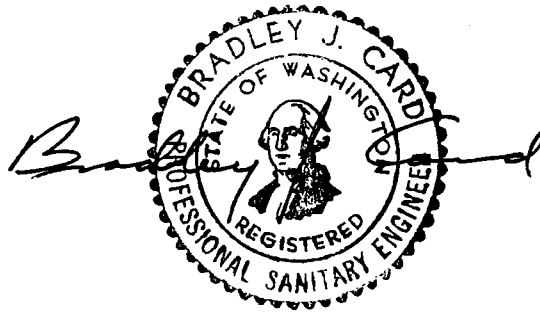


SITE ASSESSMENT REPORT
on
PETROLEUM RELEASE
CITY OF ELLENSBURG
WEST EIGHTH AVENUE RIGHT-OF-WAY
Ellensburg, Washington



March 1991

Job No. 91052

Prepared by

PLSA ENGINEERING & SURVEYING
WDOE LIC. NO. S000210
1120 West Lincoln Avenue
Yakima, WA 98902
(509) 575-6990

MAR 14 1991
rw

SITE ASSESSMENT REPORT
on
PETROLEUM RELEASE
CITY OF ELLENSBURG
WEST EIGHTH AVENUE RIGHT-OF-WAY
Ellensburg, Washington

INTRODUCTION

During the course of a cleanup of petroleum contaminated soil (PCS) at Ward Rugh Inc., P.O. Box 68, Ellensburg, Washington, a petroleum product not originally characterized was encountered. This product increased in concentration as the soil excavation proceeded into 700 block of West Eighth Avenue. This petroleum release is located at SW1/4, SW 1/4, SEC 5, TWP 18N, R18E. See Figure 1.

All of the PCS related to the Ward Rugh, Inc. cleanup has been removed. This is documented in site closure report dated March 1991.

This report summarizes site conditions, and proposed cleanup and disposal of PCS including the results of laboratory testing of representative soil samples for characterization of the spilled petroleum by EPA 8015. A geotechnical engineer from PLSA Engineering and Surveying, WDOE Lic. No. S000210, experienced with local soil conditions will monitor removal of contaminated soil.

MAR 14 1991

vw

The owner's representative and contact person for this project is as follows:

Ms. Glenna Bradley-House,
City Attorney
City of Ellensburg
City Hall
420 North Pearl Street
Ellensburg, Washington 98926
phone (509) 962-7259

SURFACE CONDITIONS

A graveled street covers the spill area.

SUB-SURFACE CONDITIONS

Below the gravel street surface, local clayey silt topsoil approximately 4 feet thick overlies a stratum of alluvial cobbles, gravel, and sand. The water table is seasonally variable with the irrigation season. Water was found at approximately 8 feet below the surface at the time of opening the adjacent Ward Rugh, Inc. tank basin. The water table is expected to trend lower since the irrigation water was turned off in early October and will not return until approximately April 1. The volume of contaminated soil cannot not be accurately determined, but is estimated at approximately 2,000 cubic yards.

From general topography and water entering into the open excavation, it appears that the groundwater hydraulic gradient is to the southwest toward the small stream bordering the south boundary of the Ward Rugh property.

SAMPLING PLAN

Representative soil and water samples will be collected from the excavation. Sample containers will be supplied by the analytical laboratory and will be clean glass with Teflon lined, screwed caps. Sampling equipment will be cleaned between samplings. Water samples from below the surface will be collected using a clean, Teflon bailer.

All samples will be stored and shipped to the laboratory by overnight express in a refrigerated, insulated container.

CONTAMINANT CHARACTERIZATION

Petroleum odor was present when the soil in the spill was disturbed. Some free product, which was observed producing an oily sheen on the water, had accumulated in the bottom of the excavation. It appeared that the sheen was the result of contaminated soil from above coming into contact with the water. A sample was collected and submitted to a laboratory for analysis for contaminant characterization by EPA 8015. Results of the laboratory analyses are found in Appendix I listed under Sample No. 21. Heavy oil was the contaminant identified. This indicates that the contaminant is higher molecular weight than diesel. Heavy oil is usually less toxic and more environmentally inert than the lighter petroleum products.

~~A Burlington-Northern Railroad roundhouse was located on the other side of the stream from the spill location.~~ The product in the subject spill characterized as heavy oil has the appearance of oil used by railroads in the past. It is possible that the spill has been present for more than 40 years.



CLEANUP PROCEDURE AND PCS REMOVAL

Locally available excavation equipment operated by a WDOE licensed contractor will be used for PCS removal and cleanup.

A Photovac TIP 1 photoanalyzer will be used to detect volatile organic compounds (VOC's) as contaminated soil is removed until significant readings are no longer obtained by testing headspace in sample jars that have been warmed to a uniform 70 degree F. Representative soil and water samples will then then collected and submitted for laboratory analysis to verify the TIP results.

There was no evidence that contamination had spread from the Ward Rugh, Inc. property into the City right of way. Rather, the reverse appeared to be true. A polyethylene membrane barrier separates the backfilled north edge of the existing cleanup excavation to delineate the boundary between the Ward Rugh cleanup and West Eighth Avenue.

DISPOSAL OF CONTAMINATED SOIL

The estimated volume of contaminated soil to be removed is 2,000 cubic yards. It is understood that the Kittitas County Sanitary Landfill at Ryegrass will soon be certified to receive PCS. The City proposes to delay cleanup until this disposal site is available. The nearest other available disposal site is at the Yakima County Sanitary Landfill at Terrace Heights, approximately forty miles south. The cost of hauling to this site is prohibitive.

