DG ST		WELL	T13N/R 1E-32	
G2-055598CL	CL [S]	GERRITS, JOHN		23	LEWIS				DG		WELL	T13N/R 1E-32	
S2-055597CL	CL [S]	GERRITS, JOHN		23	LEWIS				ST		STREAM	T13N/R 1E-32	
G2-011880CL	CL [L]	INMAN, ROY E.	0/0/1960	23	LEWIS				DG ST			T13N/R 1E-32	
G2-160297CL	CL [S]	KEENAN, ANNABELLE M		23	LEWIS				DG ST IR			T13N/R 1E-32	
G2-088658CL	CL [L]	KENDALL, MICHAEL O.		23	LEWIS				DG ST		WELL	T13N/R 1E-32	
S2-*20679CMRIS -10753	CE	LARSON L & G,	12/22/67	23	LEWIS	.600	120.00	60	IR-		SOUTH FORK NEWAUK	T13N/R 1E-32	NW/4NE/4
S2-25397CMRIS	CE	LARSON LOUIS ET UX,	10/18/79	23	LEWIS	.600	120.00	60	IR-		SOUTH FORK NEWAUK	T13N/R 1E-32	NW/4NW/4NE/
G2-141774CL	CL [L]	LARSON, LOUIS G	0/0/1926	23	LEWIS				DG ST		SPRING	T13N/R 1E-32	
G2-053162CL	CL [S]	LENZ, HENRY		23	LEWIS				DG ST			T13N/R 1E-32	
S2-*05837CMRIS -02238	CE	MERCER E L,	5/28/43	23	LEWIS	.500		50	IR-		SOUTH FORK NEWAUK	T13N/R 1E-32	NE/4NW/4
S2-*05837CMRIS -02238		MERCER E L,	5/28/43	23	LEWIS			50	IR-			T13N/R 1E-32	SW/4NW/4
G2-041048CL	CL [S]	MORGAN, EVERETT		23	LEWIS				DG ST			T13N/R 1E-32	
G2-043893CL	CL [L]	MURPHY, JAMES H.	0/0/1945	23	LEWIS				DG		WELL	T13N/R 1E-32	
G2-013983CL	CL [L]	RACHAU, EVERETT	0/0/1920	23	LEWIS				DG			T13N/R 1E-32	
G2-010164CL	CL [L]	ROGERS, WILFRED D.	0/0/1966	23	LEWIS			1	DG ST IR			T13N/R 1E-32	
G2-020890CL	CL [L]	SAWYER, RALPH E.	0/0/1952	23	LEWIS				DG			T13N/R 1E-32	
S2-139071CL	CL [L]	THOMSON, GEORGE J	0/0/1964	23	LEWIS			8	IR		SPRING	T13N/R 1E-32	
S2-139072CL	CL [L]	THOMSON, GEORGE J		23	LEWIS				DG		SPRING	T13N/R 1E-32	
S2-009403CL	CL [L]	WEAVER, H. R.	0/0/1930	23	LEWIS				DG ST			T13N/R 1E-32	
S2-*05396CMRIS -01691	CE	HOLHAUPT C M,	3/27/41	23	LEWIS	.005			DS-		UNNAMED SPRING	T13N/R 1E-32	NE/4SW/4

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** WATER RIGHTS APPLICATION TRACKING SYSTEM **
 Southwest Regional Office
 WRAIS REPORT BY TRS
 PAGE 2-B

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G2-100409CL	CL[SI]	YOUNG, ARNOLD A		23	LEWIS					DG ST		T13N/R 1E-32	
G2-058073CL	CL[SI]	ABSHIRE, J. P.		23	LEWIS					DG		T13N/R 1E-33	
G2-047053CL	CL[LI]	BELONGIA, LEONARD	0/0/1921	23	LEWIS					DG	WELL	T13N/R 1E-33	
S2-00038CMRIS	CE	HIRTZEL J J & C,	3/23/71	23	LEWIS	.500	67.70	25.		ST-IR-CI-	SOUTH FORK NEWAUK	T13N/R 1E-33	N/2NW/4NW/4
S2-*201300MRIS -10227	CE	HIRTZEL J J / C,	3/03/67	23	LEWIS	.300	60.00	30.		IR-	SOUTH FORK NEWAUK	T13N/R 1E-33	N/2NW/4
G2-089682CL	CL[SI]	KENT, CLYDE E		26	LEWIS					DG		T13N/R 1E-33	
G2-014766CL	CL[LI]	MUMME, JOHN	0/0/1938	23	LEWIS					DG ST		T13N/R 1E-33	
G2-014767CL	CL[LI]	MUMME, JOHN	0/0/1938	23	LEWIS					DG		T13N/R 1E-33	
G2-151758CL	CL[LI]	PINKERTON, HAROLD I		23	LEWIS					DG ST	WELL	T13N/R 1E-33	
G2-062503CL	CL[SI]	SNYDER, GEORGE W.		23	LEWIS					DG ST		T13N/R 1E-33	
S2-*085310MRIS -04457	CE	WOODS D E,	7/30/48	23	LEWIS	.250		25.		IR-	SOUTH FORK NEWAUK	T13N/R 1E-33	NW/4NW/4
S2-*101720MRIS -05049	CE	WOODS W E,	3/06/51	23	LEWIS	.500		60.		IR-	SOUTH FORK NEWAUK	T13N/R 1E-33	NW/4NE/4

