TOSCO

AOC 0922
AGY CORRECT.

Tosco Distribution Company
A Division of Tosco Corporation
Portland Terminal
5528 Northwest Doane Avenue
Portland, Oregon 97210
P.O. Box 76
Portland, Oregon 97207
Telephone: 503-248-1529
Facsimile: 503-248-1597

November 8, 1999

Mr. Loren Garner
Oregon Department of Environmental Quality
2020 SW 4th Avenue, Suite 400
Portland, Oregon 97201-5884

Re: Written Report for Diesel Spill – OERS No. 99-2526
Tosco Refining Company - Portland Terminal

Dear Mr. Garner:

In response to your correspondence of November 3, 1999 and in compliance of OAR 340-108-040, please find the enclosed written report concerning the diesel spill that occurred at the terminal on November 2, 1999. The report includes the completed form provide in your November 3 correspondence. Copies of relevant supplemental information requested in the report form are attached to the report.

If you have additional questions or require further information, please contact me a 248-1538.

Sincerely,

Steve Gloeckner
Terminal Manager

Cc: S. Caddell
M. Cramer

SPILL/RELEASE REPORT

1 - GENERAL INFORMATION OERS No. 99-2526

a. Company/Individual Name: Tosco Refining Company

b. Address: 5528 N.W. Doane Ave
Portland OR 97210

c. Company Contact Person: Steve Gloecknea

d. Phone Number(s): 503 248-1538

e. Specific on-site location of the release (and address if different from above):
Same As Above

Please provide a map of the site showing area(s) where the release occurred, any sample collection locations, location of roads/ditches/surface water bodies, etc.

2 - RELEASE INFORMATION

a. Date/Time Release started: 11/02/99 19:10 Date/Time stopped: 11/02/99 19:10

b. Release was reported to (specify Date/Time/Name of Person contacted where applicable):

ODEQ OERS said they would contact the ODEQ

OERS 11/02/99 19:55 Joseph Cunningham

NRC 11/02/99 19:36 Ms Pendleton NRC# 504542

Other (describe): 11/02/99 19:30 USCG MSO Portland Joe Mattson

c. Person(s) reporting release: Rob Gross - Tosco Portland Head Operator

d. Name, quantity and physical state (gas, liquid, solid or semi-solid) of material(s) released:
Name: No. 2 Diesel Fuel Quantity: ½ gallon
Physical State: Liquid

Please attach copies of material safety data sheets (MSDS) for released material(s).

e. The release affected: ___Air ___Groundwater ✓Surface Water ___Soil ___Sediment

f. Name and distance to nearest surface water body(s), even if unaffected (include locations of creeks, streams, rivers and ditches that discharge to surface water on maps):
Leak occured into the Willamette River from the Tug Howard Olson

Has the release reached the surface water identified above?: ✓Yes ___No
Could the release potentially reach the surface water identified above? ✓Yes ___No
Explain:

g. Depth to nearest aquifer/groundwater: N/A

Is nearest aquifer/groundwater potable (drinkable)? ___Yes ✓No
Has the release reached the nearest aquifer/groundwater? ___Yes ✓No
Explain:

h. Release or potential release to the air occurred? ___Yes ✓No
Explain: _____

i. Was there a threat to public safety? ___Yes ✓No
j. Is there potential for future releases? ✓Yes ___No
Explain: this release was caused by the tug "Howard Olson". Future tug fuelings could cause minor spills if the tug operators are careless
k. Describe other effects/impacts from release (emergency evacuation, fish kills, etc.):
N/A

l. Describe how the release occurred. Include details such as the release source, cause, contributing weather factors, activities occurring prior to or during the release, dates and times of various activities, first responders involved in containment activities, etc.:
Wayne Laney was the TPIC in charge of the tug fueling. The DOT was completed at 1650 with the transfer of fuel beginning at 1720. The mate on the "Howard Olson" switched fuel tanks on board for receiving at 1910. Foss has indicated that there was 13" of space left in #4 Port Starboard tank at the time the mate switched from receiving into that tank to begin receiving into tanks 1 & 2. Foss indicates that for an unknown reason, diesel "burped" up the deck gauge tube for tank #4 Port Starboard. The transfer was stopped with approximately 1/2 gallon of diesel that seeped past the deck absorbent and into the river. The #4 port starboard tank was gauged and showed space of 12 1/2". The diesel spilled into the river was soaked-up by absorbent pads. USCG approved restarting the fueling at 2035 after the diesel was cleaned up and all tug systems had been checked.

3 - SITE INFORMATION

a. Adjacent land uses include (check all that apply and depict on site maps):
___Residential ___Commercial ___Light Industrial ✓Heavy Industrial
___Agricultural ___Other (describe): _____
b. What is the population density surrounding the site: minimal - primarily industrial
c. Is the site and/or release area secured by fencing or other means? ✓Yes ___No
d. Soil types (check all that apply): ___alluvial ___bedrock ___clay ✓sandy
___silt ___silty loam ___artificial surface (cement/asphalt/etc.)
e. Describe site topography: Wharf.

4 - CLEANUP INFORMATION

a. Was site cleanup performed? ✓ Yes ___ No
If No, explain: _____

b. Who performed the site cleanup?
Company Name: Tosco Refining Company
Address: 5526 NW Doane Avenue
Portland OR 97210
Cleanup Supervisor: Roger McGowne
Phone Number(s): (503) 248-1558

c. Has all contamination been removed from the site? ✓ Yes ___ No
If No, explain: _____

d. Estimated volume of contaminated soil removed: N/A

e. Estimated volume of contaminated soil left in place: N/A

f. Was a hazardous waste determination made for cleanup materials? ✓ Yes ___ No

g. Based on the determination, are the cleanup materials hazardous wastes?
___ Yes ✓ No If Yes, list all waste codes: _____

h. Was contaminated soil or water disposed of at an off-site location? ___ Yes ✓ No
If yes, attach copies of receipts/manifests/etc., and provide the following information:
Facility Name: _____
Address: _____
_____
Facility Contact: _____
Phone Number(s): _____

i. Is contaminated soil or water being stored and/or treated on-site? ___ Yes ✓ No
If yes, please describe the material(s), storage and/or treatment area, and methods utilized (attach additional sheets if necessary):
N/A

j. Describe cleanup activities including what actions were taken, dates and times actions were initiated and completed, volumes of contaminated materials that were removed, etc. (attach additional sheets or contractor reports if necessary or more convenient):
N/A

5 - SAMPLING INFORMATION

Attach copies of all sample data and indicate locations of sample collection on maps.

a. Were samples of contaminated soil collected? ____Yes ____No ✓N/A
b. Were samples of contaminated water collected? ____Yes ____No ✓N/A
c. Were samples collected to show that all contamination had been removed?
____Yes ____No ✓N/A
d. Describe sampling activities, results and discuss rationale for sampling methods:

N/A

6 - SPILL REPORT CHECKLIST

To ensure that you have gathered all the information requested by the Department in this Spill/Release Report, please complete the following checklist:

✓ Map(s) of the site showing buildings, roads, surface water bodies, ditches, waterways, point of the release, extent of contamination, areas of excavation and sample collection locations attached.

✓ Material Safety Data Sheet (MSDS) for released material(s) attached.

N/A Sampling data/analytical results attached.

N/A Receipts/manifests (if any) for disposal of cleanup materials attached.

N/A Contractor reports (if any) attached.

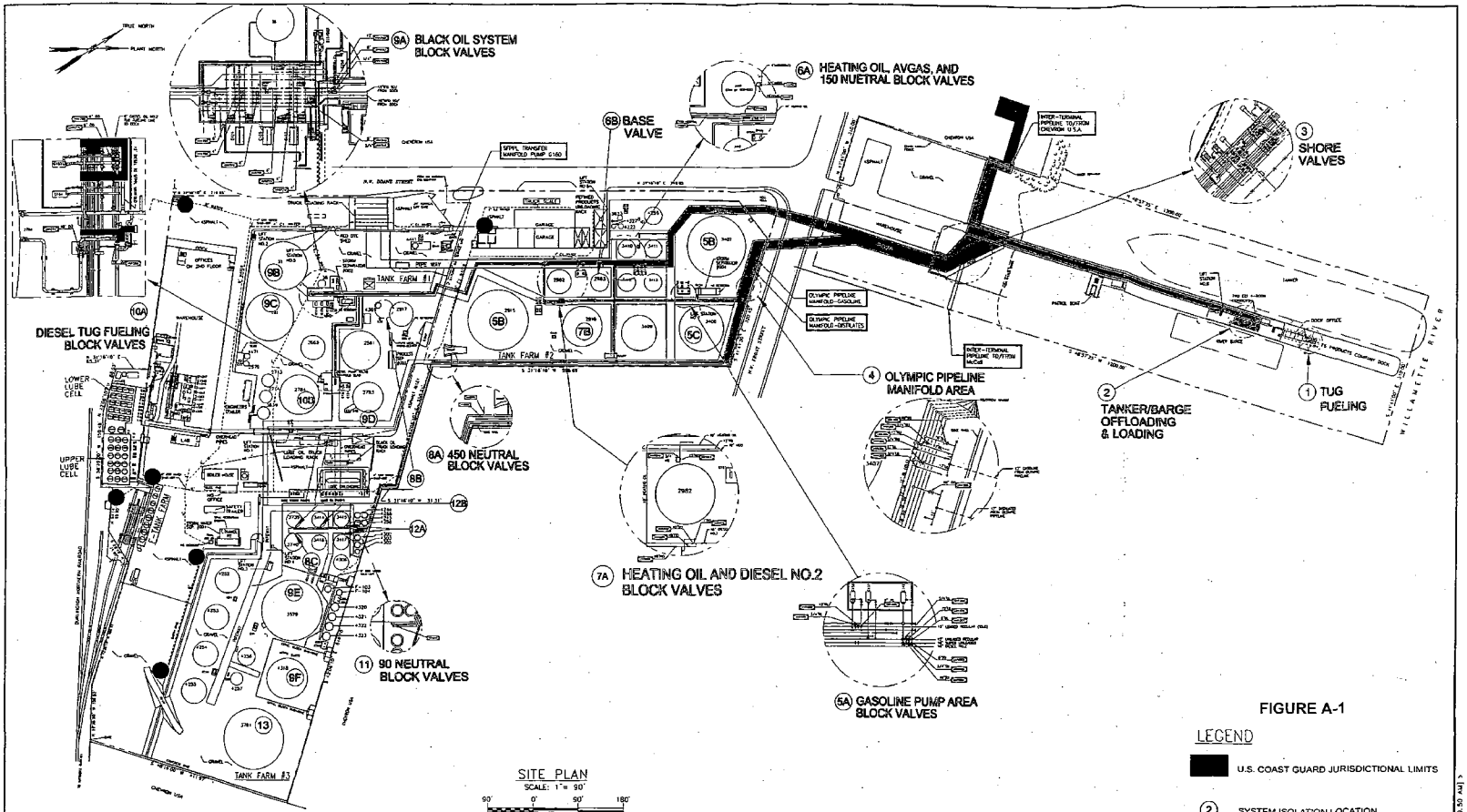

FIGURE A-1

LEGEND

- U.S. COAST GUARD JURISDICTIONAL LIMITS
- (2) SYSTEM ISOLATION LOCATION
- FIRE HYDRANTS

DRAWING NO.	REFERENCE DRAWINGS	REV NO.	DATE	REVISED	DRAWN BY	CKD BY
0608-C-1020	DOCK FACILITIES	0	08/26/97	ISSUED FOR INFORMATION	DAB	MK
0608-C-1021	TANK FARM NO.2 GENERAL ARRANGEMENT	1	09/12/97	UPDATED AREA 5A TO REFLECT TRUCK LOADING RACK UPGRADE PROJECT	DAB	MK
0608-C-1022	TANK FARM NO.1 GENERAL ARRANGEMENT					
0608-C-1023	TANK FARM NO.3 GENERAL ARRANGEMENT					

