#536950

1/2

UST CLOSURE REPORT

Columbia Oil Co.

Site Location:
Sgt. Bubs
1345 Lee Boulevard
Richland, WA

WSI Job No. – 400-002-01

Prepared For:
Columbia Oil Company

Prepared By:

White Shield Inc.
801 Grandridge Road
Grandview, WA 98930
(509) 882-1144

June 2, 2000

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EXECUTIVE SUMMARY

This report documents the excavations, cleaning and removal of three 8,000-gallon gasoline Underground Storage Tanks (USTs), one 10,000-gallon diesel fuel UST, one 5,000-gallon gasoline UST, one 500 gallon used oil UST, one 250 heating oil UST. The unregistered tanks were located at 1345 Lee Boulevard, Richland, Washington.

The site was a bulk fuel storage and service station facility operated by Columbia Oil Company. The site operated as Columbia Oil Company from the 1950's to the mid 1980's. The USTs were used for the storage of petroleum products for distribution to service stations in the local area and for sale to the public. The USTs were in-service from the 1950's until the mid 1980's. The exact operational dates are unknown. The dispensers associated with the UST systems were removed in the mid 1980's, at the time the site no longer operated as a bulk fuel storage and service station facility. Retail businesses occupy the building, SGT Bub's and Ryder Sausage Haus.

Petroleum hydrocarbon contamination was detected in both the soil and groundwater at this site. A total of approximately 425 cubic tons of petroleum contaminated soil (PCS) were removed and transported to Lower Valley Remediaton, Mabton, WA for remedial treatment. Diesel contamination ranging from 6,100 parts per million (ppm) to 44 ppm remains in the soil on site. Gasoline contamination ranging from 14,000 ppm to 293 ppm remains in the soil on site. Benzene contamination ranging from 25 ppm to 0.64 ppm remains in the soil on site. Toluene contamination ranging from 370 ppm to 0.25 ppm remains in the soil on site. Ethylbenzene contamination from 250 ppm to 0.23 ppm remains in the soil on site. Total Xylene contamination remaining in the soil on site ranges from 1,200 ppm to 0.76 ppm. The contamination remaining in the soil ranges in depth from 8'-13' below the ground surface. Two groundwater samples were collected from the excavations and both samples indicated high concentrations of Gasoline, Benzene, Toluene, Ethylbenzene, total Xylenes and Diesel Fuel.

Petroleum Pump & Equipment, Kennewick, WA, provided the UST excavation, decommissioning and transportation services. The laboratory analyses of 45 samples were provided by On Site Environmental Laboratory, Redmond, Washington. White Shield, Inc., provided the site assessment services. Additional transportation and disposal services were provided by Lower Valley Remediation, Mabton, WA.

White Shield, Inc. recommends further site characterization.

1.0 REPORT DATE:

June 2, 2000.

2.0 TO BE SUBMITTED TO:

Washington State Department of Ecology
Central Region
15 W Yakima Avenue, Suite 200
Yakima, WA 98902

Department of Ecology
P.O. box 47655
Olympia, WA 98504-47655

3.0 OWNER'S NAME

Colin Bleiler
Columbia Oil Company
1345 Lee Boulevard
Richland, WA 99352

4.0 LOCATION OF PROPERTY

The address of the site is 1345 Lee Boulevard, Richland, Washington. Refer to Exhibit B, Site Location Map.

5.0 ON-SITE PERSONNEL

Rick Funderburk
White Shield, Inc.
801 Grandridge Road
Grandview, WA 98930

Jim Christensen
Petroleum Pump & Equipment
23 West Columbia Drive
Kennewick, WA

6.0 SCOPE AND CONDITIONS

This report documents the excavations, cleaning and removal of three 8,000 gallon gasoline USTs, one 10,000 gallon diesel fuel UST, one 5,000 gallon gasoline UST, one 500 gallon used oil UST, one 250 gallon heating oil UST, piping and plumbing associated with and disposal of related waste products. A summary of work, observations, laboratory reports, correspondence and all relevant documents are provided.

Petroleum Pump & Equipment, Kennewick, WA, provided the UST excavation, decommissioning and transportation services. The laboratory analyses of 45 samples, (eight composite samples and thirty-seven individual samples), were provided by On Site Environmental Laboratory, Redmond, Washington. White Shield, Inc., provided the site assessment services. Additional transportation and disposal services were provided by Lower Valley Remediation, Mabton, WA.

7.0 LOCATION OF TANKS ON PROPERTY

The three 8,000-gallon gasoline USTs were located east of the SGT Bub's building and the dispensers associated with them were located north of the SGT Bub's building. Refer to Appendix B, Site Sketch.

The 10,000-gallon diesel fuel UST, the 5,000-gallon gasoline UST and the 500 gallon used oil UST were located south and east of SGT Bub's building. One dispenser island in association with the 10,000-gallon diesel fuel UST and the 5,000-gallon gasoline UST was located to the west (adjacent to the building) of the excavation. The heating oil UST was also located west of and adjacent to SGT Bub's building. Please refer to the Site Sketch shown in Exhibit B.

UST SYSTEM DATA

TANK ID	Date Installed	Size (gal)	Type	Contents	Status
NA	Unknown	10,000	Steel	Diesel Fuel	Removed
NA	Unknown	5,000	Steel	Gasoline	Removed
NA	Unknown	8,000	Steel	Gasoline	Removed
NA	Unknown	8,000	Steel	Gasoline	Removed
NA	Unknown	8,000	Steel	Gasoline	Removed
NA	Unknown	500	Steel	Used Oil	Removed
NA	Unknown	250	Steel	Heating Oil	Removed

8.0 SITE HISTORY

Prior to the mid 1980's the site operated as Columbia Oil Company Bulk Fuel Storage and Service Station. The USTs were used for the storage of petroleum products for distribution to service stations in the local area and for sale to the public. The USTs were installed in the 1950s, the exact installation date is unknown. The dispensers associated with the UST systems were removed in the mid 1980's. SGT Bub's, a military surplus store and Ryder Sausage Haus, a small deli currently occupy the building.

There are four sites within a ½ of a mile of the site that are on the Washington State Leaking Underground Storage Tank List (LUST). The Richland School District Maintenance Building is located 500' to the Northeast, New City Cleaners approximately 750' to the North, P & K Auto Service Inc., approximately 800' to the east, and Grant Land Company, approximately 1,000' east of the site. Refer to Exhibit B, Site Location Sketch.

9.0 TANK REMOVAL CHRONOLOGY

9.1 Dates of Specified Field Activities

Mobilization	March 16, 2000
Tank Removals	March 17 - 23, 2000
Soil Excavation	March 17 – 23, 2000
Sampling	March 17 – 23, 2000
Backfilling Completed	March 23, 2000
Analytical Results Received	April 6, 10, 14, 2000
Report Completed	June 2, 2000

10.0 OBSERVATIONS

The address of the site is 1345 Lee Boulevard, Richland, and Washington. Refer to Exhibit B, Site Location Map.

Excavation #1 – 10,000 gallon diesel fuel UST, 5,000-gallon gasoline UST and 500 gallon used oil UST

One 10,000-gallon diesel fuel UST and one 5,000-gallon gasoline UST were removed from a single excavation on March 16 &17, 2000. Refer to Exhibit B, Maps and Drawings, Sample Location Excavation #1. The irregularly shaped excavation measured 30' along the northern edge, 12' in width along the southern edge, 12' and 15' in width on the east and west side, 28' in length, and 13' in depth.

The soil exposed in the excavation is:
Surface to 3" – compacted, angular gravel
3" to 3' - medium fine brown sand
3' to 3' 3" - coarse, salt and pepper sand with gravel
3' 3" to 8' - medium fine brown sand
8' to 14' - fine grey silt with some clay, @ 13' groundwater was encountered.
14' - very large cobbles with boulders.

Soil staining and strong petroleum odors were observed in the area surrounding the 5,000-gallon UST. The contamination appeared to follow the along the product lines toward the former dispenser island. Groundwater was encountered at 13'. Soil and groundwater samples were collected for laboratory analysis.

Beneath the former location of the dispenser island associated with the diesel and gasoline tanks a used oil UST was discovered at a depth of 2 feet below grade. The UST held approximately 400 gallons of used oil. Oil Re-Refining, Kennewick, WA was contracted to remove the used oil from the UST. Refer to Exhibit D, Field Data, Invoice #75758. The soil surrounding the used oil tank was heavily stained.

Ten soil samples were collected along the sidewalls of the UST excavation; one soil sample was collected at the bottom of the former location of the 500 gallon used oil UST. Five soil samples were collected from the stockpile generated during the excavation and remedial action activities.

Approximately 200 yards of petroleum contaminated soil were removed from Excavation #1 and placed on plastic liner awaiting disposal at an appropriate Treatment, Disposal or Storage facility (TSD). Due to the close proximity of the existing building, contaminated soil was left in place next to the location of the used oil UST. Soil sample # 400-003-110 was collected at a depth of 5', along the west wall of the excavation. Refer to Appendix B, Maps, and Drawings.

Excavation #2 – Three 8,000 gallon gasoline USTs

Three 8,000 gallon gasoline USTs were removed from a single excavation measuring 52' in length, 25' in width, 13' in depth on March 17, 2000. A concrete slab covered the USTs after removing the concrete slab, a petroleum odor was noticed. The soil excavated during the removal of these USTs was stockpiled with the PCS generated from Excavation #1. Refer to Appendix B, Sample Location Sketch.

The soil exposed in the excavation is:
Surface to 3" – compacted, angular gravel
3" to 3' - medium fine brown sand
3' to 3' 3" - coarse, salt and pepper sand with gravel
3' 3" to 8' - medium fine brown sand
8' to 14' - fine grey silt with some clay.

Groundwater was encountered at a depth of 13'. A slight sheen was observed on the surface of the groundwater surface. Groundwater samples were collected for laboratory analysis.

Seven soil samples were collected along the sidewalls of the UST excavation. Five soil samples were collected from the stockpile.

Test pits were excavated at the former location of the dispensers associated with the 8,000 gallon gasoline USTs. The former dispensers were located approximately 25' to the west of the tanks. Refer to Appendix B, Maps and Drawings, Test Pits #1 and #2.

The soil profile in both of the test pits was brown silt to a depth of 4'. At 4' gray silt, concrete and other miscellaneous debris was encountered. A strong petroleum odor was observed in soil from both of the test pits. Test Pit #1 was excavated to a depth 13'. Groundwater was not intercepted in the test pit. Test Pit #2 was excavated to a depth 6'. Further excavation was stopped due to the large amount and size of concrete debris.

Approximately 150 yards of pcs from the test pits and Excavation #2 were excavated and stockpiled on site awaiting disposal.

Excavation #3 – 250 Heating Oil UST

One 250-gallon heating oil UST was removed from a single excavation measuring 6' in length, 6' in width, and 6' in depth. The soil was a fine to medium brown sand with gravel and rocks from 0 – 6'.

Five soil samples were collected from the sidewalls of the UST and the bottom of the excavation. Three additional soil samples were collected from the stockpile generated during the removal of the UST.

No staining or odors were observed around the UST, or the piping connections. A visual inspection of the UST revealed no indication of holes or apparent leakage.

11.0 WELL LOGS AND WATER LEVEL DATA

Groundwater near this site ranges in depth from 6 feet to 13 feet. Refer to the well logs in Exhibit F.

12.0 SAMPLING PROCEDURES

The sampling plan (Exhibit B) and the attached field-sampling log (Table 2) show the location, depth and type of samples taken. In general, sample collection and control followed this protocol:

Select a laboratory certified clean sample jar for sample collection.

Using clean latex gloves, tightly pack the soil sample in the sample jar (4 oz.) to the top of the jar to prevent any airspace. When collecting a groundwater sample, from an open pit submerge the sample in the groundwater table until the sample container is full. Invert the sample container to ensure no headspace is present in the sample.

Label the jar with the sample number, the type of laboratory test required, the date, name of site and sampler. The sample is then entered on the field log.

Cool the sample in wet ice to approximately 4 degrees centigrade.

Repack the samples for shipment to the laboratory in blue ice and a cooler. Complete the chain of custody.

Relinquish sample to courier for shipment to the laboratory.

13.0 LABORATORY RESULTS

On March 31, 2000, the samples were delivered to OnSite Environmental, Redmond, WA. The following table summarizes the laboratory results. The laboratory reports are included in Exhibit C.

Excavation #1
(10,000-gallon diesel fuel UST, 5,000-gallon gasoline UST and 500 gallon used oil UST)

LABORATORY ANALYTICAL RESULTS
Results are in parts per million (ppm)

SAMPLE NUMBER	LOCATION/DEPTH	NWTPH-G	B	T	E	X	NWTPH-Dx	
							Diesel Fuel	Oil
400-002-102	North sidewall @ 4' 5,000 Gallon UST	ND	ND	ND	ND	ND	ND	ND
400-002-103	North sidewall @ 5' 5,000 Gallon UST	ND	ND	ND	1.3	4.7	5,400	ND
400-002-104	West sidewall @ 6' 5,000 Gallon UST	ND	ND	ND	ND	ND	91	ND
400-002-105	Southwest sidewall @ 6' 10,000 Gallon UST	ND	ND	ND	ND	ND	ND	ND
400-002-106	East sidewall @ 6' 5,000 Gallon UST	ND	ND	ND	ND	ND	NT	NT
400-002-107	East sidewall @ 6' Used Oil UST	NT	NT	NT	NT	NT	ND	ND
400-002-108	Bottom Used Oil UST @ 8'	NT	NT	NT	NT	NT	170	ND
400-002-109	South sidewall @ 6' Used Oil UST	NT	NT	NT	NT	NT	ND	100
400-002-110	West sidewall @ 5' Used Oil UST	ND	ND	ND	ND	0.39	6100	1400
400-002-111	East sidewall @ 9' 10,000 Gallon UST	ND	ND	ND	ND	0.068	300	110
400-002-112	South sidewall @ 6' 10,000 Gallon UST	ND	ND	ND	ND	ND	ND	ND
400-002-201 400-002-202 Composite	Stockpile	85	.22	ND	ND	.19	NT	NT
400-002-203 400-002-204 Composite	Stockpile	NT	NT	NT	NT	NT	770	97
400-002-205	Stockpile	ND	ND	ND	ND	ND	ND	ND

NWTPH-Dx *= Northwest Total Petroleum Hydrocarbons, Diesel Extended*
NWTPH-G *= Northwest Total Petroleum Hydrocarbons, Gasoline*
B *= Benzene*
T *= Toluene*
E *= Ethyl benzene*
X *= Total Xylenes*
NT *= Not Tested*

Excavation #2
(Three 8,000 gallon gasoline USTs)

LABORATORY ANALYTICAL RESULTS
Results are in parts per million (ppm).