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** WATER RIGHTS APPLICATION TRACKING SYSTEM **
 Southwest Regional Office
 WRATS REPORT BY TRS
 PAGE 2-3

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GE-041238CL	CLISJ	ARNITAGE, JOHN W.		23	LEWIS					DG ST	WELL	T13N/R 1W-25	
GE-106995CL	CLISJ	GEORGE, ROY		23	LEWIS					DG IR		T13N/R 1W-25	
GE-061110CL	CLISJ	HEIHER, R. D.		23	LEWIS					DG ST		T13N/R 1W-25	
GE-024474CL	CLLLJ	WILLIS, PEARL	0/0/1935	23	LEWIS					DG ST		T13N/R 1W-25	
GE-048714CL	CLISJ	WISDOM, JOHN P.		23	LEWIS					DG ST		T13N/R 1W-25	

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 Southwest Regional Office
 WRATS REPORT BY TRS
 PAGE 2-B

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G2-030177CL	CL [L]	BOGAR, J. W.	0/0/1918	26	LEWIS					DG ST		T12N/R 1E- 5	
G2-030178CL	CL [L]	BOGAR, J. W.	0/0/1972	26	LEWIS					DG ST		T12N/R 1E- 5	
G2-030179CL	CL [L]	BOGAR, J. W.	0/0/1940	26	LEWIS					DG ST		T12N/R 1E- 5	
G2-025538CL	CL [L]	COLLINS, MARY E.	0/0/1967	23	LEWIS					DG ST		T12N/R 1E- 5	
G2-110785CL	CL [L]	DAVIS, ROBERT W	0/0/1950	26	LEWIS			5		DG ST IR	WELL	T12N/R 1E- 5	
G2-019526CL	CL [L]	HOCKETT, JESSE R.	0/0/1968	26	LEWIS					DG		T12N/R 1E- 5	
G2-105745CL	CL [L]	MC NEELY, PERRY	0/0/1968	26	LEWIS					DG ST IR	WELL	T12N/R 1E- 5	
G2-102410CL	CL [L]	MYHRE, WAYNE F	0/0/1936	26	LEWIS					DG	WELL	T12N/R 1E- 5	
G2-019533CL	CL [L]	NEWTON, ELSTIE	0/0/1952	26	LEWIS					DG		T12N/R 1E- 5	
G2-144009CL	CL [L]	NODDIN, C EDWIN	0/0/1946	26	LEWIS					DG ST IR	WELL	T12N/R 1E- 5	
G2-105744CL	CL [L]	PENTECOST, GORDON	0/0/1950	26	LEWIS					DG ST IR	WELL	T12N/R 1E- 5	
G2-025950CL	CL [L]	PRESLEY, COY O.	0/0/1915	26	LEWIS			2		DG ST IR		T12N/R 1E- 5	
G2-007564CL	CL [L]	REICHERT, LEE	0/0/1921	26	LEWIS					DG ST		T12N/R 1E- 5	
G2-014067CL	CL [L]	REYNOLDS, JASPER A.	0/0/1920	26	LEWIS					DG ST	WELL	T12N/R 1E- 5	
G2-104767CL	CL [L]	STONE, FLORA		26	LEWIS					DG	WELL	T12N/R 1E- 5	
G2-151762CL	CL [L]	WEBB, JAMES R	0/0/1974	26	LEWIS					DG	WELL	T12N/R 1E- 5	

N O T E

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R₂(E W)

R₃(E W)

Extrine

T₁₃N

T₁N

6	5	4	3	2	1	6	5	4	3	2	1
7	8	9	10	11	12	7	8	9	10	11	12
18	17	16	15	14	13	18	17	16	15	14	13
19	20	21	22	23	24	19	20	21	22	23	24
30	29	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	33	34	35	36
6	5	4	3	2	1	6	5	4	3	2	1
7	8	9	10	11	12	7	8	9	10	11	12
18	17	16	15	14	13	18	17	16	15	14	13
19	20	21	22	23	24	19	20	21	22	23	24
30	29	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	33	34	35	36

Township, Range, and Section Diagram for Determining Well Data Collection Needs

Sampling Notes
Extine Petroleum, Facility # 1171
AM 6/14/2001

After previously discussing the site and file with M. Spencer of WDOE, we arrived at the site at about 9:50 am.

We completed the site Safety and Health Plan, and began excavating holes for sampling.

It appeared from comparing old photographs with current topography, that the site had been filled and graveled. We chose two sites that we thought might be on either side of the covered card lock/ filling location. Site ES-1 is located just east of the location of the former shed, and ES-2 is just to the west.