→ SPREAD OF CONTAMINATION

SITE CLOSURE

The excavation will be backfilled with clean fill and the surface restored for use as a street.

Ward Rugh, Inc. had recently cleaned up an adjacent diesel spill. This cleanup area was needed for their operations, so the excavation has been backfilled and a plastic membrane installed along the West Eighth Avenue boundary as a barrier and marker.

SCHEDULE

Uncontaminated water samples were obtained from the Ward Rugh, Inc. cleanup excavation located down gradient and between the subject spill and the stream. Therefore, there is no evidence that the heavy oil is contaminating water.

Seasonal rise in the water table is expected soon and certainly before the Kittitas County Sanitary Landfill becomes available as a disposal site. A higher water table will necessitate more excavation dewatering resulting in a greater hydraulic load on the Ellensburg sewage treatment plant which would be experiencing seasonal increased flow as well.

The City proposes to cleanup in late 1991 when the water table has again lowered, the wastewater treatment plant is experiencing seasonally low flow, and the Kittitas County Sanitary Landfill is available to receive PCS.

NEARBY WELLS

Locations and well logs for documented wells within one half mile of the spill area may be found in Appendix II.

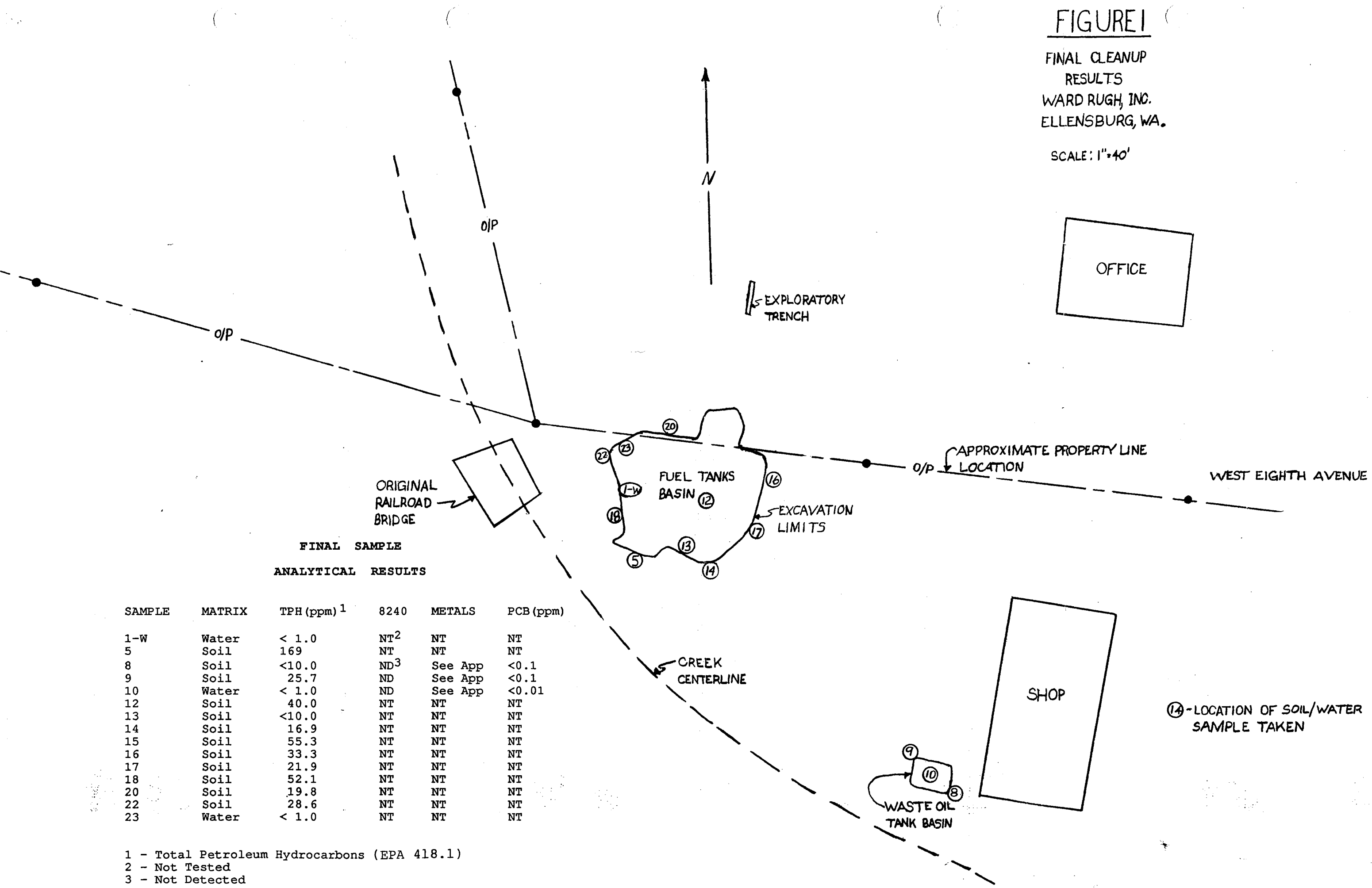
APPENDIX I

Analytical Results

FIGURE I

FINAL CLEANUP
RESULTS
WARD RUGH, INC.
ELLENSBURG, WA.