SAMPLE NUMBER	LOCATION/DEPTH	NWTPH-G	B	T	E	X	NWTPH-Dx		PB
							Diesel Fuel	Oil	
400-002-401	Northeast sidewall @ 5'	ND	ND	ND	ND	ND	NT	NT	NT
400-002-402	Northeast sidewall @ 10'	14,000	24	370	250	1,200	NT	NT	14
400-002-403	East sidewall @ 5'	ND	ND	ND	ND	ND	NT	NT	NT
400-002-405	East sidewall @ 8'	270	ND	ND	ND	.76	NT	NT	NT
400-002-406	South sidewall @8'	5,500	0.81	16	32	158	NT	NT	NT
400-002-407	West sidewall @ 10'	280	ND	ND	1.1	5.9	NT	NT	NT
400-002-409	North sidewall @ 8'	5,200	0.64	16	45	293	NT	NT	NT
400-002-501 400-002-502	Stockpile	370	ND	0.25	0.23	4.6	NT	NT	NT

NWTPH-Dx = *Northwest Total Petroleum Hydrocarbons, Diesel Extended*
NWTPH-G = *Northwest Total Petroleum Hydrocarbons, Gasoline*
B = *Benzene*
T = *Toluene*
E = *Ethyl benzene*
X = *Total Xylenes*
NT = *Not Tested*
Pb = *lead*

Test Pits #1 & #2
(Former Location of Dispenser Islands)

LABORATORY ANALYTICAL RESULTS
Results are in parts per million (ppm).

SAMPLE NUMBER	LOCATION/DEPTH	NWTPH-G	B	T	E	X	NWTPH-Dx	
							Diesel Fuel	Oil
400-002-700	Dispenser Island @ 13'	2,900	.36	1.2	14	67	ND	ND
400-002-701	Dispenser Island @6'	1,900	ND	ND	.51	.97	ND	ND

NWTPH-Dx = Northwest Total Petroleum Hydrocarbons, Diesel Extended
NWTPH-G = Northwest Total Petroleum Hydrocarbons, Gasoline
B = *Benzene*
T = *Toluene*
E = *Ethyl benzene*
X = *Total Xylenes*
NT = *Not Tested*

Excavation #3
(250 gallon diesel fuel UST)

LABORATORY ANALYTICAL RESULTS
Results are in parts per million (ppm).

SAMPLE NUMBER	LOCATION/DEPTH	NWTPH-G	B	T	E	X	NWTPH-Dx	
							Diesel Fuel	Oil
400-002-702 400-002-703	East sidewall @ 4' West sidewall @ 4'	ND	ND	ND	ND	ND	NT	NT
400-002-704 400-002-705	North sidewall @ 4' South sidewall @ 4'	NT	NT	NT	NT	NT	44	140
400-002-706	Bottom @ 6'	NT	NT	NT	NT	NT	ND	ND
400-002-707sp	Stockpile	NT	NT	NT	NT	NT	ND	ND
400-002-708sp 400-002-709sp	Stockpile	NT	NT	NT	NT	NT	30	99

NWTPH-Dx = Northwest Total Petroleum Hydrocarbons, Diesel Extended
NWTPH-G = Northwest Total Petroleum Hydrocarbons, Gasoline
B = *Benzene*
T = *Toluene*
E = *Ethyl benzene*
X = *Total Xylenes*
NT = *Not Tested*

LABORATORY ANALYTICAL RESULTS for GROUNDWATER SAMPLES
Results are in parts per billion (ppb).

SAMPLE NUMBER	LOCATION/DEPTH	NWTPH-G	B	T	E	X	NWTPH-Dx	
							Diesel Fuel	Oil
400-002-100W	Bottom of Excavation #1 @ 13'	290,000	1,700	8,900	5,600	30,500	1,000	ND
400-002-601W	Bottom of Excavation #2 Groundwater @ 13'	170,000	1,180	9,500	3,900	22,800	NT	NT

NWTPH-Dx = Northwest Total Petroleum Hydrocarbons, Diesel Extended
NWTPH-G = Northwest Total Petroleum Hydrocarbons, Gasoline
B = *Benzene*
T = *Toluene*
E = *Ethyl benzene*
X = *Total Xylenes*
NT = *Not Tested*

14.0 BACKFILLING

Backfilling of the excavations was completed on March 27, 2000. The stockpile generated from Excavation #3, the 250-gallon heating oil UST, was used as backfill for the excavation.

15.0 DISPOSAL

15.1 Disposal of the Tanks

Petroleum Pump and Equipment decommissioned, and cleaned the USTs. The USTs will be cut up and disposed at a recycling center to reclaim the metal.

15.2 Soil Disposal

A total of 425.94 tons of petroleum contaminated soil was generated during the removal and remedial efforts of the USTs from the site. The PCS was transported to Lower Valley Remediation, Mabton, WA for remediation and disposal.

16.0 CONCLUSION

16.1 Soil Analysis Summary

Excavation #1 (10,000 gallon diesel fuel, 5,000 gallon gasoline UST, and 500 gallon used oil UST)

The analytical laboratory results from Excavation #1 disclosed no petroleum contamination in the gasoline range above MTCA Method A Cleanup Levels remaining in the soil. However, both gasoline and diesel fuel contamination above MTCA Method A Cleanup Levels are present in the groundwater. Due to the close proximity of the building, removal of PCS to the west of the used oil UST was deemed unsafe. Additionally, an apparent hot spot of diesel contamination remains along the north sidewall of the 5,000-gallon gasoline UST.

Excavation #2 (Three 8,000 gallon gasoline USTs)

Analytical laboratory results disclosed that there was petroleum contamination exceeding the MTCA Method A Cleanup Levels for gasoline remaining in the soil and groundwater in Excavation #2. Analytical laboratory results also revealed gasoline contamination above MTCA Method A Cleanup levels in Test Pit #1 and Test Pit #2 (former dispenser island locations for the three 8,000-gallon gasoline USTs).

The soil contamination ranges in depth from 8'-13' below the surface. This is possibly due to groundwater elevation fluctuations. Groundwater can carry the petroleum hydrocarbons through the soil where some of the petroleum hydrocarbons will adhere to the soil particles.

Excavation #3 (Exempt 250 gallon heating oil UST)

The analytical laboratory results from Excavation #3 revealed no contamination above MTCA Level Cleanup Levels within the confines of the excavation or the stockpile generated during the excavation. The stockpile soil generated during the removal activities of the 250-gallon heating oil UST was used as backfill for Excavation #3.

16.2 Recommendation

WSI recommends drilling and installing groundwater monitor wells to determine the nature and conditions of the groundwater in accordance with the Model Toxics Control Act (WAC 173-340-450) which states ".... If contaminated soil is found in contact with the ground water or soil contamination appears to extend below the lowest soil sampling depth, then testing shall include the installation of ground water monitoring wells to test for the presence of possible ground water contamination....". The information obtained during drilling will be necessary to developing a remediation plan.

WSI recommends drilling a minimum of three groundwater-monitoring wells. During the drilling program, one monitoring well will be installed upstream, to evaluate the possibility of off site contamination migrating on to the property. A second monitoring well will be installed within the confines of the documented contamination zone. The data collected from this monitoring well will be used to document the petroleum contamination concentrations. The third groundwater monitoring well will be installed downstream of the contamination plume to ensure that the plume has not migrated off site and contaminated adjoining properties. In addition to the installation of the groundwater monitoring wells, a monitoring program should be developed.

17.0 LIMITATIONS

In performing our professional services, WSI uses a degree of care ordinarily exercised under similar circumstances by members of our profession. No warranty, expressed or implied, is made or intended. This report is intended for the exclusive use of Columbia Oil Company for specific application to the subject property. Our conclusions and recommendations, developed from our field and laboratory investigation reported herein, are based upon this firm's understanding of the project and are in concurrence with generally accepted practice.

EXHIBIT A

COMMUNICATION

UNDERGROUND STORAGE TANK
Closure and Site Assessment Notice

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FOR OFFICE USE ONLY
Site ID #:
Owner ID #:

See back of form for instructions

Please ✓ the appropriate box(es)
☐ Temporary Tank Closure ☐ Change-In-Service ☒ Permanent Tank Closure ☒ Site Check/Site Assessment

Site Information

Site ID Number NA
(Available from Ecology if the tanks are registered)
Site/Business Name Columbia Oil Company
Site Address 1345 Lee Bouldevard (Street)
City/State Richland, WA
Zip Code 99352 Telephone (509) 943-4008
Owner's Signature Colin A Blake

Owner Information
(This form will be returned to this address)

UST Owner/Operator Columbia Oil Company
Mailing Address 1545 Lee Boulevard (Street)
(P.O. Box)
City/State Richland, WA
Zip Code 943-4008 Telephone (509) 943-4008

Tank Closure/Change-In-Service Company

Service Company Petroleum Pump Company, Inc.
Certified Supervisor James Christianson Decommissioning Certification No. 1039398-26
Supervisor's Signature James Christianson
Address 23 West Columbia (Street) (P.O. Box)
Kennewick (City) WA (State) 99336 (Zip Code) Telephone (800) 727-9152

Site Check/Site Assessor

Certified Site Assessor Rick Funderburk of White Shield, Inc.
Address Street 801 Grandridge Road P.O. Box Box 477
City Grandview State WA Zip Code 98930 Telephone (509) 882-1144

Tank Information

Tank ID	Closure Date	Closure Method	Tank Capacity	Substance Stored
NA	3/14/2000	Removal	10,0000	Diesel Fuel
NA	3/17/2000	Removal	8,000	Gasoline
NA	3/17/2000	Removal	8,000	Gasoline
NA	3/17/2000	Removal	8,000	Gasoline
NA	3/14/2000	Removal	5,000	Gasoline
NA	3/14/2000	Removal	500	Used Oil

Contamination Present at the Time of Closure

☒ Yes ☐ No ☐ Unknown
Check unknown if no obvious contamination was observed and sample results have not yet been received from analytical lab.

☒ Yes ☐ No
If contamination is present, has the release been reported to the appropriate regional office?

To receive this document in an alternative format, contact the TOXICS CLEANUP PROGRAM at 1-800-826-7716 (voice) OR (360) 407-6006 (TDD).
ECY 020-94 (Rev. 6/95)

Instructions

AFTER COMPLETING THIS FORM, RETURN TO:

TOXICS CLEANUP PROGRAM
DEPARTMENT OF ECOLOGY
P.O. BOX 47655
OLYMPIA, WA 98504-7655

Please Read Carefully

This form is to be completed by the tank owner and submitted to Ecology within 30 days of tank closure. Mark the appropriate box(es) for temporary tank closure, permanent tank closure, change-in-service, or site assessment.

Permanent Closure and Change-In-Service require a site assessment be performed.

Site and Owner Information

Fill in the site and owner information. Include the Ecology site number, if known; also, be sure to provide telephone numbers so that any problems can be resolved quickly. **The tank owner MUST sign this form.**

Tank Closure/Change-In-Service Company and Site Check/Site Assessor

List the closure company and fill in the site assessor information for permanent closure or change-in-service. Ask to see the closure company supervisor's IFCI Certification and make sure that the certified supervisor signs this form.

Please note: **Individuals performing services MUST be certified by the International Fire Code Institute (IFCI), or other nationally recognized association by which they demonstrate appropriate knowledge pertaining to USTs or have passed another qualifying exam approved by the Department.**

Tank Information and Contamination Present at Time of Closure

Please fill in the tank information requested using tank ID numbers previously reported to Ecology. In the column entitled "Closure Method," indicate what manner of closure was used, such as closure in place or removal. Check the appropriate box(es) indicating if contamination is present and has been reported. Contamination found or suspected at the site must be reported to the appropriate Ecology regional office within 24 hours [see below for telephone numbers]. **If contamination is confirmed, a site characterization report must be submitted to the regional office within 90 days; if contamination is not confirmed, then this form, a site assessment checklist, and a site assessment report must be submitted to the above address within 30 days.**

Central	Eastern	Southwest	Northwest
(509) 574-2490 (voice)	(509) 456-2926 (voice)	(360) 407-6300 (voice)	(206) 649-7000 (voice)
(509) 454-7673 (TDD)	(509) 458-2055 (TDD)	(360) 407-6306 (TDD)	(206) 649-4259 (TDD)

The following tanks are exempt from notification requirements:

- Farm or residential tanks, 1,100 gallons or less, used to store motor fuel for personal or farm use only. The fuel must not be for resale or used for business purposes.
- Tanks used for storing heating oil that is used on the premises where the tank is located.
- Tanks with a capacity of 110 gallons or less.
- Equipment or machinery tanks such as hydraulic lifts or electrical equipment tanks.
- Emergency overflow tanks, catch basins, or sumps.

For more information, call toll free in the state of Washington 1-800-826-7716 (Message).

UNDERGROUND STORAGE TANK
Site Check / Site Assessment Checklist

FOR OFFICE USE ONLY
Site #: _____
Owner #: _____

INSTRUCTIONS

When a release has **not** been confirmed and reported, this Site Check/Site Assessment Checklist must be completed and signed by a person certified by IFCI or a Washington registered professional engineer who is competent, by means of examination, experience, or education, to perform site assessments. **The results of the site check or site assessment must be included with this checklist.** This form must be submitted to Ecology at the address shown below within 30 days after completion of the site check/site assessment.

SITE INFORMATION: Include the Ecology site ID number if the tanks are registered with Ecology. This number may be found on the tank owner's invoice or tank permit.

TANK INFORMATION: Please list all tanks for which the site check or site assessment is being conducted. Use the owner's tank ID numbers if available, and indicate tank capacity and substance stored.

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSEMENT: Please check the appropriate item.

CHECKLIST: Please initial each item in the appropriate box.

SITE ASSESSOR INFORMATION: This form must be signed by the registered site assessor who is responsible for conducting the site check/site assessment.

Underground Storage Tank Section
Department of Ecology
PO Box 47655
Olympia WA 98504-7655

SITE INFORMATION

Site ID Number (Available from Ecology if the tanks are registered): N/A

Site/Business Name: Columbia Oil Company

Site Address: 1345 Lee Boulevard (Street) Telephone: (509) 945-4008

Richland (City) WA (State) 99352 (Zip Code)

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
N/A	10,000 Gallon	Diesel Fuel
N/A	(3) 8,000 Gallon	Gasoline
N/A	5,000 Gallon	Gasoline

REASON FOR CONDUCTING SITE CHECK / SITE ASSESSMENT

Check one:

_____ Investigate suspected release due to on-site environmental contamination.
_____ Investigate suspected release due to off-site environmental contamination.
_____ Extend temporary closure of UST system for more than 12 months.
_____ UST system undergoing change-in-service.
_____ UST system permanently closed-in service.
X UST system permanently closed with tank removed.
_____ Abandoned tank containing product.
_____ Required by Ecology or delegated agency for UST system closed before 12/22/88.
_____ Other (describe): _____

CHECKLIST

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.	YES	NO
1. The location of the UST site is shown on a vicinity map.		
2. A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in site assessment guidance)		
3. A summary of UST system data is provided. (see Section 3.1.)		
4. The soils characteristics at the UST site are described. (see Section 5.2)		
5. Is there any apparent groundwater in the tank excavation?		
6. A brief description of the surrounding land use is provided. (see Section 3.1)		
7. Information has been provided indicating the number and types of samples collected, methods used to collect and analyze the samples, and the name and address of the laboratory used to perform the analyses.		
8. A sketch or sketches showing the following items is provided:		
- location and ID number for all field samples collected		
- groundwater samples distinguished from soil samples (if applicable)		
- samples collected from stockpiled excavated soil		
- tank and piping locations and limits of excavation pit		
- adjacent structures and streets		
- approximate locations of any on-site and nearby utilities		
9. If sampling procedures different from those specified in the guidance were used, has justification for using these alternative sampling procedures been provided? (see Section 3.4)	N/A	
10. A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method and detection limit for that method.		
11. Any factors that may have compromised the quality of the data or validity of the results are described.		
12. The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred.		