TOSCO
Tosco Distribution Company
A Division of Tosco Corporation
5528 NW Doane St.
Portland, Oregon 97210

ALPHA ENGINEERS and CONSTRUCTORS, INC.
15 NW 5th AVE, SUITE 204, PORTLAND, OR. 97209 Tel(503)227-2511/Fax(503)221-2344

DRAWN BY	D.A.BYNUM
CKD BY	MK
APPD BY	MK
SCALE	AS SHOWN
DATE	08/26/97

PORTLAND TERMINAL
PORTLAND, OREGON

SITE PLAN
PIPELINE SYSTEM ISOLATION
FIRE HYDRANTS
USCG JURISDICTION

DRAWING NO.	SHEET	REV
0608-C-1200	1 OF 1	1

8RC1200.DWG -CPD: 09/17/97 [MAE 09:50 PM]

Tosco\acad\acadlfp\graphics\ISOLATION_FH-USCG.cdr

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: No. 2 Diesel Fuel
Product Code: Multiple
Synonyms: CARB Diesel TF3
CARB Diesel
CARB Diesel 10%
Diesel Fuel Oil
EPA Low Sulfur Diesel Fuel
EPA Low Sulfur Diesel Fuel - Dyed
EPA Off Road High Sulfur Diesel - Dyed
No. 2 Diesel Fuel Oil
No. 2 Fuel Oil - Non Hiway - Dyed
No. 2 High Sulfur Diesel - Dyed
No. 2 Low Sulfur Diesel - Dyed
No. 2 Low Sulfur Diesel - Undyed
Generic Name: Mid distillate
Chemical Family: Petroleum hydrocarbon

Responsible Party: Tosco Corporation
72 Cummings Point Road
Stamford, CT
06901

For further information contact Help Desk
8am - 4pm Pacific Time, Mon-Fri: 1-800-762-0942

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:

For Chemical Emergencies:
Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800)424-9300
Others: (703)527-3887 (collect)

For Health Emergencies:
San Francisco Poison
Control Center
Cont. US: (800)356-3129
Outside US: (415)821-5338

Health Hazards: Causes severe skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use ventilation adequate to keep exposures below recommended exposure limits, if any (see Section 2 of MSDS). Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

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Physical Hazards: Flammable (or Combustible per 49CFR 173.120(b)(2)) liquid and vapor. Keep away from heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment).

- Physical Form: Liquid
- Appearance: Straw-colored to dyed red
- Odor: Characteristic petroleum

NFPA HAZARD CLASS: Health: 0 (Least)
Flammability: 2 (Moderate)
Reactivity: 0 (Least)

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% Volume	EXPOSURE GUIDELINE		
		Limits	Agency	Type
Diesel Fuel No. 2 CAS# 68476-34-6	98-100	100* mg/m3	ACGIH	TWA-SKIN
Naphthalene CAS# 91-20-3	<1	10 ppm 15 ppm 10 ppm	ACGIH ACGIH OSHA	TWA STEL TWA

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

*Proposed ACGIH (1997)

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Severe skin irritant. Contact may cause redness, burning, drying and cracking of the skin, and severe skin damage. No harmful effects from skin absorption have been reported.

Inhalation (Breathing): *No information available. Studies by other exposure routes suggest a low degree of toxicity by inhalation.*

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Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, and fatigue).

Cancer: Possible skin cancer hazard (see Sections 11 and 14).

Target Organs: Potential hazard to the kidney (see Section 11).

Developmental: Inadequate data available for this material.

Other Comments: High pressure injection of hydrocarbon fuels, oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and kidney disorders.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Immediately remove contaminated shoes, clothing, and constrictive jewelry and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

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Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious, place on the left side with the head down. If possible, do not leave victim unattended. Seek medical attention.

Note To Physicians: High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. Often these injuries require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point: >125°F/>52°C
OSHA Flammability Class: Combustible Liquid
LEL: 0.3 / UEL: 10.0
Autoignition Temperature: 500°F/260°C

Unusual Fire & Explosion Hazards: This material is flammable (or combustible per 49CFR 173.120(b)(2)) and may be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors may travel considerable distances to a source of ignition where they can ignite, flashback, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the danger area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should also be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate danger area, keep unauthorized

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personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from danger area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable (or Combustible per 49CFR 173.120(b)(2)). Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate danger area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material. Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8). Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practice.

"Empty" containers retain residue (liquid and/or vapor) and may

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be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to Occupational Safety and Health Administration Regulations, ANSI Z49.1 and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2). Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positve pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.34 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

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Skin: The use of gloves impermeable to the specific material handled is advised to prevent skin contact, possible irritation, and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Flash Point: >125°F / >52°C
Flammable/Explosive Limits (%): LEL: 0.3 / UEL: 10.0
Autoignition Temperature: 500°F / 260°C
Appearance: Straw-colored to dyed red
Physical State: Liquid
Odor: Characteristic petroleum
pH: Neutral
Vapor Pressure (mm Hg): 0.40
Vapor Density (air=1): >3
Boiling Point: 320-700°F / 160-371°C
Freezing/Melting Point: No Data
Solubility in Water: Negligible
Specific Gravity: 0.81-0.88 @60°F
Percent Volatile: Negligible
Evaporation Rate (nBuAc=1): <1
Viscosity: 32.6-40.0 SUS @100°F
Bulk Density: 7.08 lbs/gal

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of storage and handling. Flammable (or Combustible per 49CFR 173.120(b)(2))

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liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Incompatible Materials: Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc.

Hazardous Decomposition Products: The use of hydrocarbon fuels in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. See Section 11 for additional information on hazards of engine exhaust, if any.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Diesel Fuel No. 2 (CAS# 68476-34-6)

Carcinogenicity: Chronic dermal application of certain middle distillate streams contained in diesel fuel No. 2 resulted in an increased incidence of skin tumors in mice. This material has not been identified as a carcinogen by NTP, IARC, or OSHA. Diesel exhaust is a probable cancer hazard based on tests with laboratory animals.

Target Organ(s): Limited evidence of renal impairment has been noted from a few case reports involving excessive exposure to diesel fuel.

Naphthalene (CAS# 91-20-3)

Carcinogenicity: Female mice exposed via inhalation to naphthalene developed alveolar adenomas. This effect was not seen in male mice. It has not been identified as a carcinogen by NTP, IARC or OSHA.

12. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the material is spilled

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to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

13. TRANSPORT INFORMATION

DOT Proper Shipping Name / Technical Name: Diesel Fuel
Hazard Class or Division: 3
ID #: NA1993
Packing Group: III

14. REGULATORY INFORMATION

This material contains the following chemicals subject to the reporting requirements of **SARA** 313 and 40 CFR 372:

COMPONENT	CAS NUMBER	WEIGHT %
-- None known --		

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of **California Proposition 65** (CA Health & Safety Code Section 25249.5):

COMPONENT	EFFECT
Diesel engine exhaust, while not a component of this material, is on the Proposition 65 list of chemicals known to the State of California to cause cancer.	

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This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any. Diesel exhaust is a probable cancer hazard based on tests in laboratory animals. It has been identified as a carcinogen by IARC.

EPA (CERCLA) Reportable Quantity: --None--

15. DOCUMENTARY INFORMATION

Issue Date: 11/12/97
Previous Issue Date: None
Product Code: Multiple
Previous Product Code: None

16. DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

COP0014936

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
	Generator		A09	04419	001

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
IT CORPORATION 15055 SW SEQUOIA PKWY, SUITE 140 PORTLAND, OR 97224 USA	(503) 624-7200 Person to Contact: LORRIE BEACH FAX #: (503) 620-7658	Customer Account Number with TPS: 1000454
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO WILLBRIDGE TERMINAL 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Person to Contact:	TPH Levels
	FAX #:	AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:**	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	503-735-9525 Person to Contact: GLENNA MULLAN FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☒ Consultant ☐	Signature and date:	Month	Day	Year
MARTIN CRAMER			12	9	99

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
GLENNA MULLAN	

Please print or type.

TPS FACILITY COPY

COP0014937

Portland, OR Soil Recycling Facility (9/98)	**TPS TECHNOLOGIES INC.** A ThermoRetec Company SOIL DATA AND CERTIFICATION SHEET	DATE: 12/2/99

Generator/Property Owner: Tosco Distribution Co.
Mailing Address: 5528 NW Doane Ave
PORTLAND, OR 97210
Contact: Marty Cramer
Phone: 503-248-1517
Fax: 503-248-1592

Consultant/Engineering Firm: IT Corp
Address: 15055 SW Sequoia Pkwy, Ste 140
Portland, OR 97224
Contact: Lorrie Beach
Phone: (503) 624-7200
Fax: (503) 620-7658

Testing Laboratory (include contact person and phone number):
Columbia Analytical Services
Harvey Jacky
(360) 577-7222

Sampling Procedures and Location (attach additional sheets and map):
Soil Borings near sewer line.

Site History. (Attach additional sheet if necessary) Type of contamination (gas, diesel, used oil, etc.) Lube oil
Past activities at site: Bulk oil terminal Estimated quantity in tons: 55 gal drum (600 lbs)
How did soil contamination occur? Underground release
Site Name/Address Willbridge Terminal, Portland, OR

Please check appropriate box below and attach all required analytical reports, including test methodologies used. Unless otherwise noted, composite samples should be collected with the following frequency: One (1) sample for 250 tons or less; two (2) samples for 500 tons or less, and one (1) additional sample for each 500 additional tons.

☐ I/We certify that the soil referenced herein is contaminated solely by virgin petroleum products from leaking underground storage tanks(s).
Attach analysis for the following:
1. Total Petroleum Hydrocarbons ID Test (Method TPH-HCID) (may be omitted if Residential LUST)
2. If Method TPH-HCID shows gasoline is present, perform a Total Petroleum Hydrocarbons test for gasoline (Method TPH-G or EPA Method 8020)
3. If Method TPH-HCID shows that diesel, heating oil, and/or Bunker C is present, perform Total Petroleum Hydrocarbons test for fuel oils (EPA Method 418.1 Modified or Method NWTPH-DX)
4. If Method TPH-HCID shows that both gasoline and diesel or heating oils are present, both types of TPH must be performed

☒ I certify that some or all of the contaminants in the soil referenced herein is waste oil or some other non-virgin petroleum product, or virgin petroleum or hydrocarbon product from something other than a leaking underground storage tank.
Attach analysis for the following:
1. If gasoline is present, perform Method TPH-G or EPA Method 8020**
2. If diesel, heating oil or other heavy hydrocarbons are present, perform EPA Method 418.1 Modified or Method NWTPH-DX
3. Volatile Organic Compounds (EPA Methods 9020 or 9253). If TOX levels are >100 ppm, additional testing using EPA Methods 8010 or 8260 as well as Method 8080, 8081 or 8082 for PCBs shall be utilized to assist in the hazardous waste determination
4. Total metals concentration for eight (8) RCRA metals***
   a) arsenic c) cadmium e) lead g) selenium
   b) barium d) chromium f) mercury h) silver
5. Additional analytical data as required.

** If elevated benzene levels are detected, an additional TCLP benzene test may be required in an above-ground soil or leak situation.
*** If elevated metal levels are detected, an additional TCLP test may be required.

No soils referenced herein may be delivered until this certificate is received and approved by TPST, and TPST issues manifest(s) and assigns a delivery date. If any soils delivered to TPST are found to be "hazardous waste" pursuant to federal or state regulations, Client shall be solely responsible for their removal. If Client fails to remove such soils, TPST, acting as Client's agent, may arrange for such removal at Client's expense.

This is a complete and accurate description of the soil referenced herein; no deliberate or willful omissions have been made and all known or suspected hazards have been disclosed herein. I/We further certify that the soil is not "hazardous" as defined by the U.S. Department of Transportation (DOT), US Environmental Protection Agency (EPA), State of Oregon, or local regulations. I/We further certify that the soils referenced herein contain no free liquids. All required analytical reports are attached.