SCALE: 1"=40'



FINAL SAMPLE ANALYTICAL RESULTS

SAMPLE	MATRIX	TPH (ppm) ¹	8240	METALS	PCB (ppm)
1-W	Water	< 1.0	NT ²	NT	NT
5	Soil	169	NT	NT	NT
8	Soil	<10.0	ND ³	See App	<0.1
9	Soil	25.7	ND	See App	<0.1
10	Water	< 1.0	ND	See App	<0.01
12	Soil	40.0	NT	NT	NT
13	Soil	<10.0	NT	NT	NT
14	Soil	16.9	NT	NT	NT
15	Soil	55.3	NT	NT	NT
16	Soil	33.3	NT	NT	NT
17	Soil	21.9	NT	NT	NT
18	Soil	52.1	NT	NT	NT
20	Soil	19.8	NT	NT	NT
22	Soil	28.6	NT	NT	NT
23	Water	< 1.0	NT	NT	NT

⑭ - LOCATION OF SOIL/WATER SAMPLE TAKEN

1 - Total Petroleum Hydrocarbons (EPA 418.1)
2 - Not Tested
3 - Not Detected

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: PLSA Engineering

Date: February 8, 1991

Report On: Analysis of Soil & Water

Lab No.: 15875

IDENTIFICATION:

Samples Received on 02-07-91

Project: 90320

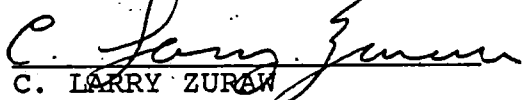
ANALYSIS:

Lab Sample No.	RUSH 1	RUSH 2	RUSH 3	RUSH 4
Client Identification	20	22	23	21
Matrix/Units	Soil ppm	Soil ppm	Water ppm	Soil ppm
Total Petroleum Hydrocarbons by EPA Method 418.1	19.8	28.6	< 1.0	37,200
Total Petroleum Fuel Hydrocarbons by EPA SW-846 Modified Method 8015	NT	NT	NT	348
TPH as				Hvy. Oil

NT = Not Tested

Note - Results reported on an as received, wet basis.

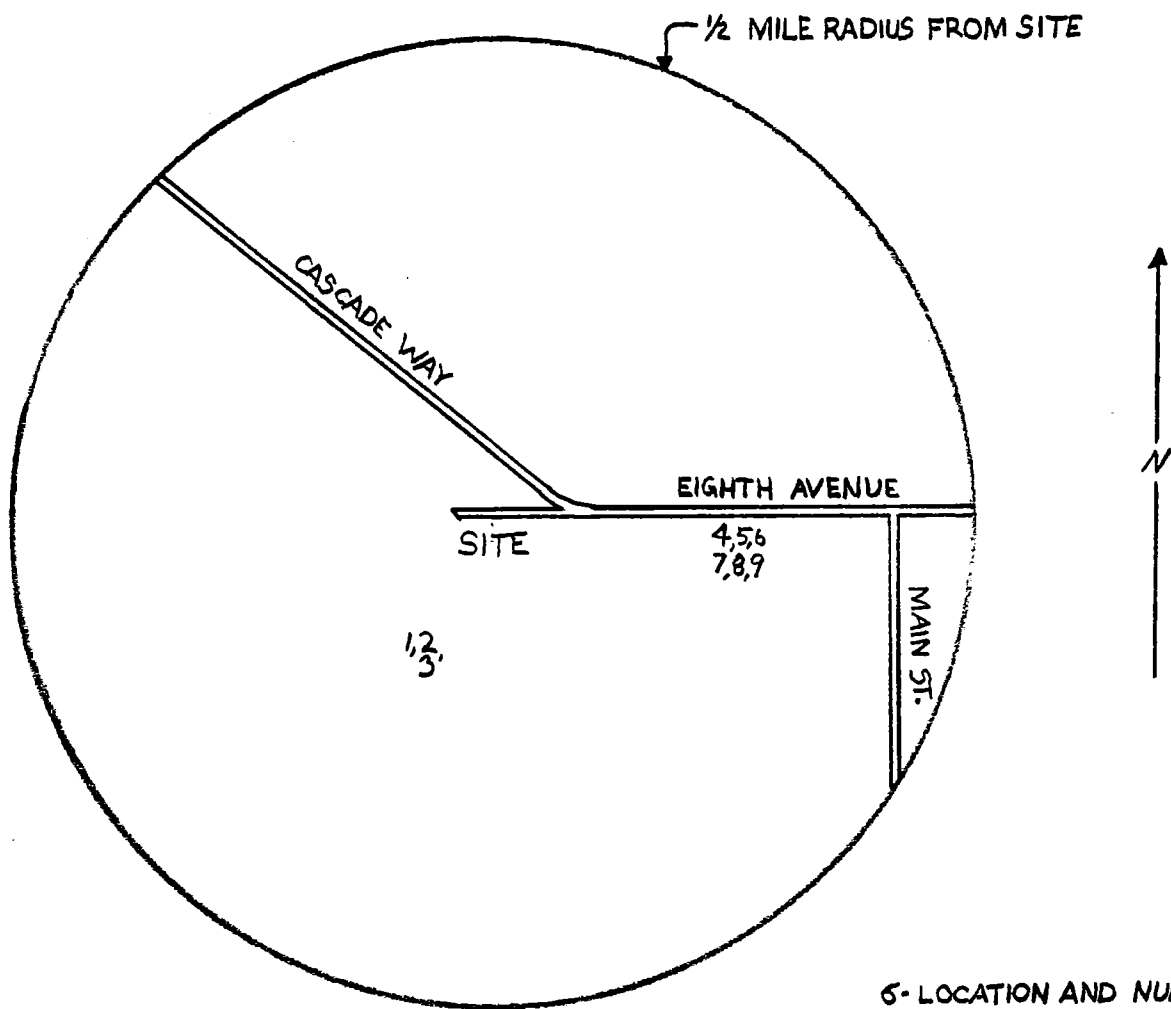
SOUND ANALYTICAL SERVICES


C. LARRY ZURAW

APPENDIX II

Documented Well Locations

FIGURE 2
WELL LOCATION
MAP
WARD RUGH, INC.
ELLENSBURG, WA.