Sample 1 (Named E-1) was collected from site ES-1 at a depth of 18 inches.

Sample 2 (Named E-2) was collected from site ES-2, at a depth of 12 inches.

Sample 3 (Named E-3) was collected from site ES-2 at a depth of 18 inches.

The overburden at ES-2 seemed more shallow than at ES-1.

Samples were individually labeled as they were collected so that the possibility of error of sample identity would be at a minimum.

Steven J. Garrett, RS
Sanitarian

Among the common forest understory plants are cascades Oregon-grape, vine maple, and western swordfern.

If this unit is used for homestead development, the main limitations are the hazard of flooding and shrink-swell potential. Dikes and channels that have outlets for floodwater can be used to protect buildings and on-site sewage disposal systems from flooding. Roads and streets should be located above the expected flood level. The effects of shrinking and swelling can be minimized by using proper engineering designs and by backfilling with material that has low shrink-swell potential. If this unit is used for septic tank absorption fields, the limitation of moderate permeability can be overcome by increasing the size of the absorption field. If the density of housing is moderate to high, community sewage systems may be needed.

This map unit is in capability subclass IIw.

48—Chehalis silty clay. This very deep, well drained soil is on low stream and river terraces. It formed in mixed alluvium. Slope is 0 to 3 percent. The native vegetation is mainly conifers and deciduous trees. Elevation is 130 to 350 feet. The average annual precipitation is 40 to 60 inches, the average annual air temperature is about 52 degrees F, the average growing season (at 28 degrees) is 200 to 220 days, and the average frost-free season (at 32 degrees) is 150 to 200 days.

Typically, the surface layer is very dark brown and very dark grayish brown silty clay about 17 inches thick. The subsoil is dark brown silty clay loam and dark yellowish brown silt loam about 27 inches thick. The substratum to a depth of 60 inches or more is yellowish brown fine sandy loam.

Included in this unit are as much as 5 percent Chehalis silt loam, 3 percent Newberg soils, and 3 percent Cloquato soils. Also included are small areas of Alvor and Reed soils and somewhat poorly drained Galvin soils.

Permeability of this Chehalis soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. This soil is subject to occasional, brief periods of flooding in winter and early in spring. Most areas of this unit are used for hay, pasture, and field crops. A few areas are used for timber production, homesites, urban structures, and wildlife habitat.

This unit is well suited to hay, pasture, and field crops. The main limitation is the hazard of flooding. Flooding can be controlled by diking the adjacent stream or diverting runoff away from the area. Restricting grazing during wet periods helps to keep the pasture and soil in good condition.

Peas, sweet corn, corn for silage, wheat, oats, and strawberries commonly are grown on this unit (fig. 9). In summer, irrigation is needed for maximum production of

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Permeability of this Chehalis soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. This soil is subject to occasional, brief periods of flooding in winter and early in spring. Most areas of this unit are used for hay, pasture, and field crops. A few areas are used for timber production, homesites, and wildlife habitat.

This unit is well suited to hay, pasture, and field crops. The main limitation is the hazard of flooding. Flooding can be controlled by diking the adjacent stream or diverting runoff away from the area. Restricting grazing during wet periods helps to keep the pasture and soil in good condition.

Peas, sweet corn, corn for silage, wheat, oats, and strawberries commonly are grown on this unit. In summer, irrigation is needed for maximum production of most crops. Sprinkler irrigation is a suitable method of applying water. A tillage pan forms if the soil is tilled when wet.

Douglas-fir and red alder are the main woodland species on this unit. On the basis of a 100-year site curve, the mean site index is estimated to be 173 for Douglas-fir, and on the basis of a 50-year site curve, the mean site index is 130. The highest average growth rate for Douglas-fir at age 60 is 184 cubic feet per acre per year. Estimates of the site index and yield for red alder have not been made. Among the trees of limited extent are grand fir, western redcedar, and bigleaf maple. The main limitation for the harvesting of timber is muddiness caused by seasonal soil wetness. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. When wet, unsurfaced roads and skid trails are soft and can be impassable. Logging roads require suitable surfacing for year-round use. Rock for road construction is not readily available in this unit. Occasional, brief periods of flooding limit the use of equipment to dry periods. Disturbance of the protective layer of duff can be reduced with the careful use of wheeled and tracked equipment.

Seedling establishment is the main concern in the production of timber. Reforestation can be accomplished by planting Douglas-fir seedlings. If seed trees are present, natural reforestation by red alder occurs readily. Flooding reduces root respiration, which lowers the survival rate for seedlings. When openings are made in the canopy, invading brushy plants can prevent the establishment of Douglas-fir seedlings.

most crops. Sprinkler irrigation is a suitable method of applying water. Because the soil is difficult to work when wet, most planting and harvesting equipment can be used only during dry periods. Returning all crop residue and green manure crops to the soil helps to maintain fertility and till.