SITE ASSESSOR INFORMATION

Rick Funderburk
Person registered with Ecology

White Shield, Inc.
Firm Affiliated with

Business Address: 801 Grandridge Road
Street

Telephone: (509) 882-1144

Grandview | WA | 98930
City | State | Zip Code

I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

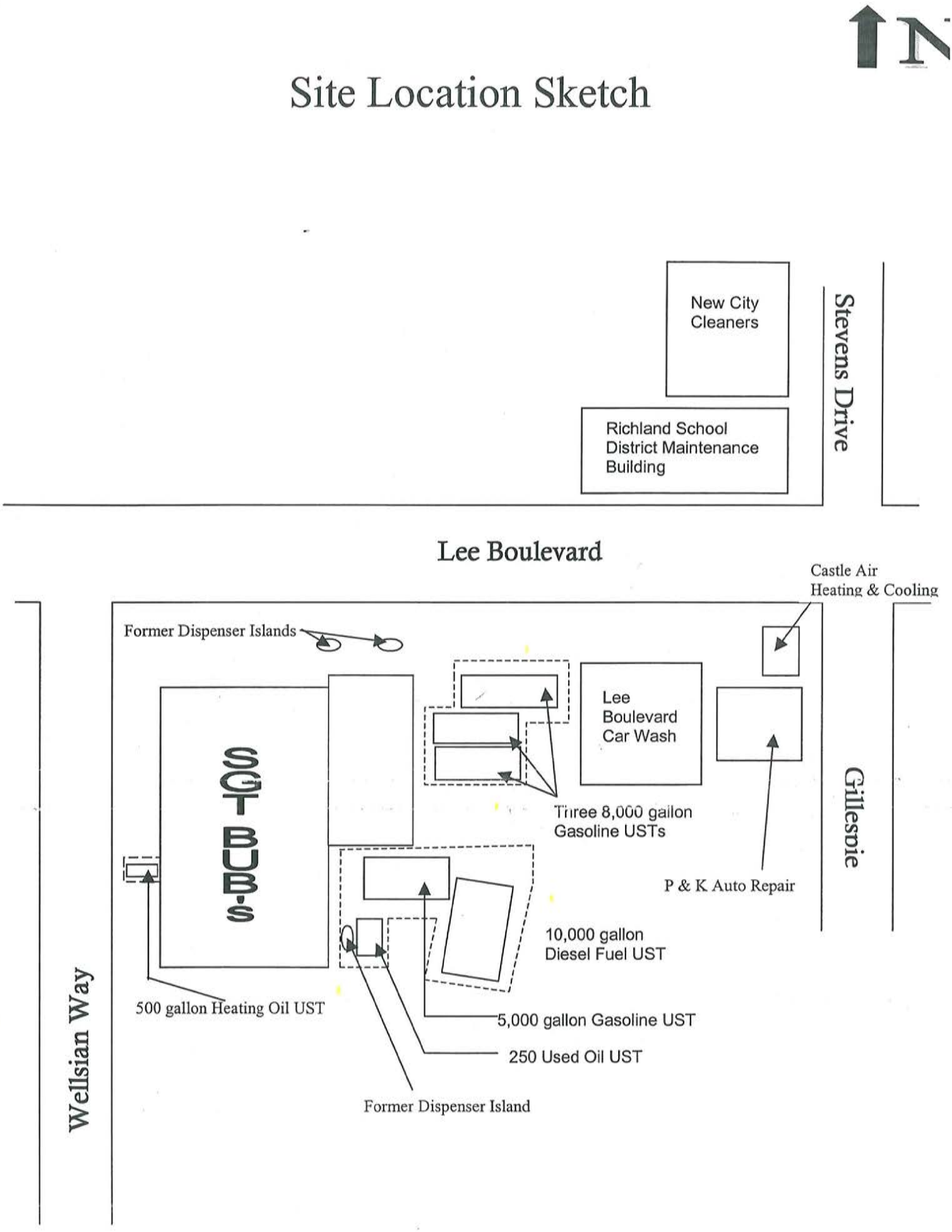
5/12/2000
Date

Signature of Person Registered with Ecology

EXHIBIT B

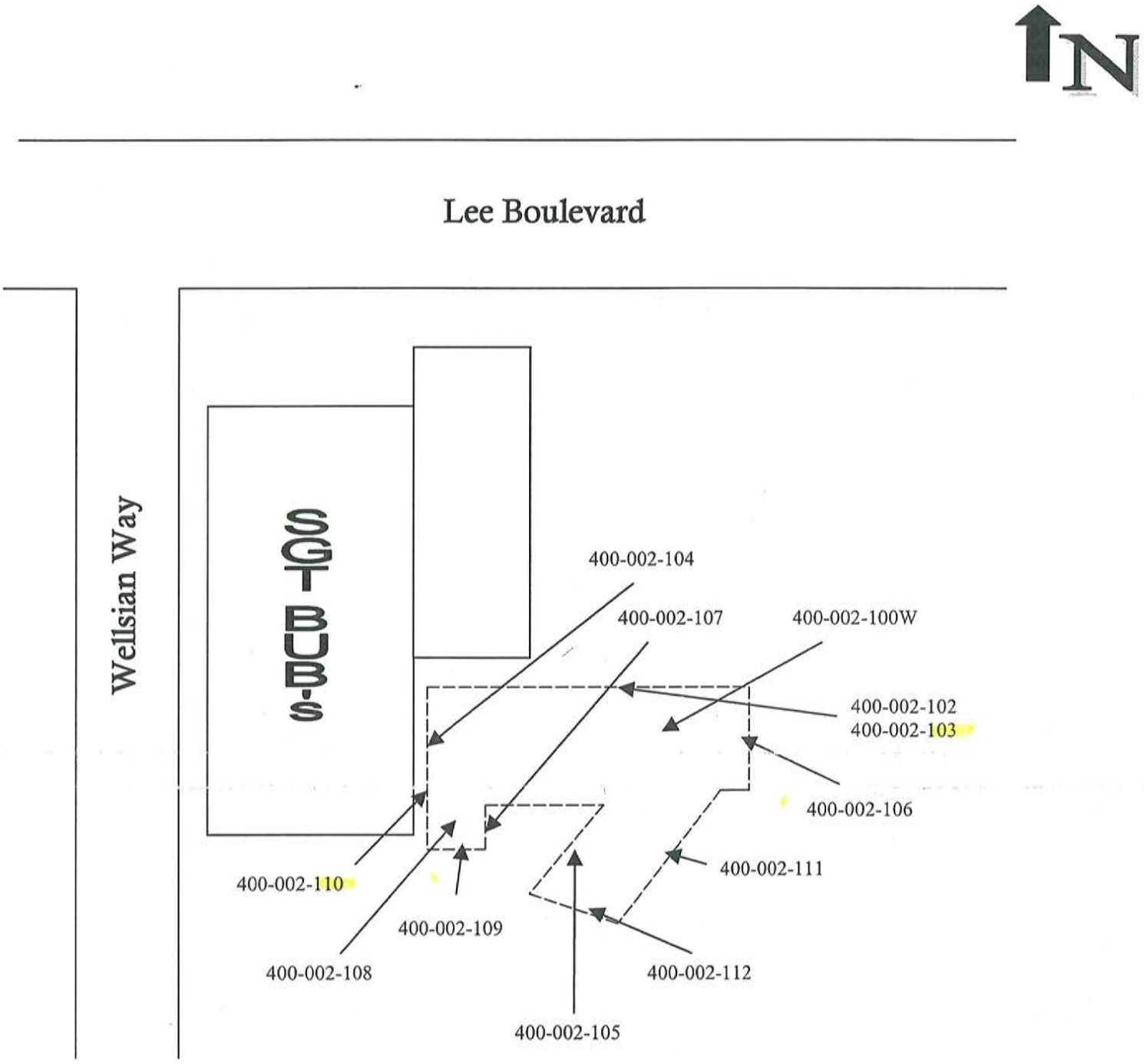
MAPS AND DRAWINGS

Site Location Sketch



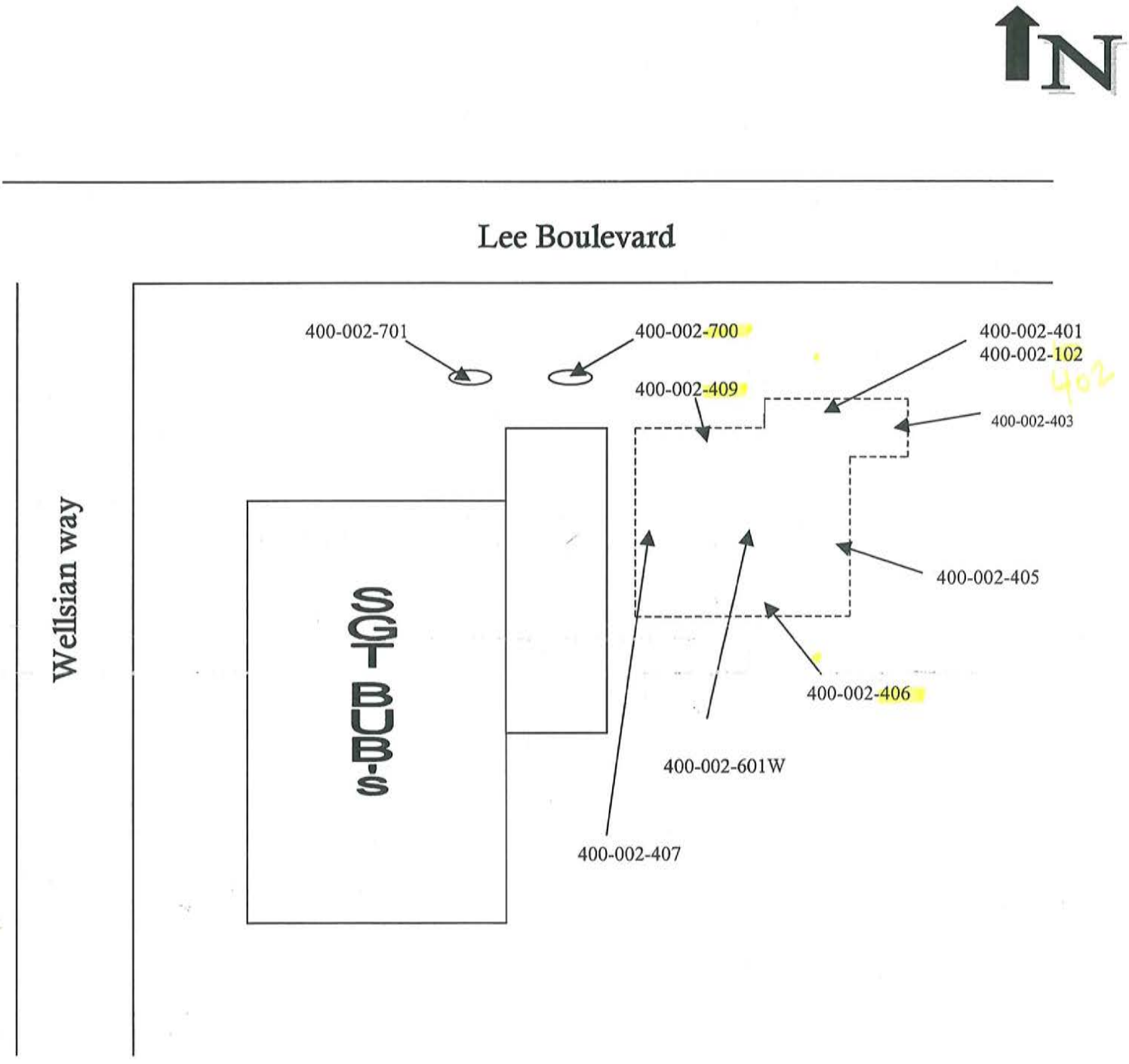
Excavation #1 Sample Locations

(10,000 gallon diesel fuel UST, 5,000 gallon gasoline UST and 500 gallon Used Oil UST)



Excavation #2 Sample Locations

(Three 8,000 gallon gasolie USTs)



Excavation #3 Sample Locations

(250 heating oil UST)

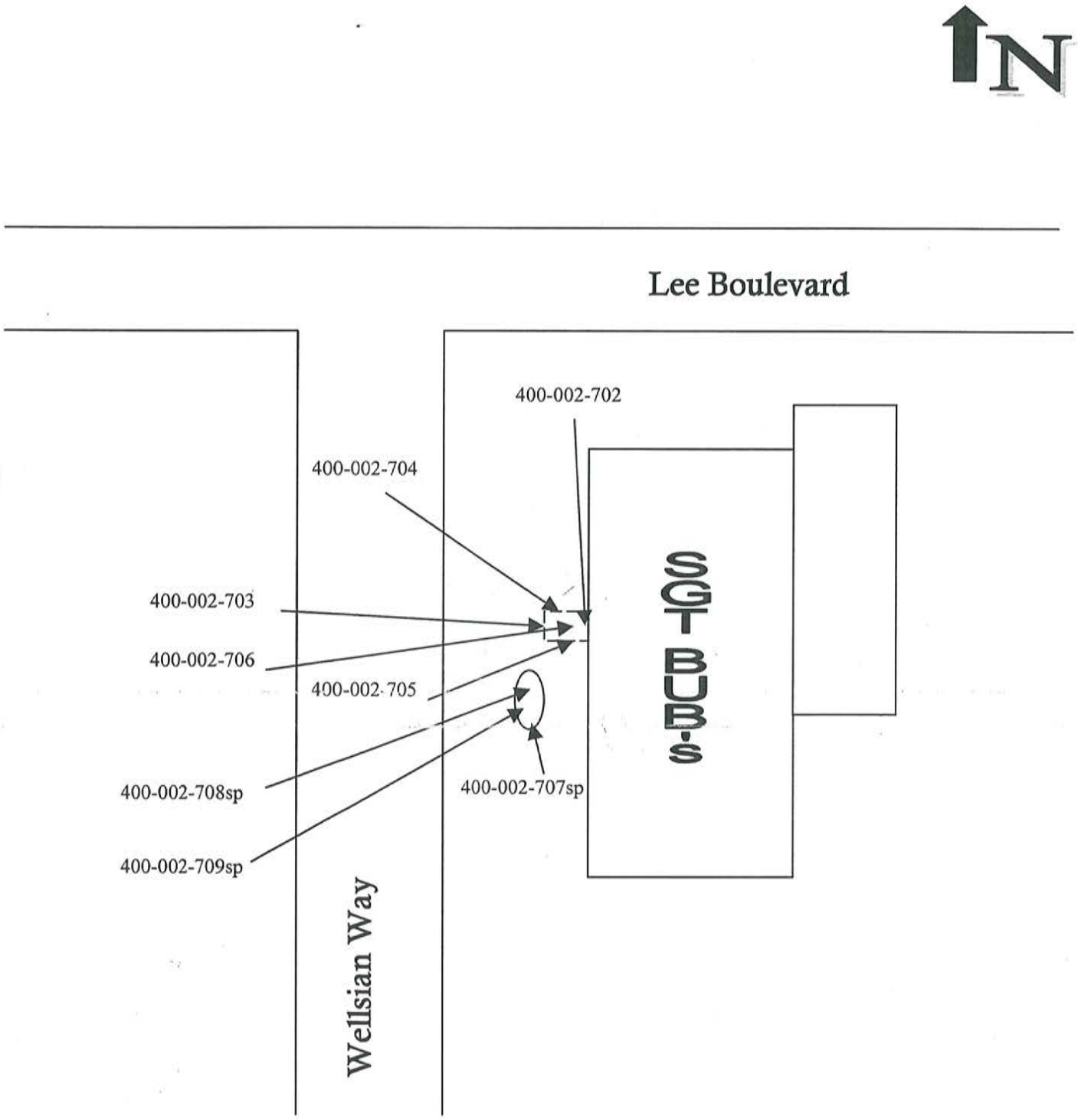


EXHIBIT C

LABORATORY RESULTS AND CHAIN OF CUSTODY

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

March 31, 2000

Rick Funderburk
White Shield, Inc.
P.O. Box 477
Grandview, WA 98930

Re: Analytical Data for Project 400-002-01
Laboratory Reference No. 0003-208

Dear Rick:

Enclosed are the analytical results and associated quality control data for samples submitted on March 29, 2000.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 3-29-00
Date Analyzed: 3-29&30-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**400-002-201/400-002-202**			**400-002-205**		
Lab ID:	03-208-01,02			03-208-05		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**0.22**		0.063	**ND**		0.064
Toluene	**ND**		0.063	**ND**		0.064
Ethyl Benzene	**ND**		0.063	**ND**		0.064
m,p-Xylene	**0.19**		0.063	**ND**		0.064
o-Xylene	**ND**		0.063	**ND**		0.064
TPH-Gas	**85**	**O**	6.3	**ND**		6.4
Surrogate Recovery:						
Fluorobenzene	85%			91%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 3-29-00
Date Analyzed: 3-29&30-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**400-002-102**			**400-002-103**		
Lab ID:	03-208-06			03-208-07		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.063	**ND**		0.32
Toluene	**ND**		0.063	**ND**		0.32
Ethyl Benzene	**ND**		0.063	**1.3**		0.32
m,p-Xylene	**ND**		0.063	**2.7**		0.32
o-Xylene	**ND**		0.063	**2.0**		0.32
TPH-Gas	**ND**		6.3	**ND**		130
Surrogate Recovery:						
Fluorobenzene	88%			79%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 3-29-00
Date Analyzed: 3-29&30-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**400-002-104**			**400-002-105**		
Lab ID:	03-208-08			03-208-09		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.068	**ND**		0.054
Toluene	**ND**		0.068	**ND**		0.054
Ethyl Benzene	**ND**		0.068	**ND**		0.054
m,p-Xylene	**ND**		0.068	**ND**		0.054
o-Xylene	**ND**		0.068	**ND**		0.054
TPH-Gas	**ND**		6.8	**ND**		5.4
Surrogate Recovery:						
Fluorobenzene	88%			103%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 3-29-00
Date Analyzed: 3-29-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**400-002-106**			**400-002-110**		
Lab ID:	03-208-10			03-208-14		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.066	**ND**		0.061
Toluene	**ND**		0.066	**ND**		0.061
Ethyl Benzene	**ND**		0.066	**ND**		0.061
m,p-Xylene	**ND**		0.066	**0.26**		0.061
o-Xylene	**ND**		0.066	**0.13**		0.061
TPH-Gas	**ND**		6.6	**ND**		6.1
Surrogate Recovery:						
Fluorobenzene	89%			94%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 3-29-00
Date Analyzed: 3-30-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**400-002-111**			**400-002-112**		
Lab ID:	03-208-15			03-208-16		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.060	**ND**		0.068
Toluene	**ND**		0.060	**ND**		0.068
Ethyl Benzene	**ND**		0.060	**ND**		0.068
m,p-Xylene	**0.068**		0.060	**ND**		0.068
o-Xylene	**ND**		0.060	**ND**		0.068
TPH-Gas	**ND**		6.0	**ND**		6.8
Surrogate Recovery:						
Fluorobenzene	92%			88%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 3-29-00
Date Analyzed: 3-30&31-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**400-002-401**			**400-002-402**		
Lab ID:	03-208-17			03-208-18		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.068	**24**		0.32
Toluene	**ND**		0.068	**370**	**E**	1.3
Ethyl Benzene	**ND**		0.068	**250**	**E**	1.3
m,p-Xylene	**ND**		0.068	**840**	**E**	1.3
o-Xylene	**ND**		0.068	**370**	**E**	1.3
TPH-Gas	**ND**		6.8	**14000**		130
Surrogate Recovery:						
Fluorobenzene	87%			58%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 3-29-00
Date Analyzed: 3-31&4-3-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**400-002-403**			**400-002-405**		
Lab ID:	03-208-19			03-208-20		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.28	**ND**		0.30
Toluene	**ND**		0.28	**ND**		0.30
Ethyl Benzene	**ND**		0.28	**ND**		0.30
m,p-Xylene	**ND**		0.28	**0.32**		0.30
o-Xylene	**ND**		0.28	**0.44**		0.30
TPH-Gas	**ND**		28	**270**		30
Surrogate Recovery:						
Fluorobenzene	54%			67%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 3-29-00
Date Analyzed: 3-31&4-3-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**400-002-406**			**400-002-407**		
Lab ID:	03-208-21			03-208-22		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**0.81**		0.31	**ND**		0.32
Toluene	**16**		0.31	**ND**		0.32
Ethyl Benzene	**32**		0.31	**1.1**		0.32
m,p-Xylene	**180**	**E**	1.3	**4.3**		0.32
o-Xylene	**78**		1.3	**1.6**		0.32
TPH-Gas	**5500**		130	**280**		32
Surrogate Recovery:						
Fluorobenzene	70%			63%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 3-29-00
Date Analyzed: 3-31&4-3-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID: **400-002-409**
Lab ID: 03-208-23

	Result	Flags	PQL
Benzene	**0.64**		0.31
Toluene	**16**		0.31
Ethyl Benzene	**45**		1.3
m,p-Xylene	**210**		1.3
o-Xylene	**83**		1.3
TPH-Gas	**5200**		130
Surrogate Recovery:			
Fluorobenzene	66%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 3-29-00
Date Analyzed: 3-29-00

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB0329S1

	Result	Flags	PQL
Benzene	**ND**		0.050
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0

Surrogate Recovery:
Fluorobenzene 106%

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 3-29-00
Date Analyzed: 3-29-00

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB0329S2

	Result	Flags	PQL
Benzene	**ND**		0.050
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0

Surrogate Recovery:
Fluorobenzene 99%

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 3-29-00
Date Analyzed: 3-29-00

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	03-205-03 **Original**	03-205-03 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	88%	87%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 3-29-00
Date Analyzed: 3-30-00

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	03-208-05 **Original**	03-208-05 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	91%	91%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 3-29-00
Date Analyzed: 3-30-00

Matrix: Soil
Units: mg/Kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	03-205-03 **MS**	Percent Recovery	03-205-03 **MSD**	Percent Recovery	RPD
Benzene	**0.847**	**85**	**0.863**	**86**	1.9
Toluene	**0.913**	**91**	**0.911**	**91**	0.27
Ethyl Benzene	**0.919**	**92**	**0.927**	**93**	0.92
m,p-Xylene	**0.919**	**92**	**0.929**	**93**	1.1
o-Xylene	**0.909**	**91**	**0.923**	**92**	1.5

Surrogate Recovery:

Fluorobenzene	100%	101%

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 3-31-00
Date Analyzed: 3-31-00

Matrix: Water
Units: ug/L (ppb)

Client ID:	**400-002-100W**			**400-002-601W**		
Lab ID:	03-208-24			03-208-25		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**1700**		1000	**1800**		1000
Toluene	**8900**		1000	**9500**		1000
Ethyl Benzene	**5600**		1000	**3900**		1000
m,p-Xylene	**23000**		1000	**16000**		1000
o-Xylene	**7500**		1000	**6800**		1000
TPH-Gas	**290000**		100000	**170000**		100000
Surrogate Recovery:						
Fluorobenzene	85%			89%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 3-31-00
Date Analyzed: 3-31-00

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0331W1

	Result	Flags	PQL
Benzene	**ND**		1.0
Toluene	**ND**		1.0
Ethyl Benzene	**ND**		1.0
m,p-Xylene	**ND**		1.0
o-Xylene	**ND**		1.0
TPH-Gas	**ND**		100

Surrogate Recovery:
Fluorobenzene 107%

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 3-31-00
Date Analyzed: 3-31-00

Matrix: Water
Units: ug/L (ppb)

Lab ID:	03-216-04 **Original**	03-216-04 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	109%	114%		

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-G/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 3-31-00
Date Analyzed: 3-31-00

Matrix: Water
Units: ug/L (ppb)
Spike Level: 50.0 ppb

Lab ID:	03-216-04 **MS**	Percent Recovery	03-216-04 **MSD**	Percent Recovery	RPD
Benzene	**50.3**	**101**	**49.9**	**100**	0.82
Toluene	**52.5**	**105**	**52.1**	**104**	0.63
Ethyl Benzene	**52.1**	**104**	**51.9**	**104**	0.40
m,p-Xylene	**50.2**	**100**	**49.7**	**99**	0.92
o-Xylene	**51.1**	**102**	**50.8**	**102**	0.63

Surrogate Recovery:

Fluorobenzene	111%	113%

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-Dx

Date Extracted:	3-30-00
Date Analyzed:	3-30-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	400-002-203&204	400-002-102	400-002-103
Lab ID:	03-208-03,04	03-208-06	03-208-07
Diesel Fuel:	770	ND	5400
PQL:	32	31	33
Heavy Oil:	97	ND	ND
PQL:	64	63	65
Surrogate Recovery:			
o-Terphenyl	79%	68%	69%

Flags:

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-Dx

Date Extracted:	3-30-00
Date Analyzed:	3-30-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	400-002-104	400-002-105	400-002-107
Lab ID:	03-208-08	03-208-09	03-208-11
Diesel Fuel:	91	ND	ND
PQL:	34	27	33
Heavy Oil:	ND	ND	ND
PQL:	68	54	65
Surrogate Recovery:			
o-Terphenyl	68%	88%	80%

Flags:

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-Dx

Date Extracted:	3-30-00
Date Analyzed:	3-30-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	400-002-108	400-002-109	400-002-110
Lab ID:	03-208-12	03-208-13	03-208-14
Diesel Fuel:	170	ND	6100
PQL:	31	27	31
Heavy Oil:	ND	100	1400
PQL:	61	54	61
Surrogate Recovery:			
o-Terphenyl	89%	87%	103%

Flags:

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-Dx

Date Extracted:	3-30-00
Date Analyzed:	3-30-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	400-002-111	400-002-112
Lab ID:	03-208-15	03-208-16
Diesel Fuel:	300	ND
PQL:	30	34
Heavy Oil:	110	ND
PQL:	60	68
Surrogate Recovery:		
o-Terphenyl	118%	80%

Flags:

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	3-30-00
Date Analyzed:	3-30-00
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB0330S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	79%

Flags:

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	3-30-00
Date Analyzed:	3-30-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	03-208-09	03-208-09DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	88%	89%

Flags:

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	3-30-00
Date Analyzed:	3-30-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	03-208-13	03-208-13 DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	87%	110%

Flags:

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-Dx

Date Extracted:	3-29-00	
Date Analyzed:	3-29-00	
Matrix:	Water	
Units:	mg/L (ppm)	
Client ID:	400-002-100W	400-002-601W
Lab ID:	03-208-24	03-208-25
Diesel Fuel:	1.0	ND
PQL:	0.25	0.25
Heavy Oil:	ND	ND
PQL:	0.50	0.50
Surrogate Recovery:		
o-Terphenyl	97%	125%
Flags:	M	M

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	3-29-00
Date Analyzed:	3-29-00
Matrix:	Water
Units:	mg/L (ppm)
Lab ID:	MB0329W1
Diesel Fuel:	ND
PQL:	0.25
Heavy Oil:	ND
PQL:	0.50
Surrogate Recovery:	
o-Terphenyl	92%

Flags:

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	3-29-00
Date Analyzed:	3-29-00
Matrix:	Water
Units:	mg/L (ppm)

Lab ID:	03-199-04	03-199-04 DUP
Diesel Fuel:	ND	ND
PQL:	0.25	0.25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	72%	74%

Flags:

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

Date Analyzed: 3-29-00

% MOISTURE

Client ID	Lab ID	% Moisture
400-002-201	03-208-01	22
400-002-202	03-208-02	20
400-002-203	03-208-03	22
400-002-204	03-208-04	23
400-002-205	03-208-05	22
400-002-102	03-208-06	20
400-002-103	03-208-07	23
400-002-104	03-208-08	26
400-002-105	03-208-09	7.0
400-002-106	03-208-10	24
400-002-107	03-208-11	23
400-002-108	03-208-12	18
400-002-109	03-208-13	8.0

Date of Report: March 31, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

Date Analyzed: 3-29-00

% MOISTURE

Client ID	Lab ID	% Moisture
400-002-110	03-208-14	18
400-002-111	03-208-15	17
400-002-112	03-208-16	27
400-002-401	03-208-17	27
400-002-402	03-208-18	22
400-002-403	03-208-19	10
400-002-405	03-208-20	17
400-002-406	03-208-21	20
400-002-407	03-208-22	22
400-002-409	03-208-23	20

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

Y - Sample extract treated with an acid cleanup procedure.

Z -

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

Chain of Custody

Page ____ of 3

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: Whidbey Shield Inc.
Project No.: 400-002-01
Project Name: Sgt. Bubs
Project Manager: K. FUNDERBURK

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ _____ (other)

Project Chemist: DR

Laboratory No.

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
1	400-002-201	3/17/2000	1200	S	1		X	X											X
2	400-002-202	"	"	S	1		X												X
3	400-002-203	"	"	S	1			X	X										X
4	400-002-204	"	"	S	1			X											X
5	400-002-205	"	"	S	1		X												X
6	400-002-102	3/17/2000	1400	S	1		X	X	X										X
7	400-002-103	3/17/2000	1400	S	1		X	X											X
8	400-002-104	3/17/2000	1400	S	1		X	X											X
9	400-002-105	3/17/2000	1400	S	1		X	X											X
10	400-002-106	3/17/2000	1400	S	1		X												X
11	400-002-107	3/20/2000	1200	S	1			X	X										X
12	400-002-108	3/20/2000	1200	S	1			X											X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
[signature]	3/28/2000	[signature]	3/29/00
FIRM: WSI	TIME: 0800	FIRM: OnSite Env	TIME: 11:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

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OnSite Environmental Inc.

14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: White Sheets Inc.

Project No.: 400-002-01

Project Name: SCT Bubs

Project Manager: R. FUNDERBURK

Turn Around Requested (Check One)

- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ _____ (other)

Project Chemist: DR

Laboratory No.