5- LOCATION AND NUMBER
OF MONITORING WELL

* NO DOCUMENTED WATER WELLS
WERE FOUND WITHIN 1/2 MILE
OF THE SITE

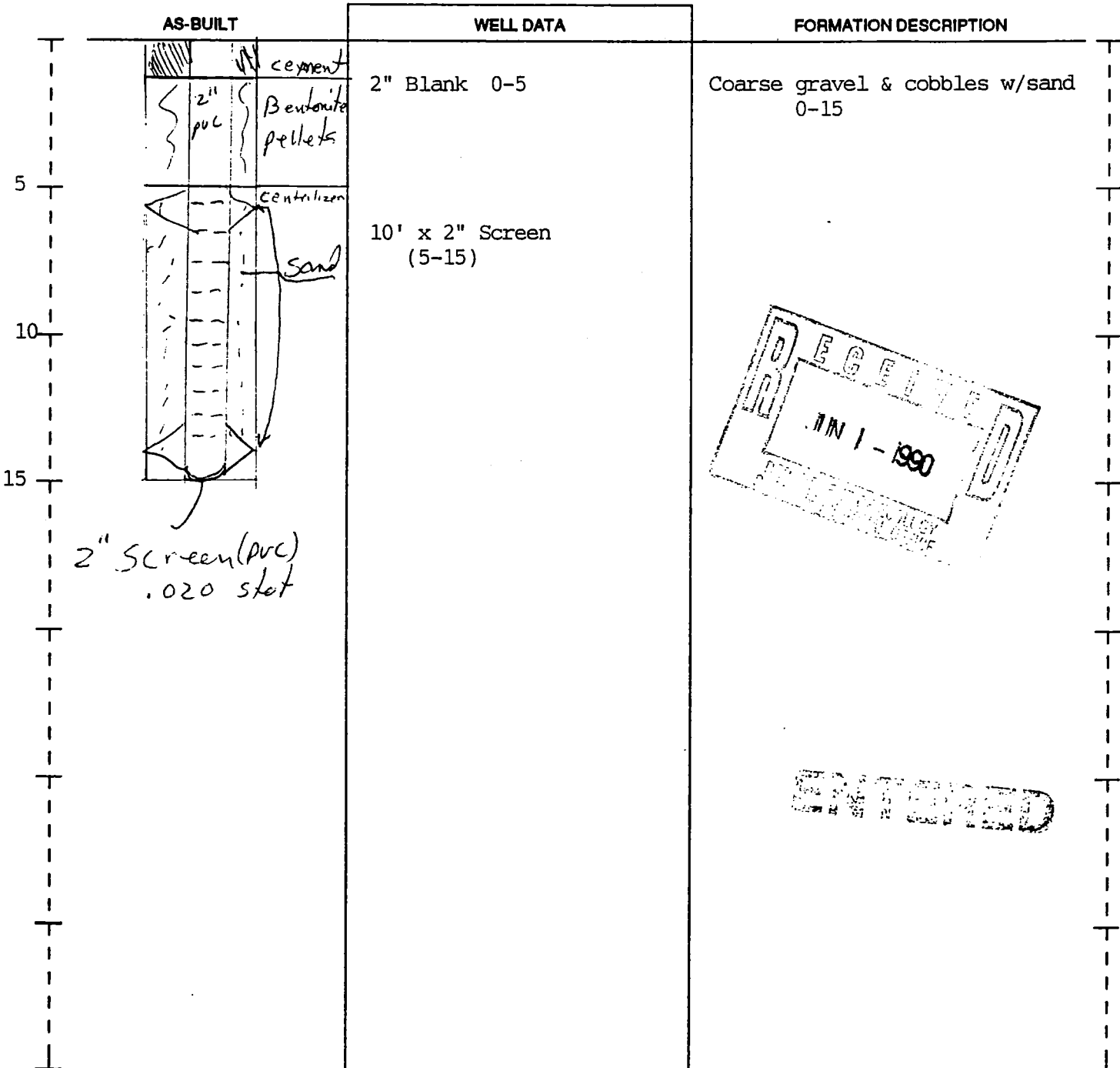
3136

RESOURCE PROTECTION WELL REPORT

START CARD NO. _____

PROJECT NAME: Waste Management Svc.
 WELL IDENTIFICATION NO. X 3
 DRILLING METHOD: Air Rotary
 DRILLER: Mike Robinson
 FIRM: Ponderosa Drilling
 SIGNATURE: *Michael W. Robinson*
 CONSULTING FIRM: Golder Associates Inc.
 REPRESENTATIVE: Seth Brandonberger

COUNTY: Kittitas
 LOCATION: NW 1/4 NW 1/4 Sec 2 Twn 17N R 18E
 STREET ADDRESS OF WELL: Ellensburg, WA
607 N. Railroad AVE.
 WATER LEVEL ELEVATION: _____
 GROUND SURFACE ELEVATION: _____
 INSTALLED: _____
 DEVELOPED: _____



3135

2

RESOURCE PROTECTION WELL REPORT

START CARD NO. _____

PROJECT NAME: Waste Management Svc.