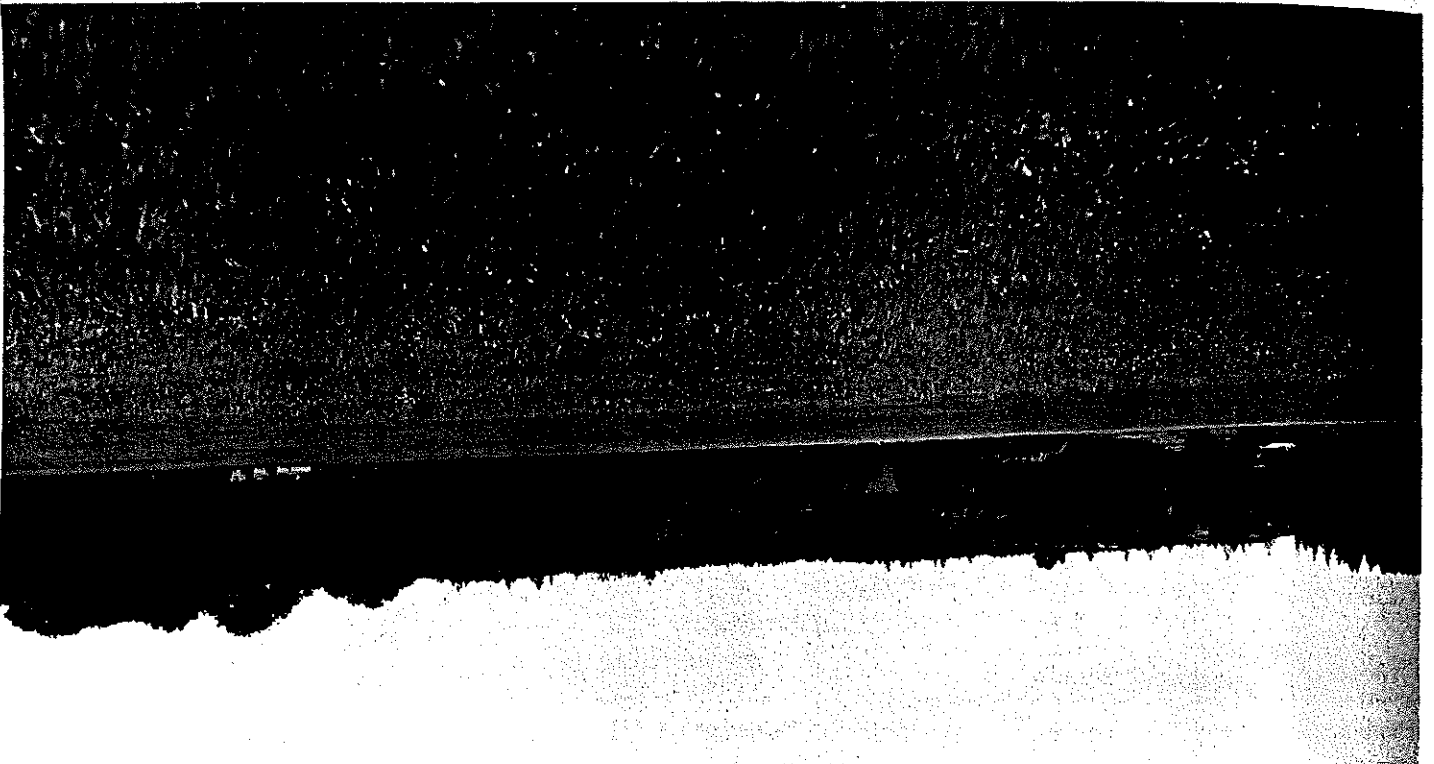
Douglas-fir and red alder are the main woodland species on this unit. On the basis of a 100-year site curve, the mean site index is estimated to be 173 for Douglas-fir, and on the basis of a 50-year site curve, the mean site index is estimated to be 130. The highest average growth rate for Douglas-fir at age 60 is 184 cubic feet per acre per year. Estimates of the site index and yield for red alder have not been made. Among the trees of limited extent are grand fir, western redcedar, and bigleaf maple.

The main limitation for the harvesting of timber is muddiness caused by seasonal soil wetness. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. When wet, unsurfaced roads and skid trails are soft and sticky and can be impassable. Logging roads require suitable surfacing for year-round use. Rock for road construction is not readily available in this unit. Occasional, brief periods of flooding limit the use of equipment to dry periods. Disturbance of the protective

layer of duff can be reduced with the careful use of wheeled and tracked equipment. Seeding establishment is the main concern in the production of timber. Reforestation can be accomplished by planting Douglas-fir seedlings. If seed trees are present, natural reforestation by red alder occurs readily. Flooding reduces root respiration, which lowers the survival rate for seedlings. When openings are made in the canopy, invading brushy plants can prevent the establishment of Douglas-fir seedlings.