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
13	400-002-109	3/20/2000	1400	S	1			X											X
14	400-002-110	3/20/2000	1400	S	1		X	X											X
15	400-002-111	3/20/2000	1400	S	1		X	X											X
16	400-002-112	3/20/2000	1400	S	1		X	X											X
17	400-002-401	3/23/2000	1000	S	1		X												X
18	400-002-402	3/23/2000	1000	S	1		X												X
19	400-002-403	3/23/2000	1000	S	1		X												X
20	400-002-405	3/23/2000	1000	S	1		X												X
21	400-002-406	3/23/2000	1000	S	1		X												X
22	400-002-407	3/23/2000	100	S	1		X												X
23	400-002-409	3/23/2000	1000	S	1		X												X
2							X												

RELINQUISHED BY	DATE	RECEIVED BY	DATE
	3/28/2000		3/29/00
FIRM WST	TIME 0800	FIRM OnSite ENV	TIME 11:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

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OnSite Environmental Inc.

14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: White Shield Inc.

Project No.: 400-002-01

Project Name: SGT Bubs

Project Manager: R. Funderburk

Turn Around Requested (Check One)

- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ ______ (other)

Project Chemist: DR

Laboratory No.

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH								% Moisture
24	400-002-100W	3/17/2000	1200	W	3		X	X																		
25	400-002-601W	3/23/2000	1000	W	3		X	X																		

RELINQUISHED BY	DATE 3/28/2000	RECEIVED BY	DATE 3/29/00
FIRM IWSI	TIME 0800	FIRM OnSite Env	TIME 11:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

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OnSite
Environmental Inc.
Analytical Testing and Mobile Laboratory Services

April 7, 2000

Rick Funderburk
White Shield, Inc.
P.O. Box 477
Grandview, WA 98930

Re: Analytical Data for Project 400-002-01
Laboratory Reference No. 0003-208

Dear Rick:

Enclosed are the analytical results and associated quality control data for samples submitted on March 29, 2000.

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

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

Sincerely,

for David Baumeister
Project Manager

Enclosures

Date of Report: April 7, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

Total Lead
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted: 4-6-00
Date Analyzed: 4-7-00

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0406S4

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

Date of Report: April 7, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

Total Lead
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 4-6-00
Date Analyzed: 4-7-00

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 04-016-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**10.0**	**8.45**	17	5.0	

Date of Report: April 7, 2000
Samples Submitted: March 29, 2000
Lab Traveler: 03-208
Project: 400-002-01

Total Lead
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 4-6-00
Date Analyzed: 4-7-00

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 04-016-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**229**	88	**231**	89	1.0	

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

Y - Sample extract treated with an acid cleanup procedure.

Z -

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

Chain of Custody

Page 1 of 3

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: White Sliger Inc
Project No.: 400-002-01
Project Name: Sat. Bubs
Project Manager: K. FUNDERBURK

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ _____ (other)

Project Chemist: DR

Laboratory No. 03-208

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
1	400-002-201	3/17/2000	1200	S	1		X												X
2	400-002-202			S	1		X												X
3	400-002-203			S	1			X											X
4	400-002-204			S	1			X											X
5	400-002-205			S	1		X												X
6	400-002-102	3/17/2000	1400	S	1		X	X											X
7	400-002-103	3/17/2000	1400	S	1		X	X											X
8	400-002-104	3/17/2000	1400	S	1		X	X											X
9	400-002-105	3/17/2000	1400	S	1		X	X											X
10	400-002-106	3/17/2000	1400	S	1		X												X
11	400-002-107	3/20/2000	1200	S	1			X											X
12	400-002-108	3/20/2000	1200	S	1			X											X

RELINQUISHED BY	DATE 3/20/2000	RECEIVED BY	DATE 3/29/00
FIRM West	TIME 0800	FIRM Con-Test Env	TIME 11:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

Chain of Custody

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: White Sluiced Inc.
Project No.: 400-002-01
Project Name: SGT Bubs
Project Manager: R. FUNDERBURK

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ _____ (other)

Project Chemist: DB

Laboratory No. 03-208

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	No. Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	Total Pb	% Moisture
13	400-002-109	3/20/2000	1400	S	1			X												X
14	400-002-110	3/20/2000	1400	S	1		X	X												X
15	400-002-111	3/20/2000	1400	S	1		X	X												X
16	400-002-112	3/20/2000	1400	S	1		X	X												X
17	400-002-401	3/23/2000	1000	S	1		X													X
18	400-002-402	3/23/2000	1000	S	1		X												X	X
19	400-002-403	3/23/2000	1000	S	1		X													X
20	400-002-405	3/23/2000	1000	S	1		X													X
21	400-002-406	3/23/2000	1000	S	1		X													X
22	400-002-407	3/23/2000	100	S	1		X													X
23	400-002-409	3/23/2000	1000	S	1		X													X
2							X													

RELINQUISHED BY	DATE 3/28/2000	RECEIVED BY	DATE 3/29/00
FIRM WST	TIME 0800	FIRM OnSite ENV	TIME 1145
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:
(X) Added 4/5/00 EG

Chain of Custody

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: White Shield Inc.
Project No.: 400-002-01
Project Name: SGT Bibs
Project Manager: R. Funderburk

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ _____ (other)

Project Chemist: DR

Laboratory No. 03-208

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	Total Pb						% Moisture
24	400-002-100W	3/17/2000	1200	W	3		X	X											X						
25	400-002-601W	3/23/2000	1000	W	3		X	X											X						

Requested Analysis

RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM WST	TIME 0800	FIRM	TIME 11:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:
(X) Added Hg 5/00 RG

Chain of Custody

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: White Shield Inc.
Project No.: 400-002-01
Project Name: SGT Bubs
Project Manager: R. Funderburk

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ ______ (other)

Project Chemist: DR

Laboratory No. 03-208

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	Total Pb	% Moisture
24	400-002-100W	3/17/2000	1200	W	3		X	X											(X)	
25	400-002-601W	3/23/2000	1000	W	3		X	X											(X)	

RELINQUISHED BY: [signature]	DATE: 3/28/2000	RECEIVED BY: [signature]	DATE: 3/29/00
FIRM: WSI	TIME: 0800	FIRM: OnSite Env	TIME: 11:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:
(X) Added 4/5/00 BC
* Not able to analyze Pb in water. Sample is preserved with HCl. 4/7/00 BC

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OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

April 11, 2000

Rick Funderburk
White Shield, Inc.
P.O. Box 477
Grandview, WA 98930

Re: Analytical Data for Project 400-002-01
Laboratory Reference No. 0004-024

Dear Rick:

Enclosed are the analytical results and associated quality control data for samples submitted on April 6, 2000.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: April 11, 2000
Samples Submitted: April 6, 2000
Lab Traveler: 04-024
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 4-6-00
Date Analyzed: 4-6&7-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**400-002-700**			**400-002-701**		
Lab ID:	04-024-01			04-024-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**0.36**		0.32	**ND**		0.29
Toluene	**1.2**		0.32	**ND**		0.29
Ethyl Benzene	**14**		0.32	**0.51**		0.29
m,p-Xylene	**35**		0.32	**5.9**		0.29
o-Xylene	**32**		0.32	**3.8**		0.29
TPH-Gas	**2900**		32	**1900**		29
Surrogate Recovery:						
Fluorobenzene	71%			73%		

Date of Report: April 11, 2000
Samples Submitted: April 6, 2000
Lab Traveler: 04-024
Project: 400-002-01

NWTPH-G/BTEX

Date Extracted: 4-6-00
Date Analyzed: 4-6&7-00

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**400-002-704/400-002-705**			**400-002-501/400-002-503**		
Lab ID:	04-024-05,06			04-024-11,12		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.058	**ND**		0.061
Toluene	**ND**		0.058	**0.25**		0.061
Ethyl Benzene	**ND**		0.058	**0.23**		0.061
m,p-Xylene	**ND**		0.058	**1.0**		0.061
o-Xylene	**ND**		0.058	**3.6**		0.061
TPH-Gas	**ND**		5.8	**370**		6.1
Surrogate Recovery:						
Fluorobenzene	90%			87%		

Date of Report: April 11, 2000
Samples Submitted: April 6, 2000
Lab Traveler: 04-024
Project: 400-002-01

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 4-6-00
Date Analyzed: 4-6-00

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB0406S1

	Result	Flags	PQL
Benzene	**ND**		0.050
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0
Surrogate Recovery:			
Fluorobenzene	97%		

Date of Report: April 11, 2000
Samples Submitted: April 6, 2000
Lab Traveler: 04-024
Project: 400-002-01

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 4-6-00
Date Analyzed: 4-7-00

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	04-024-02 **Original**	04-024-02 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**0.439**	**0.345**	24	
m,p-Xylene	**5.09**	**4.27**	18	
o-Xylene	**3.29**	**2.61**	23	
TPH-Gas	**1650**	**1330**	21	
Surrogate Recovery:				
Fluorobenzene	73%	77%		

Date of Report: April 11, 2000
Samples Submitted: April 6, 2000
Lab Traveler: 04-024
Project: 400-002-01

NWTPH-G/BTEX
SB/SBD QUALITY CONTROL

Date Extracted: 4-6-00
Date Analyzed: 4-7-00

Matrix: Soil
Units: mg/Kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0406S1 **Spike Blank**	Percent Recovery	SB0406S1 DUP **Duplicate**	Percent Recovery	RPD
Benzene	**0.880**	**88**	**0.778**	**78**	12
Toluene	**0.867**	**87**	**0.929**	**93**	6.9
Ethyl Benzene	**0.916**	**92**	**0.944**	**94**	3.0
m,p-Xylene	**0.888**	**89**	**0.926**	**93**	4.2
o-Xylene	**0.899**	**90**	**0.777**	**78**	15

Surrogate Recovery:

Fluorobenzene	109%		104%

Date of Report: April 11, 2000
Samples Submitted: April 6, 2000
Lab Traveler: 04-024
Project: 400-002-01

NWTPH-Dx

Date Extracted:	4-7-00
Date Analyzed:	4-7&8-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	400-002-700	400-002-701	400-002-702,703
Lab ID:	04-024-01	04-024-02	04-024-03,04
Diesel Fuel:	ND	ND	44
PQL:	33	29	28
Heavy Oil:	ND	ND	140
PQL:	65	58	56
Surrogate Recovery:			
o-Terphenyl	84%	80%	78%

Flags:

Date of Report: April 11, 2000
Samples Submitted: April 6, 2000
Lab Traveler: 04-024
Project: 400-002-01

NWTPH-Dx

Date Extracted:	4-7-00
Date Analyzed:	4-7&8-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	400-002-707sp	400-002-708sp,709sp	400-002-706
Lab ID:	04-024-07	04-024-08,09	04-024-10
Diesel Fuel:	ND	30	ND
PQL:	28	29	29
Heavy Oil:	ND	99	ND
PQL:	57	58	59
Surrogate Recovery:			
o-Terphenyl	77%	102%	73%

Flags:

Date of Report: April 11, 2000
Samples Submitted: April 6, 2000
Lab Traveler: 04-024
Project: 400-002-01

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	4-7-00
Date Analyzed:	4-7-00
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB0407S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	97%

Flags:

Date of Report: April 11, 2000
Samples Submitted: April 6, 2000
Lab Traveler: 04-024
Project: 400-002-01

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	4-7-00
Date Analyzed:	4-7-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	04-028-01	04-028-01 DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	81%	88%

Flags:

Date of Report: April 11, 2000
Samples Submitted: April 6, 2000
Lab Traveler: 04-024
Project: 400-002-01

Date Analyzed: 4-6-00

% MOISTURE

Client ID	Lab ID	% Moisture
400-002-700	04-024-01	23
400-002-701	04-024-02	14
400-002-702	04-024-03	11
400-002-703	04-024-04	12
400-002-704	04-024-05	13
400-002-705	04-024-06	16
400-002-707sp	04-024-07	12
400-002-708sp	04-024-08	12
400-002-709sp	04-024-09	16
400-002-706	04-024-10	15
400-002-501	04-024-11	18
400-002-503	04-024-12	17

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

Y - Sample extract treated with an acid cleanup procedure.

Z -

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

Chain of Custody

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: White Shield Inc.
Project No.: 400-002-01
Project Name: Sgt. Bob's
Project Manager: K. Funderburk

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ 4/13 (other)

Project Chemist: DR

Laboratory No.

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
1	400-002-700	3/27/2000	1110	S	1		X	X											X
2	400-002-701	3/27/2000	1200	S	1		X	X											X
3	400-002-702	3/27/2000	1400	S	1			X											X
4	400-002-703	3/27/2000		S	1			X											X
5	400-002-704	3/27/2000		S	1		X												X
6	400-002-705	3/27/2000		S	1		X												X
7	400-002-707sp	3/27/2000		S	1			X											X
8	400-002-708sp	3/27/2000		S	1			X											X
9	400-002-709sp	3/27/2000		S	1			X											X
10	400-002-706	3/27/2000		S	1			X											X
11	400-002-501	3/27/2000	1000	S	1		X												X
12	400-002-503	3/27/2000	1000	S	1		X												X

RELINQUISHED BY	DATE 4/5/2000	RECEIVED BY	DATE 4/6/00
FIRM WSI	TIME 0900	FIRM OnSite Env.	TIME 11:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