COUNTY: Kittitas

WELL IDENTIFICATION NO. X 2

LOCATION: NW 1/4 NW 1/4 Sec 2 Twn 17N R 18E

DRILLING METHOD: Air Rotary

STREET ADDRESS OF WELL: Ellensburg WA

DRILLER: Mike Robinson

607 N. Railroad AVE.

FIRM: Ponderosa Drilling

WATER LEVEL ELEVATION: _____

SIGNATURE: [Signature]

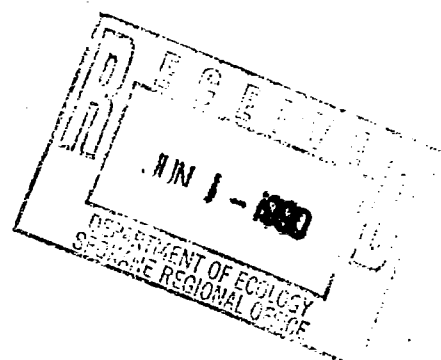
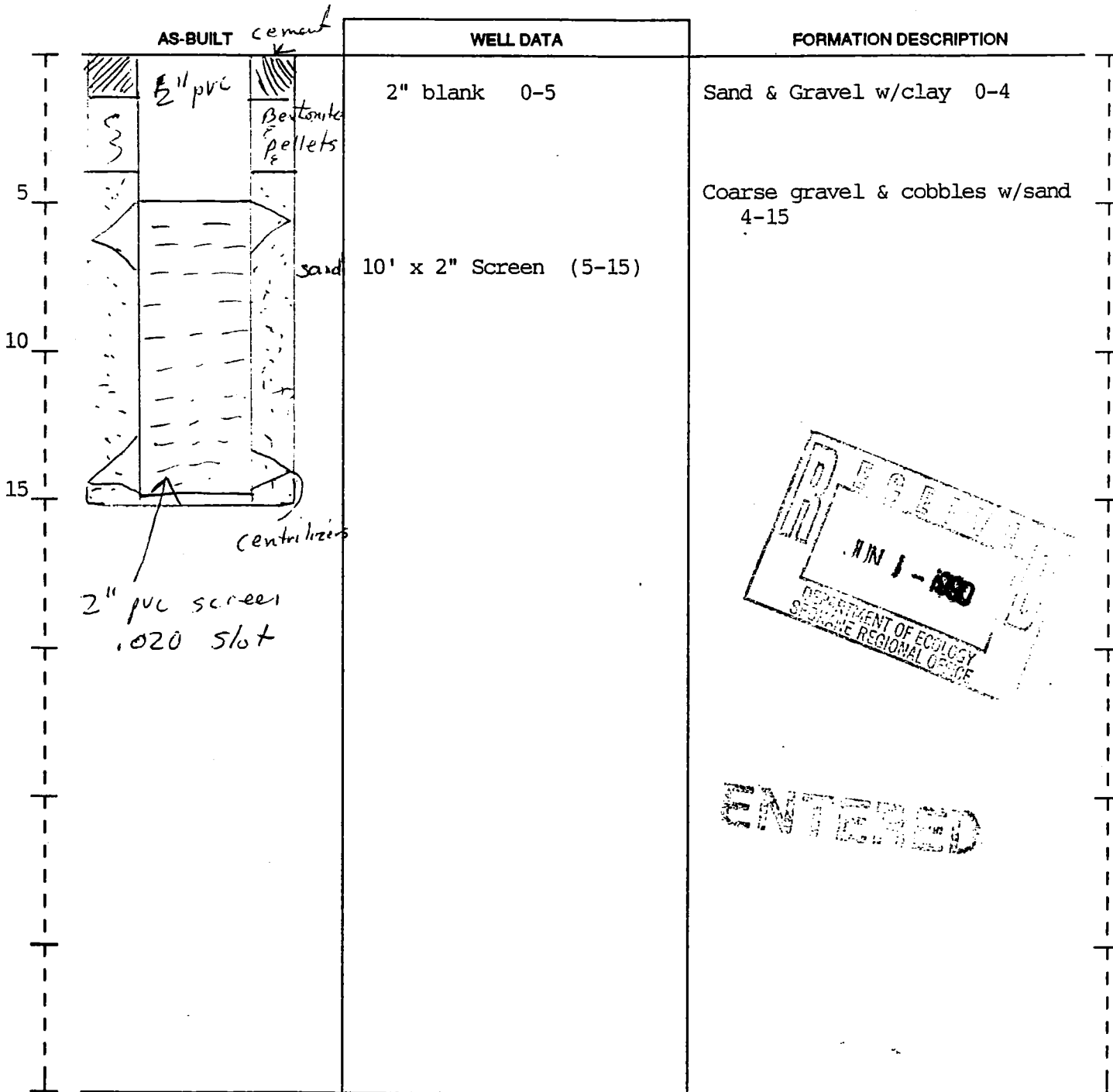
GROUND SURFACE ELEVATION: _____

CONSULTING FIRM: Golder Associates INC.