Among the common forest understory plants are cascade Oregon-grape, vine maple, violet, western swordfern, and trailing blackberry. If this unit is used for homestead development, the main limitations are the hazard of flooding and shrink-swell potential. Dikes and channels that have outlets for floodwater can be used to protect buildings and onsite sewage disposal systems from flooding. Roads and streets should be located above the expected flood level. The effects of shrinking and swelling can be minimized by using proper engineering designs and by backfilling with material that has low shrink-swell potential. If this unit is used for septic tank absorption fields, the limitation of moderate permeability can be overcome by increasing the size of the absorption field.

Figure 9.—Winter wheat in an area of Chehalis silty clay.



If the density of housing is moderate to high, community sewage systems may be needed.

This map unit is in capability subclass IIw.

49—Cinebar silt loam, 0 to 8 percent slopes. This

very deep, well drained soil is on high terraces, hillsides, and ridgetops. It formed in alluvial and glacioluvial deposits derived dominantly from volcanic ash with an admixture of aerially deposited ash and loess in the upper part. Slopes generally are plane. The native vegetation is mainly conifers. Elevation is 500 to 1,800 feet. The average annual precipitation is 50 to 75 inches, the average annual air temperature is about 50 degrees F, the average growing season (at 28 degrees) is 160 to 200 days, and the average frost-free season (at 32 degrees) is 150 to 175 days.

Typically, the upper part of the surface layer is very dark brown silt loam about 12 inches thick and the lower part is very dark brown and dark brown silt loam about 4 inches thick. The subsoil is dark brown and dark yellowish brown silt loam about 38 inches thick. The subsoil to a depth of 60 inches or more is dark yellowish brown silt loam.

Included in this unit are as much as 5 percent Newaukum soils and Cinebar soils that have deposits of slightly compact glacial drift in the substratum and 5 percent Cinebar soils that have slopes of more than 8 percent. Also included are small areas of Klaber soils, Lacamas soils, and somewhat poorly drained Galvin soils in drainageways and depressional areas.

Permeability of this Cinebar soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

This unit is used mainly for timber production, wildlife habitat, and watershed. It is also used for hay, pasture, and field crops. Some areas are used for homesite and urban development.

Douglas-fir, red alder, and western hemlock are the main woodland species on this unit. On the basis of a 100-year site curve, the mean site index is 174 for Douglas-fir and 155 for western hemlock. On the basis of a 50-year site curve, the mean site index is 132 for Douglas-fir and 110 for western hemlock. The highest average growth rate for Douglas-fir at age 60 is 185 cubic feet per acre per year, and for western hemlock at age 50 it is 246 cubic feet per acre per year. Estimates of the site index and yield for red alder have not been made. Among the trees of limited extent are bigleaf maple and western redcedar.

The main limitation for the harvesting of timber is muddiness caused by seasonal soil wetness. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. When wet, unsurfaced roads and skid trails are soft and slippery and can be impassable. Logging roads require suitable surfacing for year-round use. Rock for

loam.

Typically, the surface is covered with a mat of partially decomposed organic litter about 2 inches thick. The upper part of the surface layer is very dark brown silt loam about 12 inches thick, and the lower part is very dark brown and dark brown silt loam about 4 inches thick. The subsoil is dark brown and dark yellowish brown silt loam about 38 inches thick. The substratum to a depth of 60 inches or more is dark yellowish brown silt

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This map unit is well suited to homesite development. This map unit is in capability subclass IIe.

50—Cinebar silt loam, 8 to 15 percent slopes. This very deep, well drained soil is on high terraces, hillsides and foot slopes of mountains. It formed in alluvial and glacioluvial deposits derived dominantly from volcanic ash with an admixture of aerially deposited ash and loess in the upper part. Slopes generally are plane or rolling. The native vegetation is mainly conifers. Elevation is 500 to 1,800 feet. The average annual precipitation is 50 to 75 inches, the average annual air temperature is about 50 degrees F, the average growing season (at 28 degrees) is 160 to 200 days, and the average frost-free season (at 32 degrees) is 150 to 175 days.

Typically, the upper part of the surface layer is very dark brown silt loam about 12 inches thick and the lower part is very dark brown and dark brown silt loam about 4 inches thick. The subsoil is dark brown and dark yellowish brown silt loam about 38 inches thick. The subsoil to a depth of 60 inches or more is dark yellowish brown silt loam.

Included in this unit are as much as 5 percent Newaukum soils and Cinebar soils that have deposits of slightly compact glacial drift in the substratum and 5 percent Cinebar soils that have slopes of more than 8 percent. Also included are small areas of Klaber soils, Lacamas soils, and somewhat poorly drained Galvin soils in drainageways and depressional areas.

Permeability of this Cinebar soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. This unit is well suited to hay, pasture, and field crop production. Restricting grazing during wet periods helps to keep the pasture and soil in good condition. Adequate plant cover is required on this unit to control soil erosion. Corn for silage, wheat, oats, strawberries, cane fruit, and Christmas trees commonly are grown on this unit (fig. 10). Erosion is reduced if fall grain is seeded early and tillage and seeding are on the contour or across the slope. Waterways should be shaped and seeded to perennial grass. In summer, irrigation is needed for maximum production of most crops. Sprinkler irrigation is a suitable method of applying water. A tillage pan forms if the soil is tilled when wet. Leaving crop residue on the surface and returning green manure crops to the soil help to maintain fertility and till and help to control erosion.