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

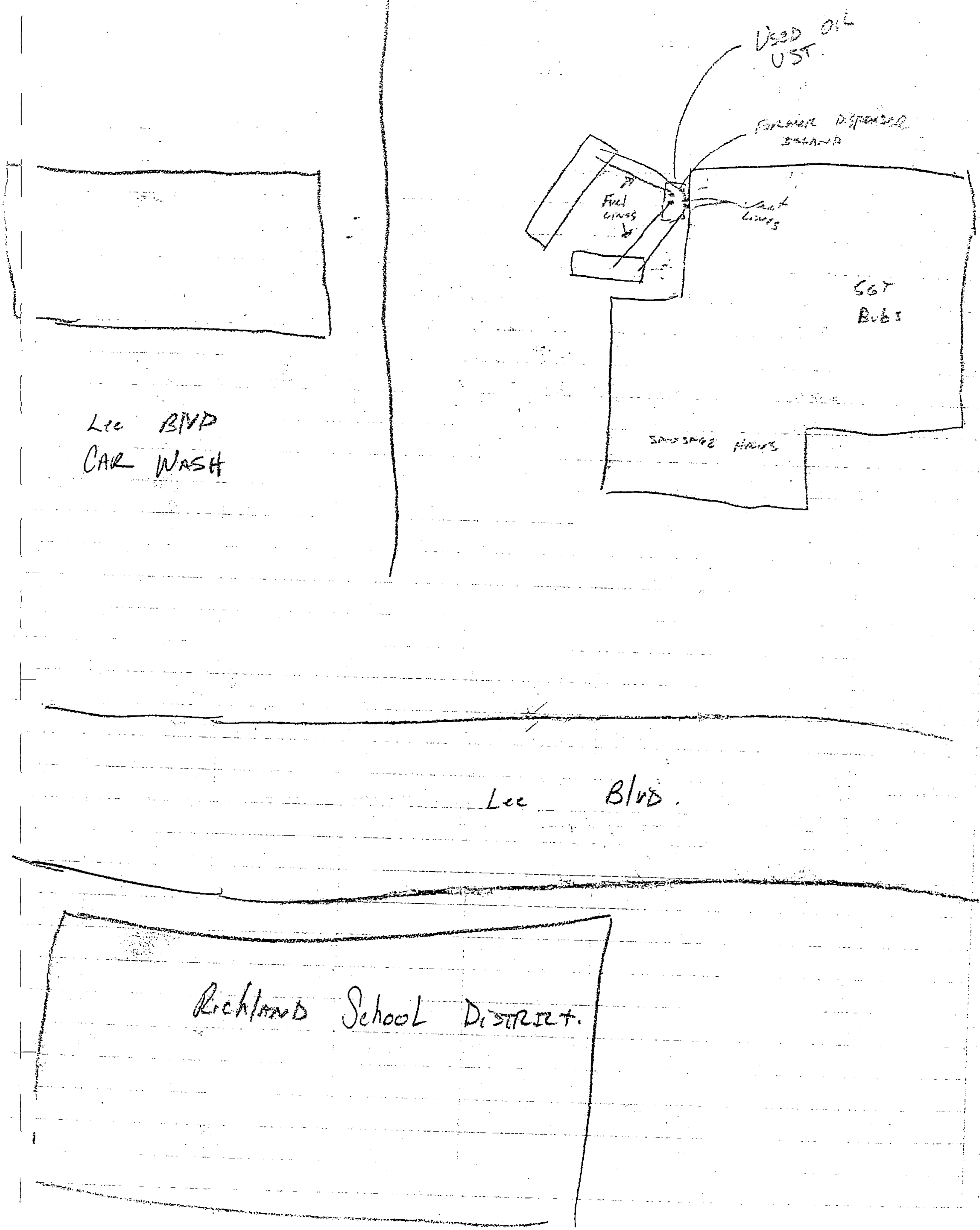
EXHIBIT D

FIELD DATA

4100-002-01 375-4125 8/16/2000

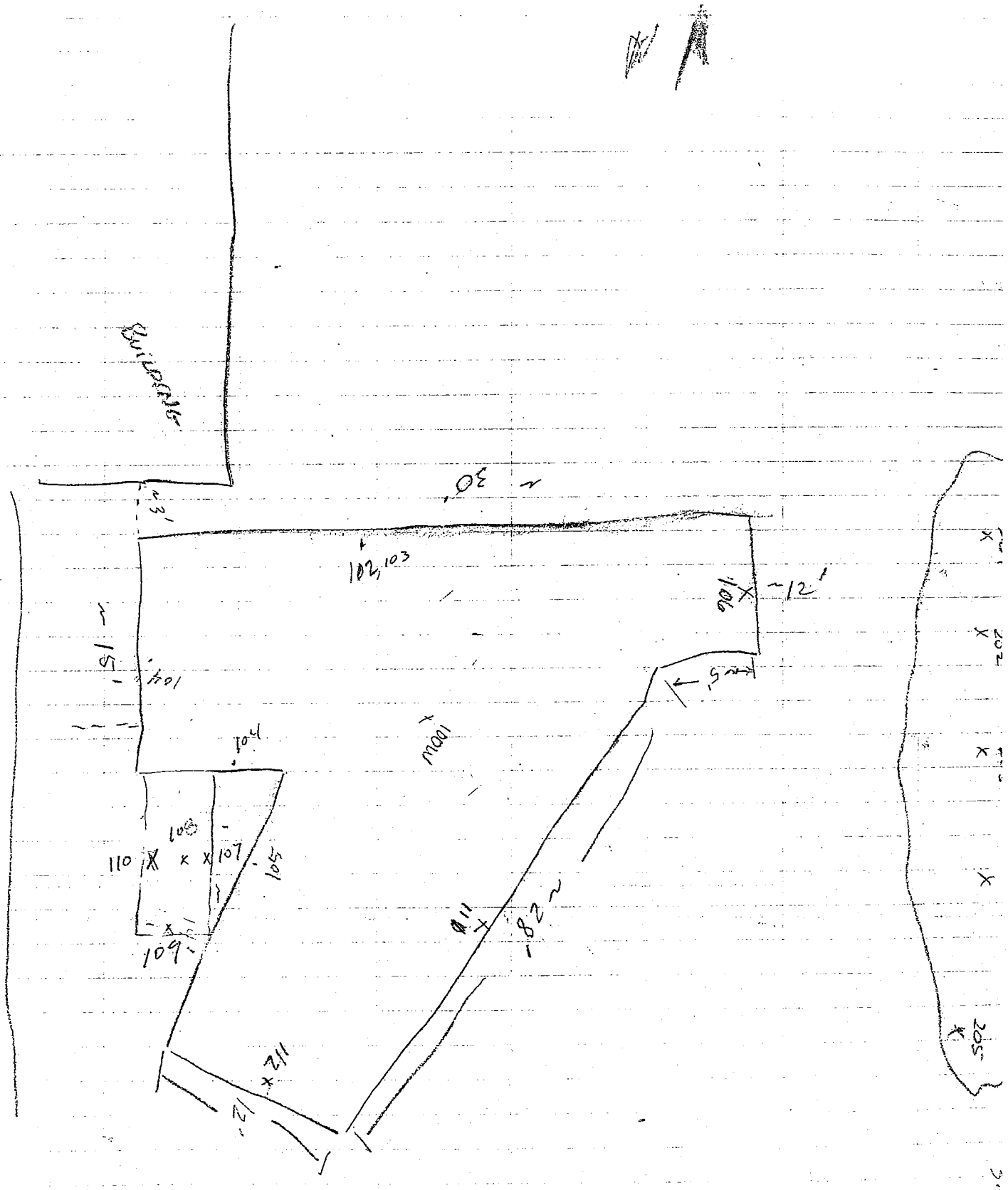
Jim Christensen Rick Fundenberg
Terry Mitchell

0800 Arrived on site. Obtained Permit from city of Richland to Pull USTs.
Began excavating site.
USTs were last used ~ 20 years ago, according to Col.N Bleiler owner.
Exposed top of UST's. Blew out lines. No product in lines.
Grey soil encountered along the bottom of the UST (5K unleaded) further excavation toward the building revealed contamination reaching closer to the surface. Contamination appears to originate from the area where the former dispenser islands were located. Began separating clean soil from PCS.
Placed PCS on plastic & covered. Removed 5K UST from excavation. Jim Christensen (Petroleum Pump) provided Decommissioning services. UST in good condition.
Groundwater encountered at 13'. Photos taken.
Soil at bottom of excavation grey in color strong petroleum odor. Photo's taken.
Loaded UST on trailer. PPC will cut up tank & dispose of.
Fenced placed around excavation. Photos taken.
Loaded equipment departed site.


USED OIL UST
FORMER DISPENSER
Fuel Lines
Vent Lines
Lee BLVD
CAR WASH
Lee Blvd.
Richland School District.

400-002-01 3/17/2000

0715 Arrives onsite. Began removing UST.
Tank removed from excavation. Upon observation some
slight corrosion with pin holes on the end of
the bottom of the UST.
Began sampling excavation.
While removing line & sampling beneath former dispenser
Line another UST was uncovered. began excavating
around the UST. Located fill line. Measured
tank. Water observed w/ a sheen. Began pump
liquid into 55 gallon drums. (2) 55 gallon
Drums top off. The liquid appeared to be
used oil. Called on Refining to pump product
out of the UST & 55 gal. Drums.
Unable to make it today. Will schedule for Monday
morning

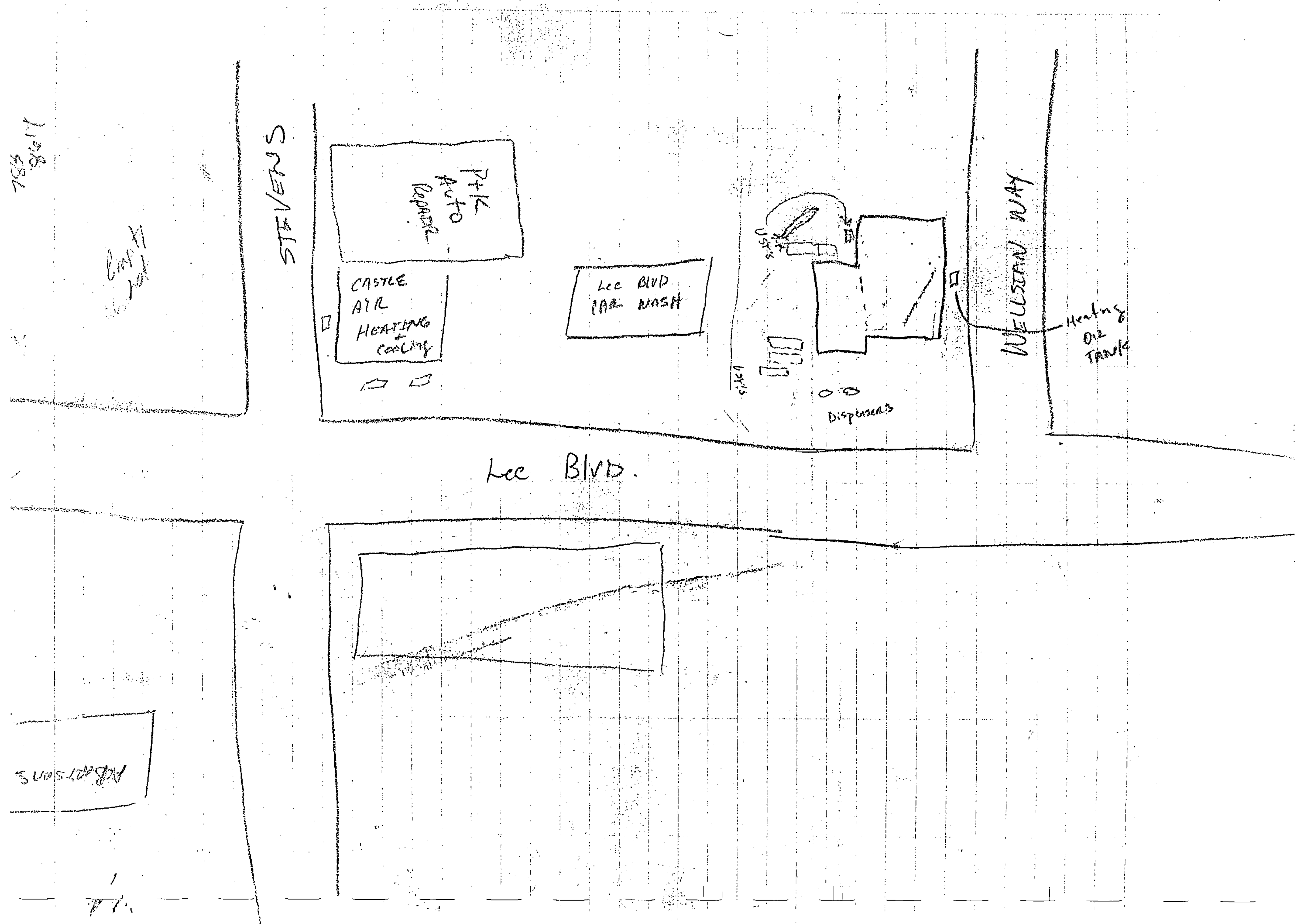


3/17/2000
3/29/2000

10-200-004

400-002-01 3/17/2000

Sample #	Location / Depth	OVA / TLC
400-002-100W	Bottom of UST Excavation 13' (slight sheen)	
-102	N SW / 4' 5K UST	
-103	N SW / 5' 5K UST	
-104	W SW / 6' 5K UST	
-105	SW SW / 6' 10K UST	
-201	Stockpile 1	
-202		
-203		
-204		
-205		
106	E SW / 6' 5K UST	
107	E SW / 6' USED OIL UST	
108	Bottom USED OIL UST 8'	
109	S SW / 6' USED OIL UST	
110	W SW / 5' USED OIL UST	
111	E SW / 9' 10K UST	
112	S SW / 6' 10K UST	


STEVENS
P+K Auto Repair
CASTLE AIR HEATING + COOLING
Lee BLVD CAR WASH
USTs
Dispensers
WELLSIAN WAY
Heating Oil Tank
Lee BLVD.
Albertsons

701 Bozarth
P.O. Box 1407
oodland, WA 98674
EPA # WAD 980986012

OIL RE-REFINING CO., INC.

24 Hour Emergency
(503) 286-8352
1-800-367-8894

MAR 21 2000

No. 75758

Cust. I.D.
Call Back

Generator Petroleum Pump Co. Jim Date 3-20-00
Name Contact
Site Loc. Welsh Way Richland
23 W. Columbia Dr. Kennewick WA 99336 509 586-4151
Address City State Zip Phone

Billing Address: Same

Consigned To: FUEL PROCESSORS INC. ORD-980975692
Destination: 4150 N. SUTTLE RD. PTLD. OR. 97217
Via Carrier: OIL RE-REFINING CO., INC.
Driver: Schnuck Truck No.: 1375 Miles Run:

Profile Date: 3-20-00
CK# P.O.#
Load Ticket #

Gallons	Description	Weight	Rate Per Gallon	Rate Per Hour	Charge Paid
387	used oil & water FLASH POINT GREATER THAN 200°F		50¢		193.50
	Passed sniffer EXEMPT FROM REGULATIONS				
	7% water TRANSPORT FOR RECYCLING ONLY				
	5/25 PPM				
Total					193.50

Customer warrants that the waste petroleum products being transferred by the above collector do not contain any contaminants including, without limitation, [illegible]

L.V.R.S.

LOWER VALLEY REMEDIATION SERVICE

April 10, 2000

Ted Silvestri, R.S.
Yakima Health District
104 North First Street
Yakima, WA 98901

Re: PCS, Columbia Oil Company, Richland, WA
Lot 42

Dear Ted,

We have received a total of 425.94 tons of Petroleum Contaminated Soil from the referenced site. The soil contains old gasoline and diesel as evidenced by the laboratory test reports enclosed.

We request authorization to proceed with treatment.

Thank you.

Sincerely,
Lower Valley Remediation Service

Orren Fricke, P.E.

5471 GLADE RD., MABTON, WA 98935 Telephone (509)894-4800 Fax (509)894-4505

EXHIBIT E

MTCA METHOD A CLEANUP REQUIREMENTS

Table 1
Method A Cleanup Levels – Ground Water[a]

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	5.0 ug/liter[b]
Benzene	71-43-2	5.0 ug/liter[c]
Cadmium	7440-43-9	5.0 ug/liter[d]
Chromium (Total)	7440-47-3	50.0 ug/liter[e]
DDT	50-29-3	0.1 ug/liter[f]
1,2 Dichloroethane	107-06-2	5.0 ug/liter[g]
Ethylbenzene	100-41-4	30.0 ug/liter[h]
Ethylene dibromide	106-93-4	0.01 ug/liter[i]
Gross Alpha Particle Activity		15.0 pCi/liter[j]
Gross Beta Particle Activity		4.0 mrem/yr[k]
Lead	7439-92-1	5.0 ug/liter[l]
Lindane	58-89-9	0.2 ug/liter[m]
Methylene chloride	75-09-2	5.0 ug/liter[n]
Mercury	7439-97-6	2.0 ug/liter[o]
PAHs (carcinogenic)		0.1 ug/liter[p]
PCB mixtures		0.1 ug/liter[q]
Radium 226 and 228		5.0 pCi/liter[r]
Radium 226		3.0 pCi/liter[s]
Tetrachloroethylene	127-18-4	5.0 ug/liter[t]
Toluene	108-88-3	40.0 ug/liter[u]
Total Petroleum Hydrocarbons		1000.0 ug/liter[v]
1,1,1 Trichloroethane	71-55-6	200.0 ug/liter[w]
Trichloroethylene	79-01-5	5.0 ug/liter[x]
Vinyl chloride	75-01-4	0.2 ug/liter[y]
Xylenes	1330-20-7	20.0 ug/liter[z]

[a] Caution on misusing method A tables. Method A tables have been developed for specific purposes. They are intended to provide conservative cleanup levels for sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. The tables may not be appropriate for defining cleanup levels at other sites. For these reasons, the values in these tables should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceedances of the values in these tables do not necessarily trigger requirements for cleanup action under this chapter.