INSTALLED: _____

REPRESENTATIVE: Seth Brandonberger

DEVELOPED: _____



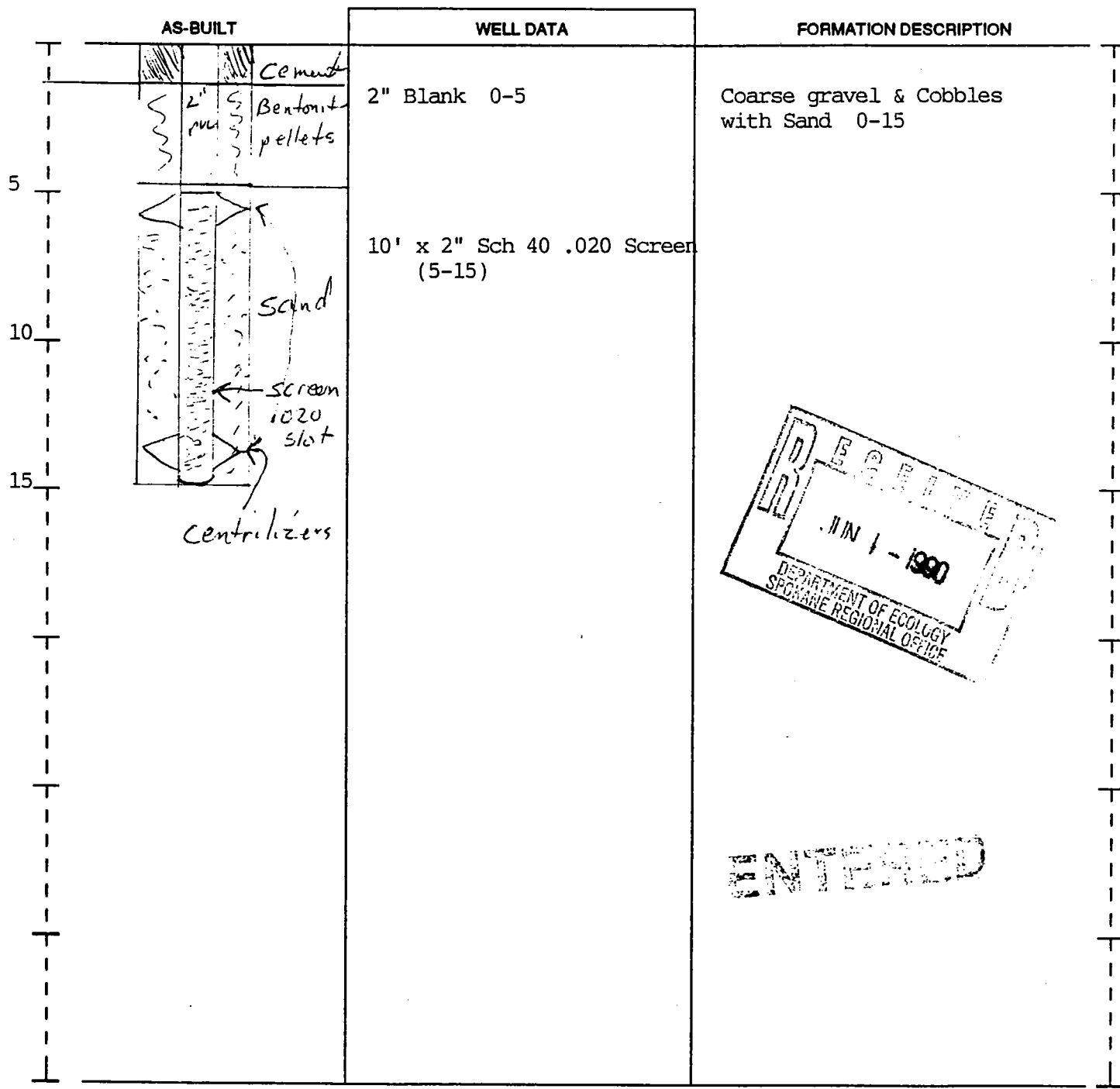
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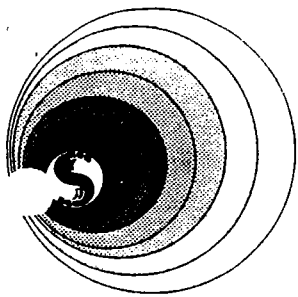
RESOURCE PROTECTION WELL REPORT

START CARD NO. _____

PROJECT NAME: Waste Management Svc.
 WELL IDENTIFICATION NO. 1
 DRILLING METHOD: Air Rotary
 DRILLER: Mike Robinson 1544
 FIRM: Ponderosa Drilling
 SIGNATURE: [Signature]
 CONSULTING FIRM: Golder Associates Inc.
 REPRESENTATIVE: Seth Brandonberger

COUNTY: Kittitas
 LOCATION: NW 1/4 NW 1/4 Sec 2 Twn 17N R 18E
 STREET ADDRESS OF WELL: Ellensburg WA
607 N. Railroad AVE.
 WATER LEVEL ELEVATION: _____
 GROUND SURFACE ELEVATION: _____
 INSTALLED: _____
 DEVELOPED: _____





SOIL SAMPLING SERVICE, INC.