This map unit is well suited to homesite development. This map unit is in capability subclass IIe.

SAMPLING AND ANALYSIS PLAN
For
Exline Petroleum
TPN 32778-003-000
2568A SH 508
Ecology Facility # 1171
Proposed Under
SHA GRANT # G0000109
To the
Lewis County Health Department
May 18, 2001
S. Garrett, RS

1. Site History and General Information:

Exline Petroleum, 2568A SH 508, Onalaska, has been a petroleum distributor site for many years. Washington Department of Ecology (WDOE) had visited the site on October 13, 1992, and subsequently recommended it be listed in WDOE's database of potentially contaminated sites. The report lists locations where contamination was noted.

The site was later used to grow organically raised sprouts for distribution to delicatessens and restaurants. The site now hosts an automotive repair business.

2. Sampling Objective:

The purpose of sampling the soil at this site is to document the presence or absence of significant contamination. Laboratory results will provide a basis for an assessment of any possible public health and safety risk. It is hoped that a one time sampling event will provide the information necessary to make a decision of no further action (NFA), or provide a ranking by Washington Ranking Method (WARM) standards. Because of information available about the history of the site, it is strongly suspected that soil contamination, if any, would be from petroleum products. Soil sampling will therefore focus on possible petroleum contamination.

3. Soil Sampling and Analysis:

The sampling is expected to be a one-time event.

All equipment used for sampling will be washed with soap and water between samples.

Depth of soil sampling will be determined at time of sampling after a core soil evaluation with a probe has been completed. The soil evaluation will help determine whether restrictive layers would impede downward travel of contaminants through the soil, thereby indicating optimum sampling depth.

Six soil samples from within the suspected previous location of the leaking oil drums should be sufficient to detect petroleum should it be present. See drawing attached. All six samples will be analyzed for Northwest Total Petroleum Hydrocarbons (NWTPH). Positive results may indicate a need for further identification of the contaminant. The samples will be numbered B-1 through B-6, and charted as collected on a plot plan similar to the one attached.

Sample Identification

Sample Number	Sample Location and Depth	Analysis
E-1	ES-1 depth to be determined	NWTPH (ext)
E-2	ES-2	"
E-3	ES-3	"
E-4	ES-4	"
E-5	ES-5	"
E-6	ES-6	"

4. Quality Assurance, Quality Control:

To assure the integrity of samples, tools and instruments will be washed with soap and water before and after collecting each sample. Spoils from sampling will be returned to the hole from which it was drawn. Solid waste generated from sampling will be double bagged and disposed of in the solid waste stream.

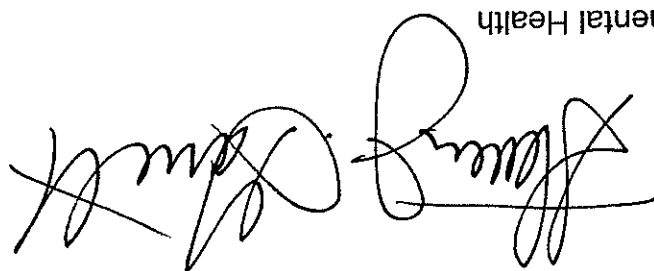
5. Sample Analysis:

Analysis of samples will be done by Columbia Analytical Services, Kelso, WA, tele 360-577-7222, inquiry pending at this date. NWTPH screening will be requested, and further identification proposed if necessary. LCEH will request that the samples be retained by the laboratory for further identification if necessary. The laboratory will supply sample storage and transport instructions. QA/QC will be the responsibility of the laboratory.

6. Personnel:

Steve Garrett of Lewis County Environmental Health will do the sampling. The date of sampling has not yet been determined. Michael Spencer of Washing Department of Ecology (WDOE) may assist. A Site Safety and Health Plan will be available at time of sampling.