[b] Arsenic. Cleanup level based on background concentrations for state of Washington.

[c] Benzene. Cleanup level based on applicable state and federal law.

[d] Cadmium. Cleanup level based on applicable state and federal law and concentration derived using procedures in subsection (3)(a)(ii)(A) of this section and a hazard quotient of 0.2.

[e] Chromium (Total). Cleanup level based on applicable state and federal law.

[f] DDT. Cleanup levels based on concentration derived using procedures in subsection (3)(a)(ii)(B) of this section.

[g] 1,2 Dichloroethane. Cleanup level based on applicable state and federal law.

Table 2
Method A Cleanup Levels – Soil[a]

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440–38–2	20.0 mg/kg[b]
Benzene	71–43–2	0.5 mg/kg[c]
Cadmium	7440–43–9	2.0 mg/kg[d]
Chromium	7440–47–3	100.0 mg/kg[e]
DDT	50–29–3	1.0 mg/kg[f]
Ethylbenzene	100–41–4	20.0 mg/kg[g]
Ethylene dibromide	106–93–4	0.001 mg/kg[h]
Lead	7439–92–1	250.0 mg/kg[i]
Lindane	58–89–9	1.0 mg/kg[j]
Methylene chloride	75–09–2	0.5 mg/kg[k]
Mercury (inorganic)	7439–97–6	1.0 mg/kg[l]
PAHs (carcinogenic)		1.0 mg/kg[m]
PCB Mixtures		1.0 mg/kg[n]
Tetrachloroethylene	127–18–4	0.5 mg/kg[o]
Toluene	108–88–3	40.0 mg/kg[p]
TPH (gasoline)		100.0 mg/kg[q]
TPH (diesel)		200.0 mg/kg[r]
TPH (other)		200.0 mg/kg[s]
1,1,1 Trichloroethane	71–55–6	20.0 mg/kg[t]
Trichloroethylene	79–01–5	0.5 mg/kg[u]
Xylenes	1330–20–7	20.0 mg/kg[v]

[a] Caution on misusing method A tables. Method A tables have been developed for speci poses. They are intended to provide conservative cleanup levels for sites undergoing cleanup actions or those sites with relatively few hazardous substances. The tables may appropriate for defining cleanup levels at other sites. For these reasons, the values i tables should not automatically be used to define cleanup levels that must be met for fi real estate, insurance coverage or placement, or similar transactions or purposes. Exce of the values in these tables do not necessarily trigger requirements for cleanup actio this chapter.

[b] Arsenic. Cleanup level based on background concentrations in the state of Washington.

[c] Benzene. Cleanup level based on protection of ground water.

[d] Cadmium. Cleanup level based on plant protection.

[e] Chromium. Cleanup level based on health risks associated with inhalation of resuspende

[f] DDT. Cleanup level based on concentrations derived using the procedures in su (3)(a)(iii)(B) of this section.

[g] Ethylbenzene. Cleanup level based on protection of ground water.

[h] Ethylene dibromide. Cleanup level based on protection of ground water.

[i] Lead. Cleanup level based on preventing unacceptable blood lead levels.

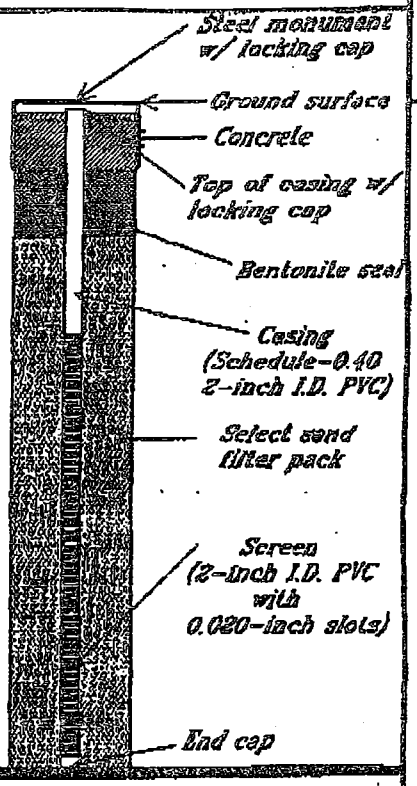
EXHIBIT F

WELL LOGS

Elevation reference:
Ground surface elevation: 94.60 Casing elevation: 93.98

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING (ppm)	GROUND WATER
0	0-2" Asphalt Gravel FILL					
5	Medium stiff, moist, brown fine sandy SILT (LOESS)		S-1	5	0.0	
						ATD
10	Medium dense, saturated, brown sandy GRAVEL with slight hydrocarbon-like odor (glaciofluvial) --stained soil, aged gas/diesel odor		S-2	32	3.9	
15	Very dense, saturated, brown/black medium to coarse sandy GRAVEL with hydrocarbon-like odor		S-3	74	368	
	Boring terminated at approximately 15 feet					
20						
25						
30						

AS-BUILT DESIGN



TESTING

OCT 13 1994

RUEN DRILLING, INC.
BOX 267
CLARK FORK, ID 83811
(208) 266-1151

START CARD # 21140 WELL TAG # AAV 810
SW¼ SW¼ SEC 14 TON 58E

Gerald Schroeder
GERALD SCHROEDER # 1723

LEGEND

I 2-inch O.D. split-spoon sample (pushed)

ATD Observed groundwater level (ATD = at time of drilling)

AGRA
Earth & Environmental
W. 539 Sharp, Suite D
Spokane, Washington 99201

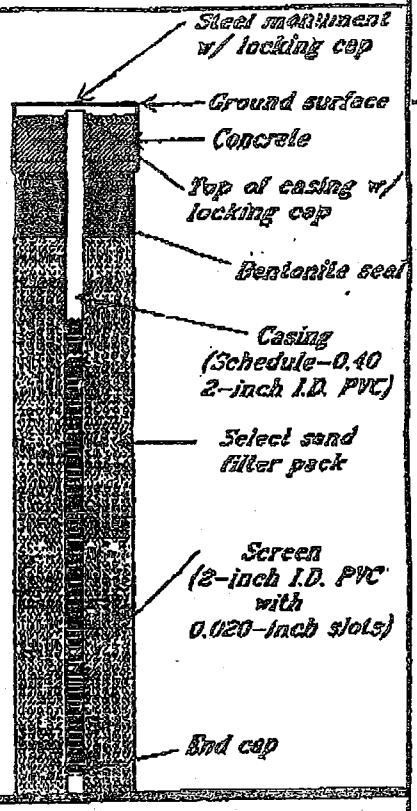
Drilling started: 10 September 1994 Drilling completed: 10 September 1994 Logged by: ENIS

PROJECT *Richland Chevron* W.O. *12-1203-...J* WELL NO. *MW-2*

Elevation reference:
Ground surface elevation: *93.86* Casing elevation: *93.21*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING (ppm)	GROUND WATER
0	0-2" Asphalt Gravel FILL					
5	Soft, moist to wet, brown fine sandy SILT (LOESS)		S-1	2	1.3	ATD
10	Dense, saturated, brownish black sandy GRAVEL (glaciofluvial)		S-2	34	0.0	
	-- aged gas/diesel odor					
15	Medium dense, saturated, brownish black sandy GRAVEL		S-3	21	365	
	Boring terminated at approximately 15.5 feet					
20						
25						
30						

AS-BUILT DESIGN



OVM/PID: N

OCT 13 1994

RUEN DRILLING, INC.
BOX 267
CLARK FORK, ID 83811
(208) 266-1151
START CARD # 21140
WELL TAG # AAV 811
SW¼-SW¼ SEC 11 T9N-R28E

Gerald Schroeder
JERALD SCHROEDER #1723

LEGEND

I 2-inch O.D. split-spoon sample (pushed)

▽ ATD Observed groundwater level (ATD = at time of drilling)

AGRA
Earth & Environmental
W. 539 Sharp, Suite D
Spokane, Washington 99201

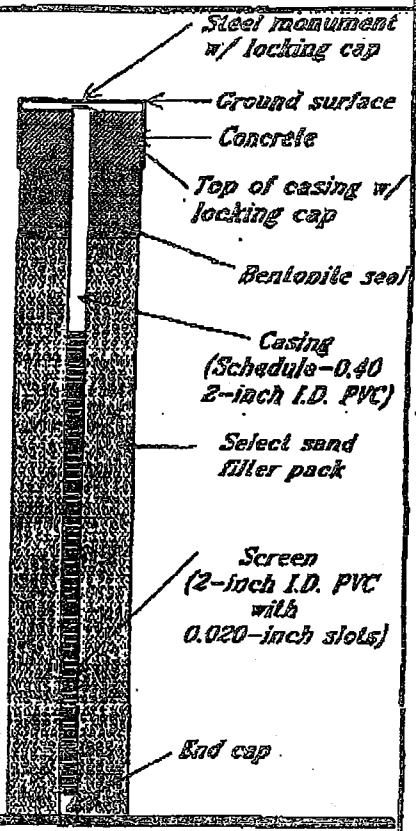
Drilling started: *11 September 1994* Drilling completed: *11 September 1994* Logged by: *ENIS*

PROJECT *Richland Chevron* W.O. *12-1203-00* WELL NO. *MW-3*

Elevation reference:
Ground surface elevation: *95.13* Casing elevation: *94.57*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING (ppm)	GROUND WATER
0	*Silt with debris (FILL)*					
	Brown fine to medium SAND with some gravel and silt (FILL)					
5	*Medium stiff, dry, brown to tan fine sandy SILT (Loess)*		S-1	7	0.0	
						ATD
10	*Dense, saturated, grayish brown, sandy GRAVEL with slight hydrocarbon-like odor*		S-2	47	27.6	
	--Stained soil, sandy GRAVEL with hydrocarbon-like odor, possible aged gasoline/diesel					
15	*Dense, saturated, brown sandy GRAVEL with some cobbles and hydrocarbon-like odor*		S-3	21	40.7	
	Boring terminated at approximately 16 feet					
20						
25						
30						

AS-BUILT DESIGN



TESTING

RECEIVED
OCT 13 1994

RUEN DRILLING, INC.
BOX 267
CLARK FORK, ID 83811
(208) 266-1151

START CARD # 21140
WELL TAG # AAV 812
SW¼ SW¼ SEC 11 T9N R28E

GERALD SCHROEDER # 1723

LEGEND

2-inch O.D. split-spoon sample (pushed)

ATD Observed groundwater level (ATD = at time of drilling)

AGRA
Earth & Environmental
W. 539 Sharp, Suite D
Spokane, Washington 99201

Drilling started: *10 September 1994* Drilling completed: *10 September 1994* Logged by: *ENIS*

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

WATER WELL REPORT

STATE OF WASHINGTON

7781 Start Card No. 10057

Water Right Permit No. E

(1) OWNER: Name City of Richland Address 1300 Mansfield, Richland, WA

(2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec. 11 T. 9N N., R. 28E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Same as Owner

(3) PROPOSED USE: Monitor ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☐ Other ☑

(4) TYPE OF WORK: Owner's number of well (if more than one) MW-1

Abandoned ☐ New well ☑ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☐ Rotary ☐ Bored ☑ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 10 inches. Drilled 15 feet. Depth of completed well 14.5 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ Liner installed ☐ Threaded ☑ 4" Diam. from 0 ft. to 4.5 ft.

Perforations: Yes ☐ No ☑
Type of perforator used ____
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Teleo Tri-Lock
Type Sch 40 PVC Model No. ____
Diam. 4" Slot size .020 from 4.5 ft. to 14.5 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 8-12 Silica Sand
Gravel placed from 3.5 ft. to 15 ft.

Surface seal: Yes ☑ No ☐ To what depth? 3.5 ft.
Material used in seal Bentonite Hole Plug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 9.5 ft. below top of well Date 12-3-92
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Moist Brown Silt	0	5
" - More Moisture	5	10
Brown, Silty Sand w/some gravels	10	15

Work started 12-3-92 19. Completed 12-3-92 19

WELL CONSTRUCTOR CERTIFICATION:

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

NAME Chen-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 2014 N. 4th Pasco, WA

(Signed) Russell A. Vance (WELL DRILLER) License No. 1574

Contractor's Registration No. ____ Date 12-14-92 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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

WATER WELL REPORT

STATE OF WASHINGTON

7990 Start Card No. 33557

Water Right Permit No. E

(1) OWNER: Name City of Richland Address 1300 Mansfield Richland, WA

(2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 11 T 9N N., R 28E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Same as Owner

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ ☐ Irrigation ☐ Test Well ☐ Other ☑ Monitor ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) MW-2

Abandoned ☐ New well ☑ Method: Dug ☐ Bored ☑ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 10 inches. Drilled 15.5 feet. Depth of completed well 15 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ Liner installed ☐ Threaded ☑ 4" Diam. from 0 ft. to 5 ft.

Perforations: Yes ☐ No ☑
Type of perforator used ____
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Tri-Loc
Type Sch. 40 PVC Model No. ____
Diam. 4" Slot size .020 from 5 ft. to 15 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 8-12 Silica Sand
Gravel placed from 3.5 ft. to 15.5 ft.

Surface seal: Yes ☑ No ☐ To what depth? 3.5 ft.
Material used in seal Bentonite Hole Plug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 9 ft. below top of well Date 12-3-92
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Grey/Brown Silt - Moist + Plastic	0	6
Silty Clay - Grey/Brown + Moist	6	10
Grey/Brown Silty Sand w/some gravels	10	15.5

Work started 12-3-92 19. Completed 12-3-92 19

WELL CONSTRUCTOR CERTIFICATION:

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

NAME Chen-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 2314 N. 4th Pasco WA

(Signed) Russell A. Vance (WELL DRILLER) License No. 1574

Contractor's Registration No. ____ Date 12-14-92 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 33558

Water Right Permit No. 5

1) OWNER: Name City of Richland Address 1300 Mansfield Richland, WA

2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 11 T. 9N N., R 28E W.M.

2a) STREET ADDRESS OF WELL (or nearest address) Same as Owner

3) PROPOSED USE: Monitor ☐ Domestic ☐ Irrigation ☐ DeWater ☐ Industrial ☐ Municipal ☐ Test Well ☐ Other ☑

4) TYPE OF WORK: Owner's number of well (if more than one) MW-3
Abandoned ☐ New well ☑ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☐ Rotary ☐ Bored ☑ Driven ☐ Jetted ☐

5) DIMENSIONS: Diameter of well 10 inches.
Drilled 17 feet. Depth of completed well 16 ft.

6) CONSTRUCTION DETAILS:
Casing installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ Liner installed ☐ Threaded ☑ 4" Diam. from 0 ft. to 6 ft.

Perforations: Yes ☐ No ☑
Type of perforator used ____
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Tri-Loc
Type Sch. 40 PVC Model No. ____
Diam. 4" Slot size .020 from 6 ft. to 16 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 3-12 Silica Sand
Gravel placed from 5 ft. to 17 ft.