Generator/Owner Authorized Signatory: [signature] Date: 12/7/99
Print Name: MARTIN CRAMER Title: PROJECT MANAGER

Engineer/Environmental Firm Authorized Signatory: [signature] Date: 12/3/99
Print Name: JOHN J RENDA Title: Geologist

COP0014938

JONCO Portable Restrooms
COWLITZ CLEAN SWEEP, INC.
55 INTERNATIONAL WAY, LONGVIEW, WA 98632 (360) 423-6316 FAX (360) 423-3409

Nov. 4, 1999

Mr. Marty Cramer
TOSCO Distribution Company
5528 NW Doane St.
Portland, Oregon 97210

RE: Soil Remediation, Tank # 31, Portland Terminal

On September 9th, 1999, Cowlitz Clean Sweep, Inc. (CCS), began to remove petroleum-contaminated soils from various locations around the TOSCO Portland Terminal. The project called for CCS to remove stained soils from around the Portland Terminal at valves, piping and tank areas.

On Sept. 14th, CCS started to excavate soils around the valves and piping of storage tank #31. The tank is used for storing bunker fuel oil, and there was some visible surface staining on the west side of the tank, primarily under a 12" valve.

As with all stained areas around the terminal, CCS was instructed to remove the soils until visibly clean or down to 12". During the soil removal at tank #31, the stained soils continued down to 16" bgs. At this point a call was made to TOSCO, and the excavated area was backfilled with clean soils. The excavated soils were placed in two DOT 55-gallon drums. The excavation measured 26" long x 20" wide x 16" deep.

After discussions with TOSCO, it was decided that additional soils should be excavated from the area around tank #31, to determine both the lateral and vertical extent of the contaminated soil.

On Sept. 22nd, CCS brought in a mini backhoe and excavated several test trenches around tank 31. Trenches were dug every 10 feet in both directions from the original excavation. Each trench measured 24" wide x 6' long x 4' deep. No visible contamination was detected in any of the six trenches. The trenches were backfilled with the excavated soils.

CCS continued to remove soils in the original excavation, first placing the clean soils aside for re-use as backfill. Once down to the 16" depth, CCS continued to remove contaminated soils, placing soils in 55-gallon drums.

The soils appeared to start "cleaning up" at a depth of 52" bgs. CCS was hesitant to excavate towards the north for fear that a concrete pipe support would shift, due to the

nature of the sandy soils. Further excavating to the east was not possible due to the piping that lay between the valve and the side of the tank.

CCS excavated as much contaminated soils, as was safely possible, placing soils in the drums. Soil samples were than collected from the excavation floor, beneath the pipe support to the north and under the piping towards the east. Samples were taken from the most visibly contaminated areas, sent to Columbia Analytical and ran for NW TPD-Dx. The excavation was backfilled with imported fill material.

Results of the soil samples show that contamination exists in the diesel to heavy oil range for all three samples collected, ranging from 29,000 PPM beneath the pipe support to 1,000 PPM in soils beneath the piping going towards the tank.

It should be noted that CCS also hand excavated two test holes between the east wall of the excavation (where the sampling showed 1,000 PPM) and the tank shell, and both samples showed no visible contamination. With all test trenches showing no visible signs of contamination in either direction of the excavation, it appears that the contamination is confined to the area directly beneath the leaking valve.

All excavated soils were transported to TPS Technologies in Portland for treatment, on 10/11/99.

If you should have any questions regarding this report, please do not hesitate to contact me at 247-9466.

Respectfully,

Scott Gilfillan
CCS, Inc.

Customer Job Report

Gross & Tare Weight Codes: M=Manual; S=Scale; T=Trk File

Job Number Name	SiteAddress	SiteCity	State	ZipCode
A09 -- 04255 TOSCO BULK FACILITY	5528 NW DOANE AVENUE	PORTLAND	OR	97210

Load #	Date & Time Out	Transporter #	Truck & Trailer Number	Gross (lb)	Tare (lb)	Net (lb)	Net Wt (tons)
1	10/11/99 10:37			62,640M	44,620M	18,020	9.01
2	10/12/99 08:39			60,880M	44,280M	16,600	8.30

Completed Loads	Manifests Received	Completed Weight	Estimated Weight	TOTAL Net Wt:
66.70%	2	57.70%	30.00(tons)	17.31 (tons)

COP0014941

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
	Generator	MS	A09	04255	404

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX#: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address: COWLITZ CLEAN SWEEP, INC. 9430-C NW ST HELENS ROAD PORTLAND, OR 97231 USA	Consultant's Phone #: (503) 247 9466 Person to Contact: SCOTT GILFILLAN FAX#:	Customer Account Number with TPS: 9COWLIT
Generation Site (Transport from): *(name & address)* TOSCO BULK FACILITY 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Site Phone #: Person to Contact: FAX#:	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: GLENNA MULLAN FAX#: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX#:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			62640	44620	18020
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				9.01	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: X Steve Adams | Signature and date: X Steve Adams | Month 10 | Day 11 | Year 99

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: GLENNA MULLAN | Signature and date: Glenna Mullan 10/11/99

Please print or type.

TPS INVOICING COPY

COP0014942

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
	Generator	CCS	A09	04255	001

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX#: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address: COWLITZ CLEAN SWEEP, INC. 9430-C NW ST HELENS ROAD PORTLAND, OR 97231 USA	Consultant's Phone #: (503) 247-9466 Person to Contact: SCOTT GILLILAN FAX#:	 Customer Account Number with TPS: 9COWLIT
Generation Site (Transport from): *(name & address)* TOSCO BULK FACILITY 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Site Phone #: Person to Contact: FAX#:	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: GLENNA MULLAN FAX#: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX#:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			20880	4428	16460
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				8.30	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
STEVE Adams		10	12	99

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
GLENNA MULLAN	10/12/99

Please print or type.

TPS INVOICING COPY

COP0014943

AOC 0922

MTG W/ FOSS CORRECT: 12/17/99

WHIT OLSON

RON WOIRLEY

LARRY JOHNSON

CAUSE

FAILURE TO FOLLOW STD. PROCEDURES

- WATCH CHANGES REQUIRE SHUTDOWN BUT DIDN'T HAPPEN THIS TIME
- SUPPOSED TO REDUCE FLOW AT 4' FROM TOP BUT DIDN'T
- GEAR STOWED ON ONE SIDE WHICH GAVE LIST TO PORT & THEN FILLED TANK ON PORT SIDE
  - SIGHT GLASS PLUMBED TO CENTER OF TANK AND VENT ON PORT SIDE W/ LIST ALLOWED FUEL TO BE PUMPED OUT OF VENT
- SEALED BARS AT BOTTOM OF SCUPPERS W/ SILICON BUT FLEXING IN OPEN OCEAN WORKED IT OUT
- NEWER VESSELS HAVE TANK VENTS THAT DISCHARGE TO DAY OR SLOP TANKS

REMEDY

- MORE TRAINING WILL BE DONE TO ENSURE STD PROCEDURES ARE FOLLOWED
- STILL CONDUCTING INTERVIEWS

- FUELING VALVE WOULDN'T CLOSE UNDER PRESSURE

HOWARD OLSON 12/11/99

ONE OF CREW NOT NORMALLY ON TUG BUT
OTHER GUYS PROBABLY SAME

NO DELAYS IN SHUTTING DOWN

DAY TANK VALVE WAS OPEN WHICH CAUSED THE 1ST
SPILL => NOW CHAINED CLOSED

SITE GAUGES USED TO DETERMINE LEVEL IN
TANKS

WERE FILLING 2 TANKS AT SAME TIME & 1
BURPED => DON'T KNOW WHY

WATCH CHANGED & THEN SWITCH TANKS MANUALLY

P.O. VAN MUELLEN - REPORT ACTIONS TO HIM
- FACILITIES

TOOK OFF 8 BAGS SORBENT

email to Larry

COP0014945

12/18/99

HOWARD ~~[illegible]~~ OLSON SPILL

1410 - SPILL

1412 - DEPLOYED SHEEP AROUND SPILL AREA

NOT SURE WHY SPILL HAPPENED

TANK BURPED AND HIT DECK AND DRAINED THROUGH SCUPPERS - SCUPPERS WERE PLUGGED

RON SURVEYED AREA NO OIL ESCAPED ⇒ SAID CREW DID GOOD JOB - BARGE CREW GOT ON IT

HOWARD OLSON PUT 1½ METAL BARS ALONG BOTTOM OF SCUPPERS AFTER LAST SPILL BUT NOT SEALED AT BOTTOM EDGE ⇒ ALLOWED ~~OIL~~ FUEL TO PASS UNDERNEATH

SOUNDED TANK PRIOR + HAD ROOM FOR 35K ⇒ HAD ≈4K LEFT IN TANK WHEN BURPED ⇒ CREW SAID STILL 1½ FOOT LEFT IN TANK

- WERE SWITCHING BETWEEN TANKS ON FLY DURING FUELING

- CREW SOUNDING TANKS

CLEANED UP MOST OF SPILL V. QUICKLY - ONLY SILVERY SHEEN LEFT WHEN WE ARRIVED @ 1515

LOADING @ 15K/HR BECAUSE OF SPILLS BUT NORMALLY LOAD AT 18K/HR ⇒ REQUESTED 17K BUT DAVE LEFT IT AT 15K

COP0014946

TOSCO DISTRIBUTION COMPANY

PRELIMINARY INCIDENT INFORMATION

(Due within 24 hrs. of the incident)

Directions: From the menu bar at the top of this screen select "Tools" then "Protect Document". Protect Document for "Forms" and click on the "OK" button. Use the TAB key or your mouse to move to the next field (Shift + TAB to move to the previous field). Use your mouse to check/uncheck the check boxes. (Press F1 for Help)

Date Prepared **12/11/99**

Time Prepared **1700 hrs**

Business Unit/Facility
Portland Terminal

Date Of Occurrence **12/11/99**

Time Of Occurrence **1410 hrs.**

(Check one)

☐ Major Incident* ☐ Serious Incident* ☒ Minor Incident*

(Check all that apply)

☐ Fatality ☐ Injury ☐ Occupational Illness

☒ Spill/Leak/Release ☒ Environmental Impact ☐ Product Mix/Contamination

☐ Fire/Explosion ☐ Motor Vehicle Accident ☐ Property Damage/Loss/Theft

☒ Loss of Process ☐ Significant Media Coverage

☐ Other (Describe)

(Check all that apply)

☒ Employee ☐ Contractor ☒ Customer/ General Public

LOSS (Describe nature and extent of injury, damage, or potential loss):
Ten galllons diesel #2 in the water and two gallons on the deck.

DESCRIPTION (Describe the accident/incident--who, what, when, where, how, why. Attach any photos / sketches):
At 1410 hrs the Foss Tug Howard Olson over filled their tank while fueling at the Portland Dock.

PREVENTION (Immediate actions taken to prevent recurrence):
Stopped fueling, deployed absorbent sweeps and pads to contain spill. All product was contained, decision was made not to deploy boom. Both the Tosco response boat and Foss response boat went down river to check for product. None was found.

PROVISIONS FOR INCIDENT INVESTIGATION (Team members, etc.):
none

Prepared by: **Vito DeBellis** Title: **Supervisor of Operations** Date: **12/11/99**

AOC 0922

CORRESP.

TOSCO REFINING COMPANY
DISTRIBUTION WEST AND 76 PRODUCTS COMPANY
PRELIMINARY INCIDENT NOTIFICATION (PIN) FORM
(Due within 8 hours of the incident)

Directions: To complete this form electronically, select "Tools" from the menu bar at the top of this screen, then "Protect Document", "Protect Document for Forms" and click on the "OK" button. Use the TAB key or your mouse to move to the next field (Shift + TAB to move to the previous field). Use your mouse to check/uncheck the check boxes.