1415 MERIDIAN EAST, PUYALLUP, WA 98371-1399

FEDERAL ID #: 91-0762274 WA CONT. #SOIL SS*344LO

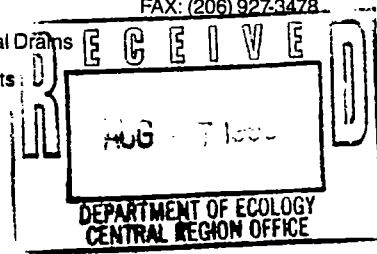
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3570 4

(206) 927-3173

TELEX: 466762

FAX: (206) 927-3478



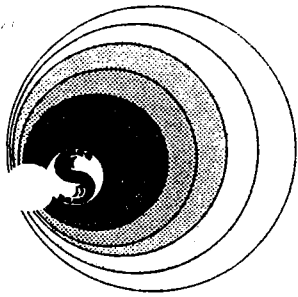
RESOURCE PROTECTION WELL REPORT

PROJECT NAME: Ellensburg Chevron
 WELL IDENTIFICATION NO.: MW-4
 DRILLING METHOD: Air rotary
 DRILLER: Harold Newwander / Edward Hinds 1442
 SIGNATURE: Harold Newwander / Ed Hinds
 CONSULTING FIRM: R. Henhouse + Zeman + Casson
 REPRESENTATIVE: Todd Westworth

JOB #: W2851 START CARD NO.: 075119
 COUNTY: Kittitas CITY: Ellensburg
 LOCATION: NE 1/4 NW 1/4
 SEC.: 2 TOWN: 17N RANGE: 18E
 DATUM: _____
 WATER LEVEL ELEVATION: 8' 5"
 INSTALLED: 8-8-90
 DEVELOPED: _____

WELL DATA	AS BUILT	FORMATION DESCRIPTION
6' muckment	4" x 5" sch 40	Sand + Gravel with Cobbles
1' concrete		
3' chips	4" x 10" x .020	Silty Fine Sand
Colorado Sand 10-20		
15'		

SCALE: 1" = 5'



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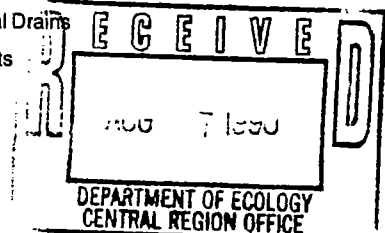
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RESOURCE PROTECTION WELL REPORT

PROJECT NAME: Ellensburg Chevron
 WELL IDENTIFICATION NO.: mw-5
 DRILLING METHOD: Air rotary
 DRILLER: Harold Newwander / Edward Higby 1442
 SIGNATURE: Harold Newwander / E Higby
 CONSULTING FIRM: Ritter House + Zeman Assoc.
 REPRESENTATIVE: Todd Wentworth

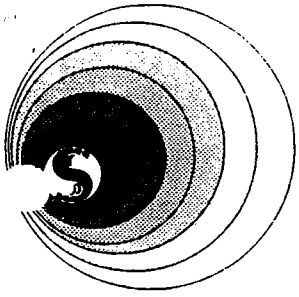
JOB #: W 2851 START CARD NO.: 075119
 COUNTY: Kittitas CITY: Ellensburg
 LOCATION: NE 1/4 24 1/4 1/4
 SEC.: 2 TOWN: 17N RANGE: 18E
 DATUM: _____
 WATER LEVEL ELEVATION: 5' 5"
 INSTALLED: 3-8-90
 DEVELOPED: _____

WELL DATA	AS BUILT	FORMATION DESCRIPTION
monument	0'	0'
1' concrete		
3' chips		
Colorado Sand 10-20	5' 4" x 10" x .020	Sand & Gravel with Cobbles
15'	10'	11' Silty Fine sand
15'	15'	15'

STAMPED

SCALE: 1" = 5'

PAGE _____ OF _____



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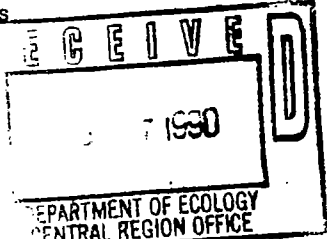
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RESOURCE PROTECTION WELL REPORT

PROJECT NAME: Ellensburg Chevron

JOB #: W 2951 START CARD NO.: 015119

WELL IDENTIFICATION NO.: MW 6

COUNTY: Kittitas CITY: Ellensburg

DRILLING METHOD: Air rotary

LOCATION: NE 1/4 MW 1/4 1/4

DRILLER: Harold Niswander / Edward Hinds 1442

SEC.: 2 TOWN: 17N RANGE: 18E

SIGNATURE: Harold Niswander / Ed Hinds

DATUM: _____

CONSULTING FIRM: Ritterhouse & Zeman Assoc

WATER LEVEL ELEVATION: 8' 10"

REPRESENTATIVE: Todd Wentworth

INSTALLED: 8-8-90

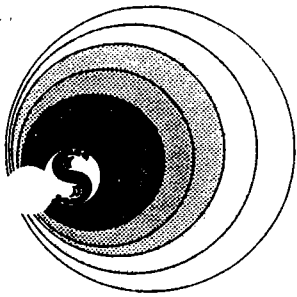
DEVELOPED: _____

WELL DATA	AS BUILT	FORMATION DESCRIPTION
0' monument	0'	0'
1' concrete	1' x 5' x 40' bent	Sand + gravel with cobbles
2' Chips	1' x 10' x 30'	
5' Colored Sand 10-20		12' Silty Fine Sand
15'		18'
18'		20'

ALTERED

SCALE: 1" = 5'

PAGE _____ OF _____



SOIL SAMPLING SERVICE, INC.