Respectfully,

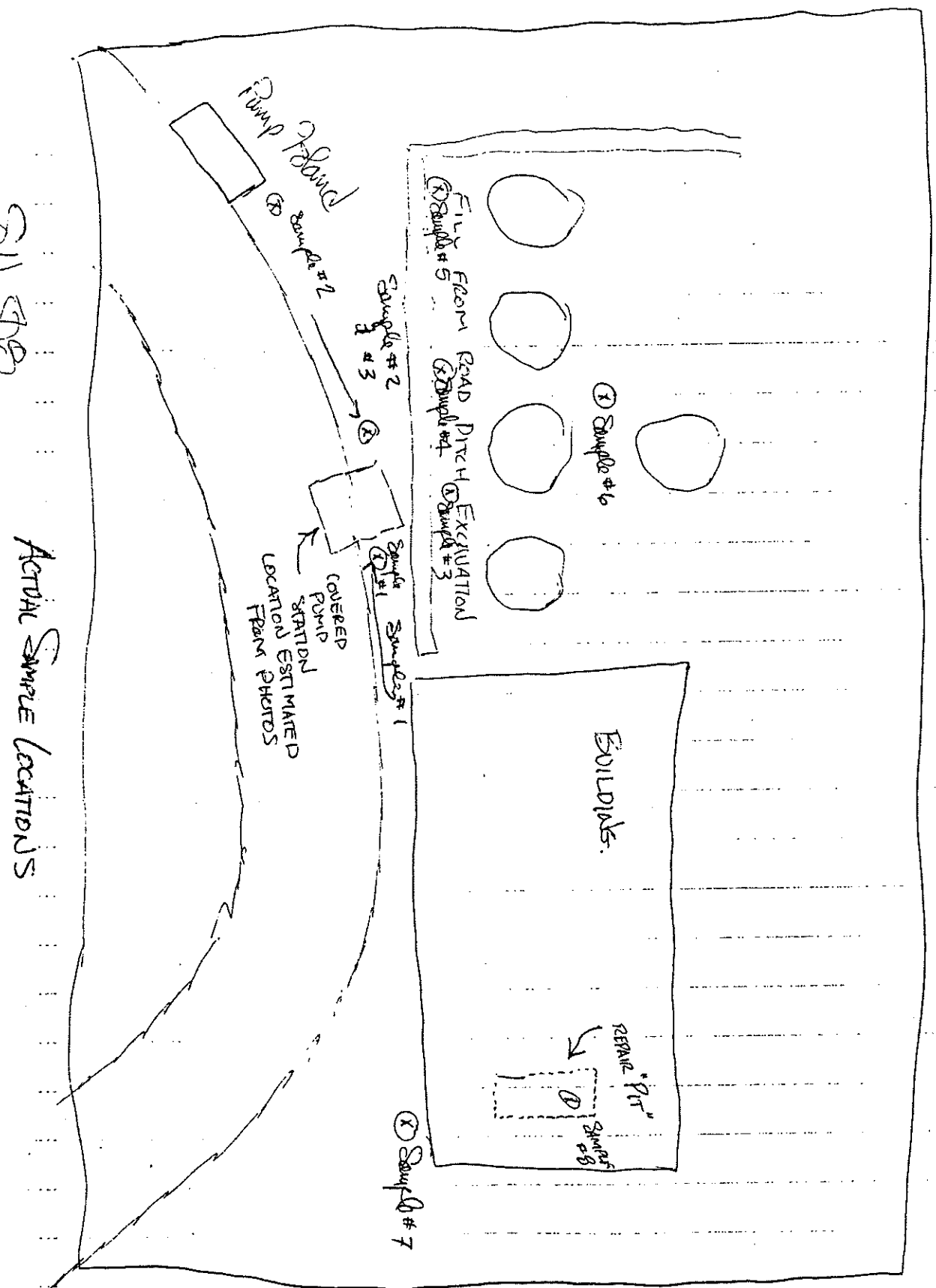

Steven J. Garrett, RS
Sanitarian
Lewis County Environmental Health

Attached plot plan showing sampling locations

SH 500

Actual Sample Locations

NOT TO SCALE



Sampling Notes
Extine Petroleum, Facility # 1171
AM 6/14/2001

After previously discussing the site and file with M. Spencer of WDOE, we arrived at the site at about 9:50 am.

We completed the site Safety and Health Plan, and began excavating holes for sampling.

It appeared from comparing old photographs with current topography, that the site had been filled and graveled. We chose two sites that we thought might be on either side of the covered card lock/ filling location. Site ES-1 is located just east of the location of the former shed, and ES-2 is just to the west.

Sample 1 (Named E-1) was collected from site ES-1 at a depth of 18 inches.

Sample 2 (Named E-2) was collected from site ES-2, at a depth of 12 inches.

Sample 3 (Named E-3) was collected from site ES-2 at a depth of 18 inches.

The overburden at ES-2 seemed more shallow than at ES-1.

Samples were individually labeled as they were collected so that the possibility of error of sample identity would be at a minimum.

Steven J. Garrett, RS
Sanitarian



SITE SAFETY AND HEALTH PLAN

for the

SITE HAZARD ASSESSMENT PROGRAM

LEWIS COUNTY ENVIRONMENTAL HEALTH

SECTION A

DATE: 6/14/01

Time on Site 9:05 AM Time off Site

Site Name

Extr Petroleum

Ecology Site I.D. Number

1171

SECTION B

CONTAMINATION PRELIMINARY ASSESSMENT.

1. The possible contamination at this site is known or unknown.

2. The PPE Level of protection appropriate for this site is A B C D

3. Additional Personal Protective Equipment required.

4. Backup assistance for "buddy system" IS IS NOT required.

If assistance or backup is required, specify individuals in Section B.