Date Prepared **12/22/99**

Time Prepared **1230 hours**

Business Unit/Facility
Portland Terminal

Date and Time Of Occurrence **12/22/99 0800 hours**

(Check one)

☐ Serious Accident	Fatality, hospitalization of employee, lost workday case, injury/spill reportable to government agency, significant media coverage, significant threat to public/environment, citation/NOV, potential loss ≥$10,000.
☒ Minor Accident	Restricted workday or medical treatment case, first aid case, spill/incident not reportable to government agency, minor vehicle accident (no injury), potential loss <$10,000.
☐ Other Incident (Near Miss)	Events that, under slightly different circumstances, could have reasonably resulted in a serious or minor accident, as described above.

(Check all that apply)

☐ Fatality	☐ Injury	☐ Occupational Illness
☒ Spill/Leak/Release	☒ Environmental Impact	☐ Product Mix/Contamination
☐ Fire/Explosion	☐ Motor Vehicle Accident	☐ Property Damage/Loss/Theft
☐ Loss of Process	☐ Significant Media Coverage	
☐ Other (Describe)		

(Check all that apply)

☒ Employee	☐ Contractor	☐ Customer / General Public

DESCRIPTION (Describe the accident/incident--who, what, when, where, how, why. Attach any photos / sketches):
Jim Teske the Head Operator on duty, noticed approximately 3 gallons of black oil on the ground under the piping in Tank Farm #1 while walking through the area. No visible leaks could be seen and we do not know how or where the oil came from.

CORRECTIVE ACTION TAKEN (Describe immediate action taken):
Vito DeBellis, Marty Cramer HES person on site, John Sherman and Roger Mcgowane were notified. After a thorough investigation by everyone involved we still have no answers to how the oil got there. The oil was cleaned up along with the stained soil and the area will be monitored for any reoccurrence. Since the oil was under 42 gallons no governmental agencies were notified.

INVESTIGATION LEADER: **Vito DeBellis**

Phone Number: **503-248-1572**

Prepared by: **Vito DeBellis** Title: **Superviosor of Operations** Date: **12/22/99**

TOSCO

Cramer, Marty:

From: DeBellis, Vito:
Sent: Thursday, December 23, 1999 9:42 AM
To: Caddell, Steve:; Silva, Larry:; Sherman, John:; Cramer, Marty:; Matthews, Sandy:; Gilfillan, Shawn:
Subject: Incident on 12/22/99

After talking to all the operators I found out that we took a power hit on 12/15/99 during a rain storm that knocked out our boilers, Diamond 2, transfer pumps and process separator. Before the operators got to the seperator the drains had backed up. At that time they checked and only saw water on the ground. I think that the three gallons of oil came up with water from one of the drains and flowed on top of the water to the low spot underneath the pipes and was not noticed until 12/22/99.

We will continue to monitor this area in case the above scenario is not true and the oil is coming from another source.

Thank you
Vito DeBellis
Office # 503-248-1572
Pager #503-870-3587

Memorandum

TOSCO

December 28, 1999

To: File

From: Marty Cramer

cc:

Subject: **Black Oil Spill on 12/22/99**

Following notification of the black oil spill in Tank Farm 1 near tank 2783, I inspected the area and found puddles of black oil approximately 0.5 to 1.0 inch thick beneath the nearby pipe rack and spots of black stained soil along the sides of the trench beneath the pipe rack. The theory that the separator had backed up a few days before and deposited the oil doesn't seem plausible as there should have been a ring around the flooded area and the concrete containment where the drains are located should have had oil in the containment area as well but didn't. There was no visible source of the oil and when the oil was shoveled up there was clean dirt just about 0.25 to 0.5 inches beneath the oil so it did not appear to be oozing up from below.

The oil and stained soil was removed with the exception of a few spots of staining here and there particularly over by the concrete containment area. The oil and dirt have been contained in 3 drums currently situated along side the pipe rack.

IT Corporation
15055 SW Sequoia Parkway, Suite 140
Portland, OR 97224-7155
Tel. 503.624.7200
Fax. 503.620.7658

A Member of The IT Group

March 10, 2000
Project B15099.2A

Ms. Jill Kiernan, P.E.
Waste Management and Cleanup
Oregon Department of Environmental Quality
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97204

Re: Fourth Quarter (October - December 1999) Report
RI/FS Interim Action
Willbridge Bulk Fuel Facilities
Portland, Oregon
Consent Order WMCSR-NWR-94-06

Dear Ms. Kiernan:

IT Corporation is pleased to present the fourth quarter 1999 progress report for the remedial investigation/feasibility study (RI/FS) work being performed at the Chevron, GATX, and Tosco terminals which compose the Willbridge Bulk Fuel Facilities (Willbridge Facility) in Portland, Oregon (Figure 1). This letter presents a summary of the following:

- Fourth Quarter 1999 sampling, test results, and other data generated between October and December 1999.

This progress report fulfills the requirement of Section 7F of Oregon Department of Environmental Quality (DEQ) Consent Order WMCSR-NWR-94-06.

ACTIVITIES PERFORMED DURING FOURTH QUARTER 1999

The following work was performed during October through December 1999:

- Performed quarterly groundwater sampling at the Chevron, GATX, and Tosco terminals. The groundwater sampling procedure is presented as Attachment A.
- Performed monthly separate-phase hydrocarbon (SPH) removal from wells located on the Chevron, GATX, and Tosco terminals.

COP0014951

FOURTH QUARTER 1999 MONITORING ANALYSIS

Interim action monitoring activities performed during the fourth quarter included depth to groundwater and SPH thickness measurements for all wells, and groundwater sampling from selected wells.

Hydrogeological Analysis

Depth to groundwater measurements were performed in November 1999. Measurements were corrected for SPH where encountered. A groundwater table contour map using the November 1999 data is shown on Figure 2. The November 1999 groundwater elevation data are presented in Table 1. Water elevation and SPH recovery data for November 1999 and historic water elevation measurements are presented in Table 5.

During the fourth quarter (October to December 1999), water table elevations in the vicinity of the river and in upgradient facility wells generally remained fairly stable.

The direction of groundwater flow, inferred from the elevation contours, is generally toward the river, with a localized groundwater mound in the GATX south tank farm.

Hydrological Analysis

The Willamette River stage (measured at the Morrison Bridge river gauge and converted to City of Portland datum) ranged from a quarterly high of 15.12 feet on November 27, 1999 to a low of 4.61 feet on October 18, 1999. The river stage averaged approximately 8.61 feet between November 8 and December 7, 1999, the dates of the fourth quarter groundwater monitoring event. Precipitation and river stage data are shown on Figure 4.

Groundwater Analytical Results

Pursuant with the January 16, 1997 meeting with Jill Kiernan of the DEQ, groundwater samples were collected from selected facility monitoring wells between November 8 and December 7, 1999. The samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds by EPA Method 8020A, polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270M-SIM, and total and dissolved RCRA Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by EPA 6000/7000 Series Methods. The groundwater sampling protocol is presented as Attachment A.

The November - December 1999 BTEX results are presented in Table 2. The November - December 1999 PAH results are presented in Table 3. The metals results are presented in Tables 4A and 4B. Certified analytical results for the November - December 1999 sampling event are presented as Attachment A. Samples were not collected from wells containing SPH (as designated by NS/F in the tables).

Separate-Phase Hydrocarbon Analysis

Apparent SPH thicknesses were measured at selected wells on a monthly basis (Table 1). A map illustrating the distribution of SPH for November 1999 is shown on Figure 3.

The November 1999 SPH measurements generally indicate SPH thicknesses similar to previous quarter measurements in the riverfront area wells (Table 5). North of Front Avenue, SPH was measured in Tosco wells B-22, B-40, and EX-39. Separate-phase hydrocarbon thicknesses were also measured in wells B-20, CR-6, CR-7, and CR-10 along the perimeter of the Chevron tank farm. Separate-phase hydrocarbon thicknesses were measured in wells MW-7, MW-19, MW-23, and MW-28 within the GATX terminal.

SEPARATE-PHASE HYDROCARBON RECOVERY

Monthly manual recovery of SPH at the facility was initiated in early February 1997. Approximately 579.5 gallons of SPH have been removed to date by manual recovery methods. Approximately 5.1 gallons were manually recovered during October through December 1999. If a well has historically had a measurable amount of SPH, it was gauged during the first month of the quarter. SPH was either manually pumped from the well or a hydrocarbon absorbent sock was installed to remove SPH. Although a well may not have contained SPH during the "Willbridge wide" quarterly gauging event, it is possible that the well did contain SPH during one of the other monthly gauging events and a measurable quantity of SPH may have been removed and summarized in Table 1.

Seep and Sheen Monitoring

Containment booms currently encompass the shoreline between the Chevron and Tosco docks, and from the south edge of the Tosco dock to the southern property line (beyond the new Doane Avenue storm sewer outfall). Additionally, secondary containment booms are located inside of the first boom around the new Doane Avenue outfall pipe.

Terminal personnel monitor seeps and sheen events; significant sheens are reported to IT for further evaluation.

PROBLEMS ENCOUNTERED DURING FOURTH QUARTER 1999

On November 15, 1999 a sheen was noted within the boomed area at the outfall. Tosco notified the Coast Guard, DEQ, and the City of Portland. Grab samples from the storm sewer taken above the cutoff wall and at the outfall suggested the source was where the pipe had been previously repaired to prevent SPH seepage through a loose joint. Cowlitz Clean Sweep (Cowlitz) was contracted to inspect the pipe. On November 17, 1999, Cowlitz found a piece of the grouting used to seal the joint that appeared to have fallen out of the joint, which could have resulted in SPH seeping into the pipe. However, no sheen could be observed coming from that area, which was partially underwater. Pro Pipe has been contracted to perform a video inspection of this section of pipe and determine the best means of permanently repairing the joint.

ACTIVITIES SCHEDULED FOR FIRST QUARTER 2000 (JANUARY 2000 – MARCH 2000)

The following actions are scheduled for First Quarter 2000:

- Monthly SPH removal from identified wells.
- Gauging of water level elevations and SPH in all facility wells during the first quarter sampling event, scheduled for February 2000.

IT Corporation appreciates the opportunity to be of service. If you have any questions regarding this letter, please call.