Surface seal: Yes ☑ No ☐ To what depth? 5 ft.
Material used in seal Bentonite Hole Plug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

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

8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 8.5 ft. below top of well Date 12-3-92
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " " " "
" " " " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Moist, Grey/Brown Silt	0	6.5
Silty Clay - Grey/Brown - Moist	6.5	9
Silty Sand - Grey w/some gravels	9	17

Work started 12-3-92 19. Completed 12-3-92 19.

WELL CONSTRUCTOR CERTIFICATION:

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

NAME Chen-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 2214 N. 4th Pasco, WA

(Signed) Russell A. Vance (WELL DRILLER) License No. 1574

Contractor's Registration No. ____ Date 12-14-92 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329-

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 55559

Water Right Permit No. E

(1) OWNER: Name City of Richland Address 1300 Mansfield Richland WA

(2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 11 T. 9N N., R 28E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Same as Owner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other ☑ DeWater ☐ Monitor

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

Abandoned ☐ New well ☑ Method: Dug ☐ Bored ☑ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 10 inches. Drilled 15.5 feet. Depth of completed well 14.5 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ ____" Diam. from ____ ft. to ____ ft.
Liner installed ☐
Threaded ☑ 4" Diam. from 0 ft. to 4.5 ft.

Perforations: Yes ☐ No ☑
Type of perforator used ____
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Tri-Lock
Type Sch. 40 PVC Model No. ____
Diam. 4" Slot size .020 from 4.5 ft. to 14.5 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 2-12 Silica Sand
Gravel placed from 3.5 ft. to 15.5 ft.

Surface seal: Yes ☑ No ☐ To what depth? 3.5 ft.
Material used in seal Bentonite Holeplug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 8.5 ft. below top of well Date 12-4-92
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " " "
" " " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airlest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Moist, Grey Sandy silt somewhat Plastic	0	5.5
" - slightly clay	5.5	9
Sandy Gravel w/some Silt Grey/Brown	9	15.5

Work started 12-4-92, 19. Completed 12-4-92, 19

WELL CONSTRUCTOR CERTIFICATION:

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

NAME Chen-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 2314 N. 4th Pasco, WA

(Signed) Russell A. Vance (WELL DRILLER) License No. 1574

Contractor's Registration No. ____ Date 12-14-92, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1320-

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 01205 to

Water Right Permit No. E

(1) OWNER: Name City of Richland Address 1310 Mansfield, Richland, WA

(2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 11 T. 9N N., R 28 E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Same as Owner

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ ☐ Irrigation ☐ Test Well ☐ Other ☑ ☐ DeWater
Monitor Well

(4) TYPE OF WORK: Owner's number of well (if more than one) MW-5
Abandoned ☐ New well ☑ Method: Dug ☐ Bored ☑
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 10 inches.
Drilled 16 feet. Depth of completed well 16 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐
Liner installed ☐
Threaded ☑ 4 " Diam. from 0 ft. to 16 ft.

Perforations: Yes ☐ No ☑
Type of perforator used ____
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Tri-Lock
Type Sch. 40 PVC Model No. ____
Diam. 4" Slot size .020 from 6 ft. to 16 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 8-12 Silica Sand
Gravel placed from 4.5 ft. to 16 ft.

Surface seal: Yes ☑ No ☐ To what depth? 4.5 ft.
Material used in seal Bentonite Hole plug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 9.5 ft. below top of well Date 12-4-92
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airlift ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Moist, Grey, Gravelly Sand w/some silt	0	2
Moist, Grey, Silty Clay	2	7.5
Sandy silt with some clay - Grey Moist	7.5	10
Sandy Gravel w/some silt	10	16

DEC 15 1992
DEPARTMENT OF ECOLOGY
FINAL RECEIPT OFFICE

Work started 12-4-92 19. Completed 12-4-92 19

WELL CONSTRUCTOR CERTIFICATION:

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

NAME Chen-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 2214 N. 4th Pasco, WA
(Signed) Russell A. Vaux License No. 1574 (WELL DRILLER)
Contractor's Registration No. ____ Date 12-14-92 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 3

JUL 22 '96 04:59PM WDOE-CRO P.21/32

7994

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 011058

Water Right Permit No. E

(1) OWNER: Name City of Richland Address 1200 Maasfield, Richland, WA

(2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 11 T. 9N N., R. 28E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address)

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other ☑ DeWater ☐
Monitor Well

(4) TYPE OF WORK: Owner's number of well (if more than one) MW-6
Abandoned ☐ New well ☑ Method: Dug ☐ Bored ☑ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 10 inches. Drilled 15 feet. Depth of completed well 14.5 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ Liner installed ☐ Threaded ☑ 4" Diam. from 0 ft. to 4.5 ft.

Perforations: Yes ☐ No ☑
Type of perforator used
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Tri-Lock
Type Sch. 40 PVC Model No.
Diam. 4" Slot size .030 from 4.5 ft. to 14.5 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 8-12 Silica Sand
Gravel placed from 3.5 ft. to 15 ft.

Surface seal: Yes ☑ No ☐ To what depth? 3.5 ft.
Material used in seal Bentonite Holeplug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 9.5 ft. below top of well Date 12-4-92
Artesian pressure ____ lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom?
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " "
" " " "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Moist, Silty Sand - Grey with fine gravels	0	3.5
Moist Grey/Brown Silty Sand with some fine Gravels	3.5	7
Moist Grey/Brown clayey silt with fine sand	7	10.5
Grey Sandy Gravel w/some silt	10.5	15

RECEIVED
DEC 15

Work started 12-4-92 19. Completed 12-4-92 19

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

NAME Chen-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 2214 N. 4th Pasco, WA
(Signed) Russell A. Caine (WELL DRILLER) License No. 1574
Contractor's Registration No. Date 12-14-92 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1320-

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 033560

Water Right Permit No. ☑

1) OWNER: Name City of Richland Address 1300 Mansfield, Richland, WA

2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 11 T. 9N N., R. 28E W.M.

2a) STREET ADDRESS OF WELL (or nearest address) Same as Owner

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ ☐ Irrigation ☐ Test Well ☐ Other ☑ ☐ DeWater
Monitor Well

4) TYPE OF WORK: Owner's number of well (if more than one) MW-7
Abandoned ☐ New well ☑ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☑ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

5) DIMENSIONS: Diameter of well 8 inches. Drilled 16 feet. Depth of completed well 16 ft.

6) CONSTRUCTION DETAILS:
Casing Installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ ____" Diam. from ____ ft. to ____ ft.
Liner installed ☐
Threaded ☑ 4" Diam. from 0 ft. to 6 ft.

Perforations: Yes ☐ No ☑
Type of perforator used ____
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Tri-Lock
Type Sch. 40 PVC Model No. ____
Diam. 4" Slot size .020 from 6 ft. to 16 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 8-12 Silica Sand
Gravel placed from 4 ft. to 16 ft.

Surface seal: Yes ☑ No ☐ To what depth? 4 ft.
Material used in seal Bentonite Holeplug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

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

8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 9 ft. below top of well Date 12-9-92
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Fill Material	0	2
Moist Brown Silty sand	2	4
Moist Brown Sandy silt	4	6.5
Clayey Grey/Brown Silt -moist	6.5	9.5
Course Grey sand with gradels	9.5	16

DEC 15

Work started 12-8-92 19. Completed 12-9-92 19

WELL CONSTRUCTOR CERTIFICATION:

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

NAME Cleu-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 2214 N. 4th Pasco, WA

(Signed) Russell A. Vance (WELL DRILLER) License No. 1574

Contractor's Registration No. ____ Date 12-14-92 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) •1329• 3

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

WATER WELL REPORT

STATE OF WASHINGTON

8/84 Start Card No. 017059

Water Right Permit No. F2

1) OWNER: Name City of Richland Address 1300 Mansfield, Richland, WA

2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 11 T. 9N N., R 28E W.M.

2a) STREET ADDRESS OF WELL (or nearest address) Same as Owner

(3) PROPOSED USE: Monitor ☐ Domestic ☐ Irrigation ☐ DeWater ☐ Industrial ☐ Test Well ☐ Municipal ☐ Other ☑

4) TYPE OF WORK: Owner's number of well (if more than one) MW-8

Abandoned ☐ New well ☑ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☐ Rotary ☐ Bored ☑ Driven ☐ Jetted ☐

5) DIMENSIONS: Diameter of well 10 inches. Drilled 15 feet. Depth of completed well 15 ft.

6) CONSTRUCTION DETAILS:

Casing installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ Liner installed ☐ Threaded ☑ 4" Diam. from 0 ft. to 5 ft.

Perforations: Yes ☐ No ☑
Type of perforator used ____
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Tri-Lock
Type Sch #40 PVC Model No ____
Diam. 4" Slot size .020 from 5 ft. to 15 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 8-12 Silica Sand
Gravel placed from 4 ft. to 15 ft.

Surface seal: Yes ☑ No ☐ To what depth? 4 ft.
Material used in seal Bentonite Hole Plug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

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

8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 8.5 ft. below top of well Date 1-30-93
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Brown, Sandy Silt - moist	0	5
Gray-Brown Clayey Silt, very moist	5	9
Sandy Gravel w/some silt & Clay Saturated	9	15

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FEB - 4 1993
DEPARTMENT OF ECOLOGY
WATER RESOURCES

Work started 1-30-93 19. Completed 1-30-93 19

WELL CONSTRUCTOR CERTIFICATION:

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

NAME Chen-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 2214 N. 4th Pasco, WA 99301

(Signed) Russell A. Vance (WELL DRILLER) License No. 1574

Contractor's Registration No. ____ Date ____, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 3

ile Original and First Copy with epartment of Ecology
Second Copy—Owner's Copy
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WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 61260

Water Right Permit No.

1) OWNER: Name City of Richland Address 1300 Maxfield, Richland, WA

) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 11 T 9N N., R 28E W.M.

2a) STREET ADDDRESS OF WELL (or nearest address) Same as Owner

3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ ☐ Irrigation ☐ Test Well ☐ Other ☑ ☐ DeWater
Monitor

4) TYPE OF WORK: Owner's number of well (if more than one) MW-9
Abandoned ☐ New well ☑ Method: Dug ☐ Bored ☑ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

5) DIMENSIONS: Diameter of well 10 inches. Drilled 16.5 feet. Depth of completed well 16 ft.

6) CONSTRUCTION DETAILS:
Casing Installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ ____" Diam. from ____ ft. to ____ ft.
Liner Installed ☐
Threaded ☑ 4 " Diam. from 0 ft. to 16 ft.

Perforations: Yes ☐ No ☑
Type of perforator used
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Tri-Lock
Type Sch. #40 PVC Model No.
Diam. 4" Slot size .020 from 6 ft. to 16 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 8-12 Silica Sand
Gravel placed from 4.5 ft. to 16.5 ft.

Surface seal: Yes ☑ No ☐ To what depth? 4.5 ft.
Material used in seal Bentonite Hole Plug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

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

8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 9 ft. below top of well Date 1-30-93
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom?
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Moist, brown, Sandy Silt	0	7
Same as above, now some gravels	7	10.5
Brown, Sandy Gravels w/some silt Saturated	10.5	16.5

FEB – 4 1993

Work started 1-30-93 19. Completed 1-30-93 19

WELL CONSTRUCTOR CERTIFICATION:

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

NAME Chen-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 2214 N. 4th Pasco, WA 99301

(Signed) Russell A. Vause (WELL DRILLER) License No. 1574

Contractor's Registration No. Date 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1328-

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

WATER WELL REPORT

STATE OF WASHINGTON

8/31 Start Card No. 011061

Water Right Permit No. ________

(1) OWNER: Name City of Richland Address 1300 Mansfield, Richland, WA

(2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 11 T. 9N N., R. 28E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Same as Owner

(3) PROPOSED USE: ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Municipal ☐ Test Well ☐ Other ☑ Monitor

(4) TYPE OF WORK: Owner's number of well (if more than one) MW-10
Abandoned ☐ New well ☑ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Bored ☑ Cable ☐ Driven ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 10 inches.
Drilled 16 feet. Depth of completed well 15.5 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ ____" Diam. from ____ ft. to ____ ft.
Liner installed ☐
Threaded ☑ 4" Diam. from 0 ft. to 5.5 ft.

Perforations: Yes ☐ No ☑
Type of perforator used ________
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Tri-Lock
Type Sch #40 PVC Model No. ____
Diam. 4" Slot size .020 from 5.5 ft. to 15.5 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 8-12 Silica Sand
Gravel placed from 4 ft. to 16 ft.

Surface seal: Yes ☑ No ☐ To what depth? 4 ft.
Material used in seal Bentonite Hole Plug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 9 ft. below top of well Date 1-30-93
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.

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

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Brown, Moist, Silty Sand	0	2.5
Yellow-Brown, Moist, Sandy Silt	2.5	8.5
Gray-Brown, Sandy Gravels w/some silt Saturated	8.5	16

RECEIVED FEB - 4 1993

Work started 1-30-93, 19__. Completed 1-30-93, 19__

WELL CONSTRUCTOR CERTIFICATION:

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

NAME Chen-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 2214 N. 4th Pasco WA 99301
(Signed) Russell A. Vance (WELL DRILLER) License No. 1574
Contractor's Registration No. ________ Date ________, 19__

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329-

Start Card No. 033561

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partment of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Water Right Permit No. ? E

(1) OWNER: Name City of Richland Address 1300 Maasfield, Richland WA 99352

(2) LOCATION OF WELL: County Benton SW ¼ NW ¼ Sec 11 T. 9N N., R 28E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Same as Owner

(3) PROPOSED USE: Monitor ☐ Domestic ☐ Irrigation ☐ DeWater ☐ Industrial ☐ Test Well ☐ Municipal ☐ Other ☑

(4) TYPE OF WORK: Owner's number of well (if more than one) MW-11

Abandoned ☐ New well ☑ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☐ Rotary ☐ Bored ☑ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 10 inches. Drilled 15 feet. Depth of completed well 14.5 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ Liner installed ☐ Threaded ☑ 4" Diam. from 0 ft. to 4.5 ft.

Perforations: Yes ☐ No ☑
Type of perforator used ____
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Trio Lock
Type Sch. #40 PVC Model No. ____
Diam. 4" Slot size .020 from 4.5 ft. to 14.5 ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☑ No ☐ Size of gravel 8-12 Silica Sand
Gravel placed from 3.5 ft. to 15 ft.

Surface seal: Yes ☑ No ☐ To what depth? 3.5 ft.
Material used in seal Bentonite - Hole Plug
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 8 ft. ft. below top of well Date 3-1-93
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Yellow/Brown, Silty Sand Slightly Moist	0	7
Yellow/Brown, Silty Sand - Moist	7	9
Grey/Brown, Sandy Gravel w/some silt - Saturated	9	13.5
Blue/Gray, Sandy Gravel w/some silt - Saturated	13.5	15

RECEIVED MAR - 2 1993

Work started 2-26-93 19. Completed 2-31-93 19.

WELL CONSTRUCTOR CERTIFICATION:

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

NAME Chen-Northern Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 2214 N. 4th Pasco, WA 99301

(Signed) Russell A. Vance (WELL DRILLER) License No. 1574

Contractor's Registration No. ____ Date ____, 19____

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/07) -1329-