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FEDERAL ID #: 91-0762274 WA CONT. #SOIL SS*344LO

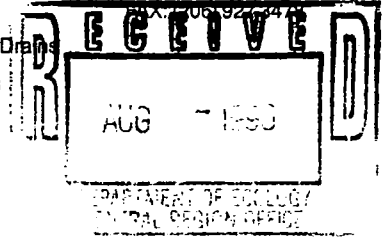
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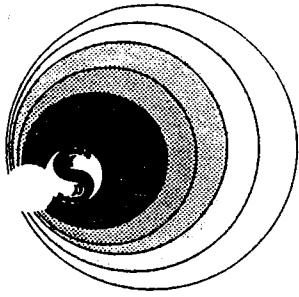
RESOURCE PROTECTION WELL REPORT

PROJECT NAME: Ellensburg Chevron
 WELL IDENTIFICATION NO.: MW # 7
 DRILLING METHOD: Air rotary
 DRILLER: Harold Niswander / Edward Hinds 1442
 SIGNATURE: Harold Niswander / [Signature]
 CONSULTING FIRM: Ritterhouse & Zeman Assoc
 REPRESENTATIVE: Todd Wentworth

JOB #: W 2851 START CARD NO.: 075119
 COUNTY: Kittitas CITY: Ellensburg
 LOCATION: NE 1/4 NW 1/4 1/4
 SEC.: 2 TOWN: 17N RANGE: 18E
 DATUM: _____
 WATER LEVEL ELEVATION: 9' 8"
 INSTALLED: 8-7-90
 DEVELOPED: _____

WELL DATA	AS BUILT	FORMATION DESCRIPTION
0' - 1' Monument Concrete	0' - 1' 4" x 5" sch 40	0'
1' - 3' chips	1' - 5' 4" x 5" sch 40	Sand + gravel with Cobbles
3' - Colorado Sand 10-20	5' - 10' 4" x 10" x 0.30	12' silty fine Sand
	10' - 15' 4" x 10" x 0.30	15'
	15' - 20' 4" x 10" x 0.30	

ENTERED



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1415 MERIDIAN EAST, PUYALLUP, WA 98371-1399

FEDERAL ID #: 91-0762274 WA CONT. #SOIL SS*344LO

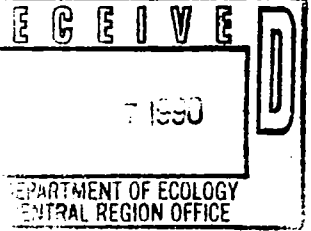
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TELEX: 466762

FAX: (206) 927-3478



RESOURCE PROTECTION WELL REPORT

PROJECT NAME: Ellensburg Chevron
 WELL IDENTIFICATION NO.: mw-8
 DRILLING METHOD: Air rotary
 DRILLER: Harold Niswander / Edward Hinds 1442
 SIGNATURE: Harold Niswander / Ed Hinds
 CONSULTING FIRM: Ritterhouse + Zeman Assoc
 REPRESENTATIVE: Todd Wentworth

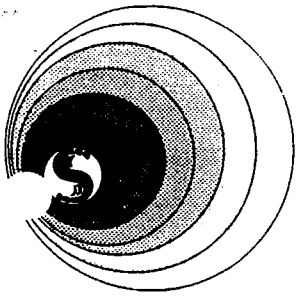
JOB #: W 2851 START CARD NO.: 075119
 COUNTY: Kittitas CITY: Ellensburg
 LOCATION: NE 1/4 NW 1/4
 SEC.: 2 TOWN: 17N RANGE: 18E
 DATUM: _____
 WATER LEVEL ELEVATION: 9' 4"
 INSTALLED: 8-7-90
 DEVELOPED: _____

WELL DATA	AS BUILT	FORMATION DESCRIPTION
monument	0'	0'
1' concrete		Sand + gravel with cobbles
3' chips		
2970-100 sand 10-20	5' 4" x 5" sand 4" x 10" x 20"	10' Silty fine sand
15'	15'	15'

ENTERED

SCALE: 1" = 5'

PAGE _____ OF _____



SOIL SAMPLING SERVICE, INC.

1415 MERIDIAN EAST, PUYALLUP, WA 98371-1399

FEDERAL ID #: 91-0762274 WA CONT. #SOIL SS*344LO

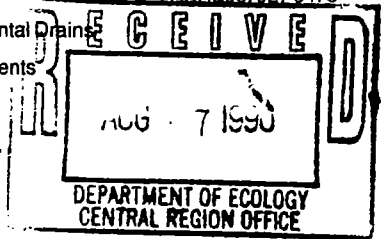
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TELEX: 466762

FAX: (206) 927-3478



RESOURCE PROTECTION WELL REPORT

PROJECT NAME: Ellensburg Chevron
 WELL IDENTIFICATION NO.: mw 9
 DRILLING METHOD: air rotary
 DRILLER: Harold Ausward / Edward Hertz 7042
 SIGNATURE: Harold Ausward / E. Hertz
 CONSULTING FIRM: Ritterhouse & Zeman Assoc
 REPRESENTATIVE: Todd Wentworth

JOB #: W2851 START CARD NO.: 075119
 COUNTY: Kittitas CITY: Ellensburg
 LOCATION: AVE 1/4 AVE 1/4 1/4
 SEC.: 2 TOWN: 17N RANGE: 18E
 DATUM: _____
 WATER LEVEL ELEVATION: 10'
 INSTALLED: 8-9-90
 DEVELOPED: _____

WELL DATA	AS BUILT	FORMATION DESCRIPTION
monument	0"	0"
concrete		
chips		
Colorado Sand	5"	Sand & Gravel with Cobbles
10-20	10"	Sitty Fine Sand
15"	15"	15"

SCALE: 1" = 5'

PAGE _____ OF _____