Sincerely,

IT CORPORATION

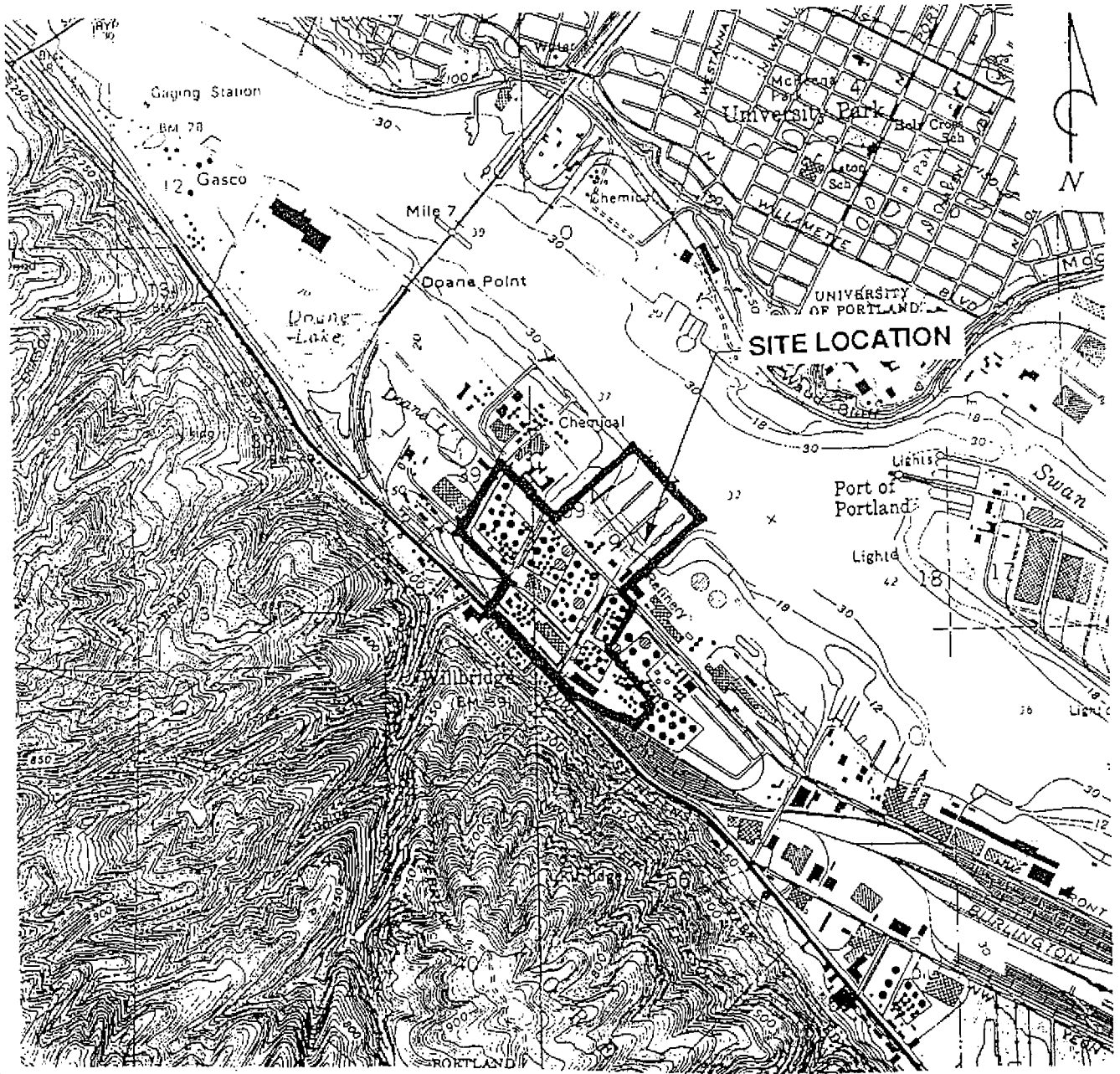
John J. Renda
Staff Geologist

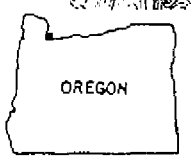
Richard S. Reis, P.E.
Project Director

Attachments: Figure 1- Site Location Map
Figure 2 - Groundwater Elevation Contour Map (November 1999)
Figure 3 - Separate-Phase Hydrocarbon Map (November 1999)

Figure 4 - Precipitation and River Stage Hydrograph (Fourth Quarter 1999)
Table 1 - Groundwater Elevation Data and SPH Recovery Data (November 1999)
Table 2 - Groundwater Analytical Results (BTEX February 1999 through December 1999)
Table 3 - Groundwater Analytical Results (PAHs February 1999 through December 1999)
Table 4A - Groundwater Analytical Results (Total Metals February 1999 through December 1999)
Table 4B - Groundwater Analytical Results (Dissolved Metals February 1999 through December 1999)
Table 5 - Groundwater Elevation and SPH Recovery Data (March 1995 to December 1999)
Attachment A - Sampling Protocol, Certified Analytical Reports and Chain-of-Custody Documentation

cc: Mr. Eric Conard, GATX Terminals Corporation
Mr. Marty Cramer, Tosco Distribution Company
Mr. Frank Fossati, Shell Oil Products Company
Mr. Gerald O'Regan, Chevron Products Company





QUADRANGLE LOCATION

REFERENCES:

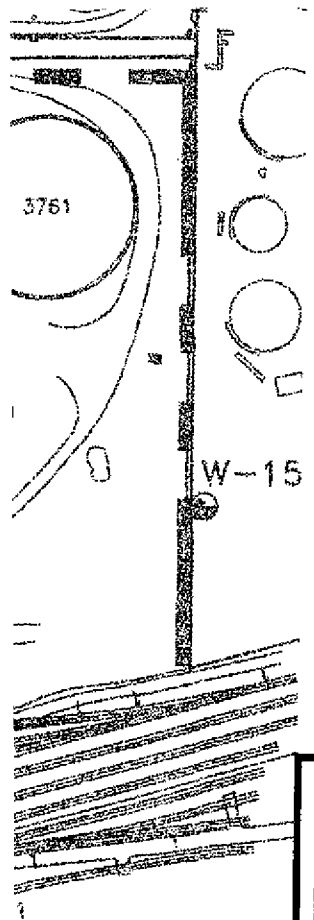
USGS 7.5 MIN TOPOGRAPHIC MAP
TITLED: PORTLAND, OREG-WASH
DATED: 1961 PHOTOREVISED: 1970-1977
TITLED: LINNTON, OREGON
DATED: 1990

SCALE IN FEET

2000 0 2000

the i group	WILLBRIDGE FACILITY Portland, Oregon	FIGURE: 1
	SITE LOCATION MAP	PROJECT: 1115-099.2A

COP0014956



SCALE

0 130 260 FEET

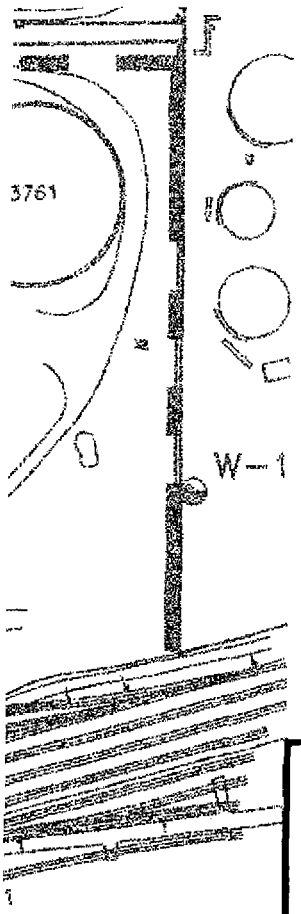
FIGURE 2

IT CORPORATION

IT CORPORATION
15055 SW Sequoia Parkway
Suite 140
Portland, Oregon 97224
(503)624-7200 Fax(503)620-7658

FOURTH QUARTER 1999 GROUNDWATER ELEVATION CONTOUR MAP

WILLBRIDGE FACILITY
QUARTERLY REPORT
PORTLAND, OREGON



0.01 SEPARATE PHASE HYDROCARBON THICKNESS IN FEET

SCALE

0 130 260 FEET

FIGURE 3

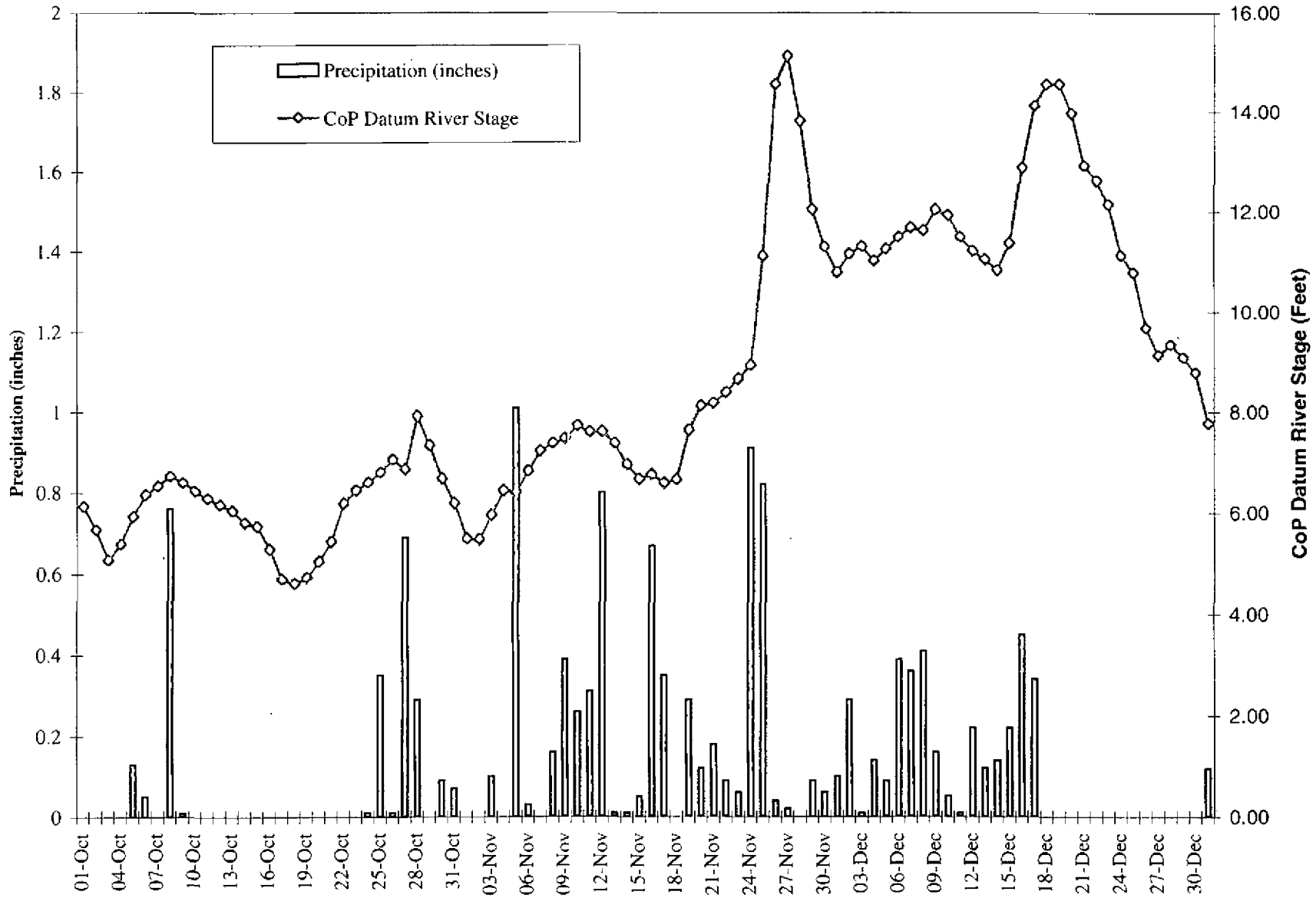
IT CORPORATION
15055 SW Sequoia Parkway
Suite 140
Portland, Oregon 97224
(503)624-7200 Fax(503)620-7658

THIRD QUARTER 1999 SEPARATE PHASE HYDROCARBON THICKNESS AUGUST, 1999

WILLBRIDGE FACILITY
PORTLAND, OREGON

Figure 4

Precipitation and River Stage Hydrograph
Fourth Quarter 1999
Willbridge Facility



J:/Remed/Jobs/Willbridge/1115099/2a/CLMT4Q99.xls/Chart4Q99

02/10/2000

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Table 1
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-7	35.73	11/9/99	NP		19.44	16.29	
B-8	34.14	11/9/99	NP		18.27	15.87	
B-9	35.57	11/9/99	NP		17.57	18	
B-10	34.76	11/9/99	NP		16.55	18.21	
B-11	34.96	11/9/99	NP		16.49	18.47	
B-12	35.14	11/9/99	NP		16.89	18.25	
B-13	34.76	11/9/99	NP		16.86	17.9	
B-14	36.59	11/9/99	NP		18.64	17.95	
B-15	35.55	11/9/99	NP		17.79	17.76	
B-19	34.17	11/9/99	NP		17.24	16.93	
B-20	33.32	11/9/99	17.56	0.60	18.16	14.65	0.15
B-21	34.79	11/9/99	NP		17.37	17.42	
B-24	34.70	11/9/99	NP		16.81	17.89	
B-26	35.3	11/9/99	NP		17.01	18.29	
B-28	35.26	11/9/99	NP		16.25	19.01	
B-29	37.7	11/9/99	NP		16.58	21.12	
B-30	35.39	11/9/99	NP		16.43	18.96	
B-31	33.86	11/9/99	NP		15.04	18.82	
B-32	34.23	11/9/99	NP		17.88	16.35	
B-33	35.90	11/9/99	NP		17.33	18.57	
CR-1	22.08	11/9/99	NP		3.61	18.47	
CR-3	34.32	11/9/99	NP		15.68	18.64	
CR-4	37.14	11/9/99	NP		3.55	33.59	
CR-6	35.61	11/9/99	13.12	0.09	13.21	22.3235	0.1