5. Medical assistance can be made available by telephone

911 or

6. Nearest hospital is:

Centralia Providence Hospital
914 S Scheuber Road, Centralia, 360-330-8512

Morton General Hospital

521 Adams, Morton 360-496-5112

7. Fire Department Response: tele 911

SECTION C

Site Information

Site location:

Site Contact Person and Phone

Note: In an emergency it may be necessary to give location.

Assistance on site:

Name

Phone

SECTION D

Personal Protective Equipment Required for Work Intended.
(Circle all appropriate items.)

Level C

APR with particulate, Volatile Organic Solvent, acid gas filters.

Outer protective garment or Tyvec suit

Level D

Work Gloves rubber gloves combination

SECTION E Decontamination

Decon requirements:

Soap and water wash all tools and equipment.

Sanitarian

[Signature]



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

March 1, 2001

Kevin Russell Kent
P.O. Box 373
Salmon, WA 98582

Subject: Site Hazard Assessment - Exline Petroleum
Ecology Facility Site ID: 1171

Dear Mr. Kent:

The Department of Ecology (Ecology) will conduct a site hazard assessment (SHA) of Exline Petroleum, State Highway 508, Onalaska, WA 98570, under the Model Toxics Control Act (MTCOA), Chapter 173-340-320 WAC. This site has been on Ecology's Confirmed and Suspected Contaminated Sites List, awaiting assessment, since November 12, 1992. This assessment will be performed by Steve Garrett, Lewis County Environmental Health. He will contact you in the near future to arrange a suitable time for a site visit, if necessary.

The purpose of an SHA is to gather information on past/present waste management activities, along with other basic site-specific environmental data, in order to score the site following the Washington Ranking Method (WARM) Scoring Manual guidelines. Potential/actual threats to human health and the environment are evaluated for each applicable migration route, with a resultant "hazard ranking" for the site determined.

Sites are ranked on a scale of one to five, with one representing the highest level of concern, and five the lowest, relative to all other assessed/ranked sites in the state. The level of relative concern may be such that a recommendation of "No Further Action" (NFA) is made, and your site will then be removed from Ecology's Integrated Site Information System (ISIS) list.

For your information, Ecology will publish a notice in an upcoming issue of the Site Register that an SHA is scheduled for this site. This notice may evoke media inquiries. Likewise, the outcome of the SHA, either as a ranked site or a determination as NFA, will be published in the Site Register.

In addition to any required fieldwork, the following information will be considered in scoring this site:

- Ecology Southwest Regional Office Site Files
- Lewis County Environmental Health Site Files

LEWIS COUNTY HEALTH & SOCIAL SERVICES



ENVIRONMENTAL HEALTH DIVISION

PUBLIC SERVICES BUILDING
350 N. MARKET BLVD.
CHEHALIS, WA 98532-2626
PHONE: (360) 740-1277 • FAX: (360) 740-1245 • TDD: 740-1480

STEVE MYHRE, DIRECTOR
DIANA T. YU, M.D., M.S.P.H., HEALTH OFFICER

August 24, 2001

Mr. Kevin Kent
PO Box 373
Salicum, WA 98582

Subject: Site Hazard Assessment/Ranking – Exline Petroleum Site
Facility # 1171

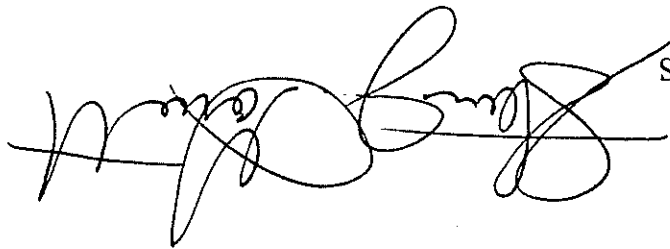
Dear Mr. Kent,

Lewis County Environmental Health has completed the site hazard assessment (SHA) of the Exline Petroleum site, 1819 SH 508, Onalaska, Lewis County, WA, 98570, as required under the Model Toxics Control Act. This site's hazard ranking, an estimation of the potential threat to human health and/or the environment, relative to all other Washington state sites assessed at this time, has been determined to be a 5 (five) where 1 represents the highest relative risk and 5 the lowest. For your information, Ecology will be publishing the ranking of this and other similarly assessed/ranked sites in the August, 2001, Special Issue of the Site Register. The site hazard ranking will be used in conjunction with other site-specific considerations in determining Ecology's priority for future actions.

Please contact me at (360) 740-1233 if you have any questions relating to the SHA of your site. If you have inquiries about the site scoring/ranking process, please call Michael Spencer, Ecology, at (360) 407-7195. For inquiries regarding cleanup-directed activities at your site now that it will be on Ecology's Hazardous Sites List, please call Dave Smith, Ecology, at (360) 407-6250.

Sincerely,

Steven J. Garrett, RS
Sanitarian



cc: Michael Spencer, Washington State Department of Ecology
Dave Smith, Washington State Department of Ecology
Kathleen Bussen, Lewis County Health Department