COP0014960

Table 1 (cont)
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-7	35.57	11/9/99	11.44	0.01	11.45	24.1115	0.01
CR-8	33.14	11/9/99	NP		7.42	25.72	
CR-9	35.72	11/9/99	NP		4.29	31.43	
CR-10	35.57	11/9/99	6.49	0.65	7.14	27.8775	0.5
CR-11	34.43	11/9/99	NP		4.86	29.57	
EX-1	34.15	11/9/99	NP		16.80	17.35	

COP0014961

Table 1 (cont)
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-1	35.43	11/8/99	NP		7.28	28.15	
MW-2	35.77	11/8/99	NP		9.42	26.35	
MW-3	36.02	11/8/99	NP		10.50	25.52	
MW-4	36.39	11/8/99	NP		10.09	26.3	
MW-5	33.52	11/8/99	NP		8.96	24.56	
MW-6	33.34	11/8/99	NP		7.38	25.96	
MW-7	34.12	11/8/99	10.58	0.26	10.84	23.059	1.2
MW-8	33.95	11/8/99	NP		10.09	23.86	
MW-9	36.53	11/8/99	NP		12.12	24.41	
MW-10	35.82	11/8/99	NP		12.07	23.75	
MW-11	36.47	11/8/99	NP		7.75	28.72	
MW-12	35.95	11/8/99	NP		9.40	26.55	
MW-13	37.89	11/8/99	NP		6.92	30.97	
MW-14	36.28	11/8/99	NP		6.54	29.74	
MW-15	37.5	11/8/99	NP		8.58	28.92	
MW-16	34.93	11/8/99	NP		7.76	27.17	
MW-17	36.05	11/8/99	NP		6.24	29.81	
MW-18	33.76	11/8/99	NP		4.18	29.58	
MW-19	33.39	11/8/99	6.13	0.11	6.24	27.0565	0.1
MW-20	34.76	11/8/99	NP		11.95	22.81	
MW-21	34.33	11/8/99	NP		2.36	31.97	
MW-22	35.65	11/8/99	NP		6.49	29.16	
MW-23	36.06	11/8/99	5.27	0.38	5.65	30.087	0.06
MW-24	35.15	11/8/99	NP		8.59	26.56	

COP0014962

Table 1 (cont)
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-25	34.73	11/8/99	NP		12.42	22.31	
MW-26	34.78	11/8/99	NP		12.75	22.03	
MW-27	35.69	11/8/99	NP		5.82	29.87	
MW-28	34.39	11/8/99	13.05	0.13	13.18	21.0995	0.2
MW-29	35.77	11/8/99	NP		14.92	20.85	
MW-30	36.39	11/8/99	NP		7.45	28.94	
MW-31	35.66	11/8/99	NP		8.93	26.73	
MW-32	37.01	11/8/99	NP		6.72	30.29	
MW-33		11/8/99	NP		20.99		
MW-34	39.67	11/8/99	NP		20.41	19.26	
MW-35	33.39	11/8/99	NP		5.88	27.51	
MW-36	34.88	11/8/99	NP		15.74	19.14	
MW-37	34.86	11/8/99	NP		16.27	18.59	
MW-38	37.5	11/8/99	NP		8.79	28.71	
MW-39	35.02	11/8/99	NP		14.54	20.48	
MW-40	33.65	11/8/99	NP		15.09	18.56	

COP0014963

Table 1 (cont)
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-1	34.68	11/11/99	NP		17.69	16.99	
B-2	35.35	11/11/99	NP		17.86	17.49	
B-3	34.81	11/11/99	NP		19.15	15.66	
B-4	34.7	11/11/99	NP		18.41	16.29	
B-5	34.83	11/11/99	NP		17.29	17.54	
B-6	35.49	11/11/99	NP		17.7	17.79	
B-16	35.82	11/11/99	NP		18.06	17.76	
B-17	35.61	11/11/99	NP		17.95	17.66	
B-18	35.49	11/11/99	NP		19.27	16.22	
B-22	35.83	11/11/99	18.85	0.07	18.92	16.8505	
B-25	35.78	11/11/99	NP		19.31	16.47	
B-27	35.74	11/11/99	NP		18.53	17.21	
B-35	33.56	11/11/99	NP		16.57	16.99	
B-36	31.02	11/11/99	NP		15.40	15.62	
B-37	35.83	11/11/99	NP		19.89	15.94	
B-40	34.7	11/11/99	18.36	1.03	19.39	14.4345	1.25
B-41	34.63	11/11/99	NP		18.64	15.99	
DW-1	35.93	11/11/99	NP		19.67	16.26	
DW-2	36.05	11/11/99	NP		19.76	16.29	
EX-39	33.09	11/11/99	18.02	0.83	18.85	13.5345	1.5
IF-1		11/11/99	NP		20.30		
IF-2		11/11/99	NP		20.32		
IT-E	36.07	11/11/99	NP		19.92	16.15	
IT-W	35.99	11/11/99	NP		18.37	17.62	

COP0014964

Table 1 (cont)
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
OF-1		11/11/99	NP		19.48		
OF-2		11/11/99	NP		19.63		
P-1	18.24	11/11/99	NP		6.99	11.25	
P-2	17.85	11/11/99	NP		5.07	12.78	
RES-N	38.58	11/11/99	NP		21.75	16.83	
RES-O	36.03	11/11/99	NP		18.20	17.83	
U-2	35.02	11/11/99	NP		16.51	18.51	
U-3	35.25	11/11/99	NP		14.48	20.77	
U-4	34.46	11/11/99	NP		16.81	17.65	
U-5	34.13	11/11/99	NP		19.10	15.03	
U-5A	33.77	11/11/99	NP		9.08	24.69	
					Total SPH Recovered this Quarter:		5.07

Notes:
SPH = Separate Phase Hydrocarbon
NP = No product observed this gauging date
NA = Not available
NM = Not measured
* = Groundwater elevation is corrected for the presence of SPH using:
GWE=TOC-(DTW-(SPH thickness x Specific gravity of SPH))
Specific Gravity of SPH set to 0.85 g/cc
** = SPH recovered represents total product recovered for entire quarter

Wells Surveyed Dec. 1998:

B-1	B-12	B-35	U-5
B-3	B-17	B-36	IT-E
B-4	B-18	B-37	MW-27
B-6	B-20	B-40	MW-31
B-8	B-21	B-41	
B-9	B-25	DW-1	
B-10	B-28	P-1	
B-11	B-30	P-2	

COP0014965

Table 2
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
			Chevron		
B-7	8/26/99	0.285	1.49	0.272	0.44
B-7	11/18/99	0.559	0.323	0.484	0.291
B-9	2/25/99	ND	ND	ND	ND
B-9	5/21/99	ND	ND	ND	ND
B-9	11/21/99	1.02	ND	0.748	ND
B-10	5/21/99	4.58	2.07	4.65	5.97
B-10	8/30/99	4.63	11.9	2.93	14.9
B-10	11/18/99	6.31	4.37	3.68	8.49
B-11	2/25/99	87.5	6.4	6.81	12.8
B-11	5/21/99	55.6	2.08	5.53	8.67
B-11	8/27/99	9.16	0.382	3.7	3.2
B-11	11/18/99	12.6	2.34	4.65	11.8
B-14	2/25/99	754	378	53.3	128
B-14	5/21/99	900	441	37.3	97.5
B-14	8/26/99	170	89.8	12.3	17
B-14	11/18/99	135	60.1	23	21.3
B-28	2/25/99	ND	ND	ND	ND
B-28	5/20/99	ND	ND	ND	ND
B-28	8/27/99	ND	ND	ND	ND
B-28	11/18/99	ND	0.34	ND	0.708
B-30	2/25/99	76.4	3.07	8.96	17.1
B-30	5/21/99	84.9	1.53	7.31	10.4
B-30	8/27/99	55.1	0.385	3.32	4.85
B-30	11/18/99	16.2	ND	2.06	3.7
CR-8	2/25/99	ND	ND	ND	ND
CR-8	5/20/99	ND	ND	ND	ND
CR-8	8/27/99	ND	ND	ND	ND
CR-8	11/18/99	3.33	1.95	3.75	2.97
CR-9	2/25/99	ND	ND	ND	ND
CR-9	5/20/99	ND	ND	ND	ND
CR-9 Dup	5/20/99	ND	ND	ND	ND

COP0014966

Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
				Chevron		
CR-9		8/27/99	ND	ND	ND	ND
CR-9		11/18/99	ND	ND	ND	ND
CR-11		8/30/99	69.8	1.49	1.43	3.39
CR-11		11/18/99	36.6	2.57	5.32	1.07
CR-11	Dup	11/18/99	37.9	2.35	3.9	1.11

COP0014967

Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
			GATX		
MW-8	3/2/99	11	2.98	1.61	ND
MW-8	5/27/99	10.4	4.78	2.58	4.13
MW-8	9/2/99	22.6	52	16.2	97.1
MW-8	12/7/99	10.5	38.4	3.36	55.9
MW-10	3/2/99	8.16	ND	ND	ND
MW-10	5/27/99	2.14	ND	ND	ND
MW-10	9/2/99	1.22	ND	ND	ND
MW-10	12/7/99	1.47	0.379	0.562	1.55
MW-11	3/2/99	6990	2820	3420	12000
MW-11	5/27/99	5000	2640	2500	10400
MW-11	9/2/99	3200	2280	1120	7510
MW-11	12/7/99	5560	1760	2140	10400
MW-13	3/2/99	ND	ND	ND	ND
MW-13 Dup	3/2/99	ND	ND	ND	ND
MW-13	5/27/99	ND	ND	ND	ND
MW-13	9/2/99	ND	ND	ND	ND
MW-13	12/7/99	ND	ND	ND	ND
MW-15	3/2/99	1.23	ND	ND	ND
MW-15	5/28/99	ND	ND	ND	ND
MW-15	9/2/99	ND	ND	ND	ND
MW-15	12/7/99	ND	ND	ND	ND
MW-15 Dup	12/7/99	ND	ND	ND	ND
MW-21	3/1/99	ND	ND	ND	ND
MW-21	5/27/99	ND	ND	ND	ND
MW-21	9/1/99	ND	ND	ND	ND
MW-21	12/7/99	0.419	ND	0.789	1.02
MW-22	5/27/99	1750	4130	1930	12100
MW-22	9/1/99	1990	4630	1770	10600
MW-22	12/7/99	1840	3920	1770	10100
MW-23	3/1/99	16	35.8	6.65	57
MW-23 Dup	3/1/99	27.8	34.7	5.05	58

COP0014968

Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
			GATX		
MW-23	12/7/99	53.5	80.1	7.88	67.2
MW-26	5/28/99	1.36	4.06	1.7	10.4
MW-26	9/1/99	ND	10.6	9.09	6.34
MW-26	12/7/99	0.68	6.26	1.87	12.4
MW-28	9/1/99	1.41	3.21	0.872	2.11
MW-31	3/1/99	ND	ND	ND	ND
MW-31	5/27/99	ND	ND	ND	ND
MW-31	9/1/99	ND	ND	ND	ND
MW-31	12/7/99	0.371	0.39	0.639	0.793
MW-32	3/1/99	ND	ND	ND	ND
MW-32 Dup	3/1/99	ND	ND	ND	ND
MW-32	5/27/99	ND	ND	ND	ND
MW-32 Dup	5/27/99	ND	ND	ND	ND
MW-32	9/1/99	ND	ND	ND	ND
MW-32	12/7/99	0.312	ND	ND	1.03
MW-33	3/2/99	ND	ND	ND	ND
MW-33	5/28/99	ND	ND	ND	ND
MW-33	9/2/99	ND	ND	ND	ND
MW-33	12/7/99	ND	ND	ND	ND
MW-36	3/2/99	ND	ND	ND	ND
MW-36	5/27/99	ND	ND	ND	ND
MW-36	9/2/99	0.487	ND	ND	ND
MW-36	12/7/99	ND	ND	ND	ND
MW-37	3/1/99	17.3	ND	ND	ND
MW-37	5/26/99	208	ND	ND	ND
MW-37 Dup	5/26/99	204	ND	ND	ND
MW-37	9/2/99	1640	ND	ND	ND
MW-37	12/7/99	0.393	ND	ND	ND
MW-40	3/2/99	ND	ND	ND	ND
MW-40	5/26/99	ND	ND	ND	ND
MW-40	9/2/99	ND	ND	ND	ND

COP0014969

Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
			GATX		
MW-40	12/7/99	ND	ND	ND	ND

COP0014970

Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
			Tosco			
B-4		11/16/99	35	15.4	8.14	36.1
B-17		2/23/99	449	6.4	10.5	ND
B-17		5/19/99	357	ND	7.75	ND
B-17		11/16/99	547	10.6	16.3	13.2
B-18		2/24/99	ND	ND	ND	ND
B-18		5/19/99	ND	ND	ND	ND
B-18		11/16/99	0.555	ND	ND	22.7
B-22		5/20/99	0.972	3.4	0.758	13.6
B-22	Dup	5/20/99	ND	0.855	ND	4.96
B-25		5/19/99	ND	ND	ND	ND
B-35		2/23/99	15.9	ND	8.8	7.1
B-35	Dup	2/23/99	16.4	ND	9.1	6.9
B-35		5/19/99	59.5	ND	ND	ND
B-35		11/16/99	169	8.25	15.7	18.7
B-36		2/23/99	ND	ND	ND	ND
B-36		5/19/99	ND	ND	ND	ND
B-36		11/16/99	5.11	ND	0.959	ND
B-37		2/24/99	ND	ND	ND	ND
B-37		5/19/99	ND	ND	ND	ND
B-37		11/16/99	ND	ND	ND	ND
U-2		2/24/99	8.7	22.3	1.93	1.52
U-2		5/19/99	7.64	11.6	2.79	9.63
U-2		11/16/99	ND	ND	ND	ND
U-3		2/24/99	3160	80.5	580	465
U-3		5/19/99	1.89	ND	ND	ND
U-3		11/16/99	0.49	2.6	1.97	4.3
U-4		11/16/99	20.6	1.61	ND	6.93
U-5		2/24/99	4.16	ND	1.55	1.47
U-5		5/19/99	2.62	ND	ND	ND

COP0014971

Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
			Tosco		
U-5	11/16/99	0.382	0.139	0.398	1.05

Notes:
ppb = Parts per billion
ND = Not detected
BTEX by EPA 8020 Method

COP0014972

Table 3
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a) anthracene (ppb)	Benzo(b) fluoranthene (ppb)	Benzo(k) fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a) pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd) pyrene (ppb)	Benzo-(ghi) perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
Chevron																	
B-7	8/26/99	3.02	ND	10.4	ND	0.542	ND	7.51	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-7	11/18/99	ND	ND	19.6	ND	1.74	ND	26.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-9	2/25/99	1.26	ND	4.83	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-9	5/21/99	3.02	ND	9.89	ND	ND	ND	2.01	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-9	11/21/99	ND	ND	8.74	ND	ND	ND	1.81	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-10	5/21/99	3.81	ND	13.8	ND	2.14	1.15	16.6	ND	ND	ND	ND	1.19	ND	ND	ND	ND
B-10	8/30/99	3.79	ND	13.2	ND	1.39	0.798	17.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-10	11/18/99	ND	ND	14.8	ND	1.43	ND	11.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-11	2/25/99	ND	ND	1.36	ND	ND	ND	0.633	ND	ND	ND	ND	0.109	ND	ND	ND	ND
B-11	5/21/99	1.09	ND	1.85	ND	ND	ND	1.26	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-11	8/27/99	0.882	ND	1.58	ND	0.128	0.1	1.25	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-11	11/18/99	ND	ND	1.25	ND	ND	ND	0.97	ND	ND	ND	ND	0.121	ND	ND	ND	ND
B-14	2/25/99	ND	ND	ND	50	0.138	0.293	1.47	ND	ND	ND	ND	0.402	ND	ND	ND	ND
B-14	5/21/99	1.08	ND	2.28	16	ND	ND	2.21	ND	ND	ND	ND	1.27	ND	ND	ND	ND
B-14	8/26/99	1	ND	1.49	5.05	0.222	0.55	1.52	ND	ND	ND	ND	0.63	ND	ND	ND	ND
B-14	11/18/99	1.4	ND	2.11	12.4	0.179	0.41	1.53	ND	ND	ND	ND	0.48	ND	ND	ND	ND

COP0014973

Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
Chevron																	
B-24	11/18/99	ND	ND	16.3	ND	2.64	2.74	17.6	ND	ND	ND	ND	4.15	ND	ND	ND	ND
B-28	2/25/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-28	5/20/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-28	8/27/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-28	11/18/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-30	2/25/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-30	5/21/99	0.196	ND	0.264	ND	ND	ND	0.172	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-30	8/27/99	ND	ND	ND	ND	ND	0.0589	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-30	11/18/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-4	11/18/99	0.488	ND	0.494	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-8	2/25/99	ND	ND	ND	ND	ND	0.1	ND	ND	0.168	0.222	0.115	0.203	0.33	ND	0.257	0.442
CR-8	5/20/99	ND	ND	ND	ND	ND	1.25	ND	0.726	1.39	1.28	0.958	1.67	2.29	ND	1.74	2.6
CR-8	8/27/99	ND	0.176	ND	ND	0.0711	0.254	ND	0.0617	0.245	0.129	0.21	0.379	0.385	ND	0.324	0.515
CR-8	11/18/99	ND	ND	0.0887	ND	0.238	0.0613	ND	ND	ND	ND	0.0575	0.29	ND	ND	ND	ND
CR-9	2/25/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-9	5/20/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

COP0014974

Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
Chevron																	
CR-9 Du	5/20/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-9	8/27/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-9	11/18/99	ND	ND	ND	ND	0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0528
CR-11	8/30/99	2.75	ND	5.42	ND	0.534	ND	4.28	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-11	11/18/99	ND	ND	0.524	ND	0.0733	ND	0.167	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-11 Du	11/18/99	ND	ND	ND	ND	0.0896	ND	0.202	ND	ND	ND	ND	ND	ND	ND	ND	ND

COP0014975

Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a) anthracene (ppb)	Benzo(b) fluoranthene (ppb)	Benzo(k) fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a) pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd) pyrene (ppb)	Benzo-(ghi) perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
							GATX										
MW-8	3/2/99	ND	ND	ND	4.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-8	5/27/99	ND	ND	ND	1.88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-8	9/2/99	2.29	ND	0.981	ND	ND	0.991	1.08	ND	ND	ND	ND	0.623	ND	ND	ND	ND
MW-8	12/7/99	0.0528	ND	ND	3.55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	3/2/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	5/27/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	9/2/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.115	ND	ND	ND	0.0689
MW-10	12/7/99	0.0613	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	3/2/99	ND	ND	0.179	466	ND	ND	0.138	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	5/27/99	ND	ND	ND	421	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	9/2/99	ND	ND	ND	393	0.0755	ND	0.184	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	12/7/99	ND	ND	ND	697	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	3/2/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13 Du	3/2/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	5/27/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	9/2/99	ND	ND	ND	0.201	0.0509	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	12/7/99	ND	ND	ND	ND	0.0689	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

COP0014976

Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
							GATX										
MW-15	3/2/99	0.114	ND	0.125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	5/28/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	9/2/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	12/7/99	ND	ND	ND	0.0604	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15 Du	12/7/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-21	3/1/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-21	5/27/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-21	9/1/99	ND	ND	ND	ND	0.0619	0.0543	ND	ND	ND	ND	0.0552	0.0505	ND	ND	ND	0.0514
MW-21	12/7/99	ND	ND	ND	0.0651	0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	5/27/99	ND	ND	ND	201	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	9/1/99	ND	ND	ND	347	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	12/7/99	ND	ND	ND	306	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-23	3/1/99	1.41	ND	3.29	ND	ND	ND	1.77	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-23 Du	3/1/99	ND	ND	1.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-23	12/7/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-26	5/28/99	1.88	ND	1.75	3.42	ND	ND	1.02	ND	ND	ND	ND	ND	ND	ND	ND	ND

COP0014977

Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
								GATX									
MW-26	9/1/99	ND	ND	0.913	ND	ND	0.825	0.816	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-26	12/7/99	ND	ND	ND	ND	ND	0.221	ND	ND	ND	ND	ND	0.084	ND	ND	ND	ND
MW-28	9/1/99	ND	ND	11.8	ND	ND	ND	8.03	0.673	ND	ND	2.08	3.38	ND	ND	ND	ND
MW-31	3/1/99	ND	ND	0.853	ND	ND	ND	0.677	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-31	5/27/99	ND	ND	1.5	ND	ND	ND	0.626	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-31	9/1/99	ND	ND	1.31	ND	ND	ND	0.935	ND	ND	ND	0.0757	0.38	ND	ND	ND	ND
MW-31	12/7/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-32	3/1/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-32 Du	3/1/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-32	5/27/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-32 Du	5/27/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-32	9/1/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-32	12/7/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-33	3/2/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-33	5/28/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-33	9/2/99	ND	ND	ND	0.0528	ND	ND	ND	ND	ND	ND	ND	0.0528	ND	ND	ND	ND
MW-33	12/7/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

COP0014978

Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a) anthracene (ppb)	Benzo(b) fluoranthene (ppb)	Benzo(k) fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a) pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd) pyrene (ppb)	Benzo-(ghi) perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
							GATX										
MW-36	3/2/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-36	5/27/99	0.163	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-36	9/2/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.113	ND	ND	ND	ND
MW-36	12/7/99	0.0519	ND	ND	ND	ND	0.0509	0.0585	ND	ND	ND	ND	0.0547	ND	ND	ND	ND
MW-37	3/1/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-37	5/26/99	ND	ND	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-37 Du	5/26/99	ND	ND	1.76	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-37	9/2/99	ND	ND	ND	ND	ND	ND	ND	0.111	0.0775	0.0961	0.154	0.315	0.127	ND	0.0941	0.105
MW-37	12/7/99	ND	ND	ND	ND	ND	0.0689	ND	ND	ND	ND	ND	0.121	ND	ND	ND	ND
MW-40	3/2/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-40	5/26/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-40	9/2/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-40	12/7/99	0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

COP0014979

Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
Tosco																	
B-4	11/16/99	ND	ND	10.4	ND	1.6	1.42	15.7	ND	ND	ND	ND	1.42	ND	ND	ND	ND
B-17	2/23/99	4.03	ND	12.8	ND	ND	ND	9.85	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-17	5/19/99	2.9	ND	9.77	ND	ND	ND	9.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-17	11/16/99	ND	ND	11.9	ND	ND	ND	8.07	ND	ND	ND	ND	0.433	ND	ND	ND	ND
B-18	2/24/99	ND	ND	2.22	ND	ND	ND	2.44	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-18	5/19/99	2.76	ND	6.86	ND	ND	ND	6.79	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-18	11/16/99	ND	ND	ND	ND	ND	ND	2.74	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-22	5/20/99	4.07	ND	8.67	4.27	1.22	ND	12.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-22 Du	5/20/99	ND	ND	25.7	ND	6.46	ND	48.2	ND	ND	ND	ND	3.42	ND	ND	ND	ND
B-25	5/19/99	0.144	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-35	2/23/99	38.1	ND	127	ND	32.7	120	279	24	6.43	8.25	21.3	78.5	5.68	ND	ND	ND
B-35 Du	2/23/99	49.5	ND	168	ND	49	154	365	28	8.5	8.6	24.8	88.3	6.83	ND	ND	ND
B-35	5/19/99	8.94	ND	19	6.93	3.84	11.2	27.6	2.64	ND	ND	ND	7.38	ND	ND	ND	ND
B-35	11/16/99	ND	ND	50	ND	ND	24.7	91.7	3.87	0.991	0.772	3.56	15.7	0.692	ND	ND	ND
B-36	2/23/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

COP0014980

Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
								Tosco									
B-36	5/19/99	0.119	ND	0.189	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-36	11/16/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-37	2/24/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-37	5/19/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-37	11/16/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-2	2/24/99	0.401	ND	0.452	4.47	ND	ND	0.187	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-2	5/19/99	0.345	ND	0.897	6.55	ND	0.163	0.161	ND	ND	ND	ND	0.182	ND	ND	ND	ND
U-2	11/16/99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-3	2/24/99	ND	ND	ND	8.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-3	5/19/99	0.102	ND	0.108	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-3	11/16/99	0.35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-4	11/16/99	ND	ND	7.92	ND	ND	ND	7.42	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-5	2/24/99	ND	ND	2.45	ND	ND	ND	1.27	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-5	5/19/99	0.968	ND	2.09	ND	ND	ND	0.478	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-5	11/16/99	ND	ND	2	ND	ND	ND	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND

COP0014981

Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a) anthracene (ppb)	Benzo(b) fluoranthene (ppb)	Benzo(k) fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a) pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd) pyrene (ppb)	Benzo-(ghi) perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6

Notes:
ppb = Parts per billion
ND = Not detected
NS = Not sampled
NS/F = Not sampled, floating product present
PAH by EPA Method 8270 SIM since 1st Quarter 1997
PAH by EPA Method 8310 before 1st Quarter 1997 and for 3rd Quarter 1997

COP0014982

Table 4a
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Chevron						
B-7		8/26/99	24.2	144	0.46	21.1	12.5	5.08	0.149	ND	0.21	37.4
B-7		11/18/99	19.8	68.2	ND	2.2	ND	ND	ND	1.4	ND	2.6
B-9		2/25/99	21.3	74	1.8		5.5	13.3	ND	ND	ND	
B-9		5/21/99	3.9	48.1	2.1		2.1	1.9	ND	ND	ND	
B-9		11/21/99	22.3	131	1.63	28.1	15.2	8.5	ND	ND	ND	53.8
B-10		5/21/99	32.1	79.9	ND		3	3	ND	ND	ND	
B-10		8/30/99	33.4	228	0.48	42.9	28.6	13.8	ND	ND	0.21	69.2
B-10		11/18/99	25.1	125	1.2	29.2	12.2	25.2	ND	ND	ND	56.9
B-10	Duplicate	11/18/99							ND			
B-11		2/25/99	26.5	118	1.9		7.2	6.8	ND	ND	ND	
B-11		5/21/99	39.5	188	2.4		17.9	15	ND	ND	ND	
B-11		8/27/99	26.3	228	1.22	36.3	28.2	15.2	0.299	ND	0.2	67.2
B-11		11/18/99	21.6	59.1	2.8	3.4	1.3	1.6	ND	ND	ND	9.2
B-14		2/25/99	33.1	84.5	ND		2.2	9.3	0.22	1	ND	
B-14		5/21/99	34.9	116	ND		7.1	10.8	ND	ND	ND	

COP0014983

Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Chevron						
B-14	Duplicate	5/21/99	36	121	ND		7.9	11.3	ND	ND	ND	
B-14		8/26/99	29.2	102	ND	12.9	8.09	6.15	0.112	ND	0.18	18.3
B-14		11/18/99	29.7	160	ND	21.3	13.9	13.8	ND	ND	ND	40.3
B-28		2/25/99	6.1	222	3		23.9	37.7	ND	2.19	ND	
B-28		5/20/99	9.8	198	ND		16.1	15.6	ND	ND	ND	
B-28		8/27/99	8.45	190	0.48	28.3	17.3	11.8	0.21	ND	0.23	58
B-28	Duplicate	8/27/99							0.212			
B-28		11/18/99				139						214
B-28		11/18/99	9.3	573	5.9		39.5	76.3	0.142	ND	ND	
B-30		2/25/99	19.7	85.6	54.8		5.1	33.1	ND	ND	ND	
B-30		5/21/99	14.2	59.9	7.7		ND	3.6	ND	ND	ND	
B-30		8/27/99	16.3	125	15.7	37.4	10.1	33.8	1.79	ND	0.26	104
B-30		11/18/99				52						211
B-30		11/18/99	9.3	173	28.7		11.6	77	0.086	ND	ND	
CR-8		2/25/99	13.2	53.4	1.4		1.9	4.1	ND	1	ND	
CR-8		5/20/99	18.2	91.9	1.3		5.8	11.6	ND	ND	ND	
CR-8	Duplicate	5/20/99							ND			

COP0014984

Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Chevron						
CR-8		8/27/99	72.6	863	5.4	180	76.9	84.2	0.538	ND	1.15	456
CR-8		11/18/99	36.2	126	1.5	18.5	7.7	17.2	ND	ND	ND	61.3
CR-9		2/25/99	ND	21.5	ND		ND	ND	ND	ND	ND	
CR-9		5/20/99	ND	16.1	ND		ND	ND	ND	ND	ND	
CR-9	Duplicate	5/20/99	ND	16.4	ND		ND	ND	ND	ND	ND	
CR-9		8/27/99	27	185	0.33	16.6	12.5	8.71	0.18	ND	0.29	45.3
CR-9		11/18/99	2.4	27	ND	2.1	ND	1.2	ND	ND	ND	11.8
CR-11		8/30/99	93.4	1190	78.9	226	109	116	1.29	ND	1.45	541
CR-11		11/18/99	13.4	41.5	5.7	6	1.9	6.1	ND	ND	ND	24.8
CR-11	Duplicate	11/18/99	13.6	42.5	4.9	6	1.9	6.1	ND	ND	ND	24.4

COP0014985

Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						GATX						
MW-8		3/2/99	2.2	27.5	ND		ND	ND	ND	ND	ND	
MW-8		5/27/99	14.9	115	3.6		1.5	2.4	ND	ND	ND	
MW-8		9/2/99	11.8	263	2.2	21.1	29	28.4	ND	0.86	0.68	125
MW-8		12/7/99	4.58	25.4	1.31	2.53	2.17	2.33	ND	ND	ND	144
MW-10		3/2/99	7.3	48.8	ND		1.1	ND	ND	ND	ND	
MW-10		5/27/99	21.7	117	ND		3.1	3.7	ND	ND	ND	
MW-10		9/2/99	32.2	656	0.21	84.2	60.7	80.5	0.239	1.7	0.67	236
MW-10		12/7/99	4.45	69.5	0.14	5.36	2.58	2.77	ND	0.28	ND	11.7
MW-11		3/2/99	49.1	63.5	ND		2.1	31.9	ND	1.3	ND	
MW-11		5/27/99	55.3	133	ND		6.2	38.1	ND	ND	ND	
MW-11		9/2/99	102	1420	0.1	237	101	119	ND	3.9	1.5	632
MW-11		12/7/99	55.5	104	ND	9.61	5.2	49.3	ND	2.2	ND	34.3
MW-11	Duplicate	12/7/99	55.9	102	ND	10.1	4.72	48.5		1.31	ND	33.6
MW-13		3/2/99	2.6	74.3	ND		3.9	3.8	ND	ND	ND	
MW-13	Duplicate	3/2/99	2.4	73.3	ND		3.8	3.9	ND	ND	ND	
MW-13		5/27/99	1.9	51.9	ND		2.4	2.2	ND	ND	ND	

COP0014986

Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						GATX						
MW-13		9/2/99	73	1780	ND	221	131	108	ND	5.35	1.35	589
MW-13		12/7/99	2.63	62.7	ND	6.5	2.85	3.08	ND	ND	ND	13.4
MW-15		3/2/99	ND	48	ND		ND	ND	ND	ND	ND	
MW-15		5/28/99	ND	55.8	ND		ND	ND	ND	ND	ND	
MW-15		9/2/99	8.5	1020	1.7	121	133	56	ND	3.65	ND	383
MW-15		12/7/99	0.34	68.7	0.04	4.32	3.5	2.1	ND	ND	ND	65.1
MW-15	Duplicate	12/7/99	0.66	79.2	0.04	5.71	5.76	2.39	ND	ND	ND	40.2
MW-21		3/1/99	1.7	142	ND		ND	ND	ND	ND	1.8	
MW-21		5/27/99	5.8	222	2.3		1.2	4.4	ND	ND	ND	
MW-21		9/1/99	6.5	359	13.5	27.5	23.9	27.8	ND	0.51	0.29	180
MW-21	Duplicate	9/1/99	6.6	360	13.5	29.9	24.8	28.3		0.4	0.26	190
MW-21		12/7/99	1.15	101	2.09	3.82	1.01	5.63	ND	ND	ND	23
MW-22		5/27/99	102	174	ND		1.4	11.8	ND	ND	ND	
MW-22		9/1/99	90.6	238	0.39	12.1	12.5	22.7	ND	ND	0.31	52
MW-22		12/7/99	92.1	186	ND	3.96	2.8	11.6	ND	0.93	ND	14.8
MW-23		3/1/99	2.6	11.1	ND		1	1.6	ND	ND	ND	

COP0014987

Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						GATX						
MW-23	Duplicate	3/1/99	1.2	9.9	ND		ND	1.3	ND	ND	ND	
MW-23		12/7/99	3.56	18.8	ND	1.22	0.16	1.69	ND	ND	ND	ND
MW-26		5/28/99	38.2	54.1	1		ND	2	ND	ND	ND	
MW-26	Duplicate	5/28/99	42.9	60.5	1		ND	2		ND	ND	
MW-26		9/1/99	49.6	169	0.64	14.5	12.7	21.2	ND	ND	0.21	70
MW-26		12/7/99	34.3	59.6	0.05	1.27	0.47	2.27	ND	ND	ND	1.27
MW-28		9/1/99	2.2	42.2	0.59	34.8	3.2	23.6	ND	0.42	0.43	52.5
MW-31		3/1/99	5.1	22.8	ND		ND	ND	ND	ND	ND	
MW-31		5/27/99	6.8	22.7	ND		ND	ND	ND	ND	ND	
MW-31		9/1/99	19.1	38.1	0.28	8	3.2	3.9	ND	0.45	0.14	24
MW-31		12/7/99	1.13	8.32	ND	2.19	ND	0.1	ND	ND	ND	ND
MW-32		3/1/99	ND	3.9	ND		3.8	ND	ND	ND	ND	
MW-32	Duplicate	3/1/99	ND	4.5	ND		3.3	ND	ND	ND	ND	
MW-32		5/27/99	ND	12.1	ND		1.4	1.9	ND	ND	ND	
MW-32	Duplicate	5/27/99	ND	11	ND		1.2	ND	ND	ND	ND	
MW-32		9/1/99	ND	13.8	0.18	1.7	1	0.18	ND	ND	0.14	2.9

COP0014988

Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						GATX						
MW-32		12/7/99	ND	5.77	ND	1.22	1.66	ND	ND	ND	ND	ND
MW-33		3/2/99	7.8	74.3	ND		ND	ND	ND	ND	ND	
MW-33		5/28/99	3.9	32.6	ND		7.7	ND	ND	ND	ND	
MW-33		9/2/99	58.7	531	0.11	9.7	5.1	3.9	ND	ND	0.16	20.9
MW-33		12/7/99	0.93	37.6	ND	1.25	0.15	ND	ND	ND	ND	ND
MW-36		3/2/99	1.3	23.6	ND		ND	ND	ND	ND	ND	
MW-36		5/27/99	11.7	50.8	ND		ND	ND	ND	ND	ND	
MW-36		9/2/99	37.8	242	0.09	30.9	24.7	17.2	ND	0.39	0.19	59.5
MW-36		12/7/99	17.9	93.7	ND	10.9	5.62	5.16	ND	ND	ND	20.4
MW-37		3/1/99	34.8	58.1	ND		1.5	1.7	ND	ND	ND	
MW-37		5/26/99	22.1	46.7	ND		ND	1.4	ND	ND	ND	
MW-37	Duplicate	5/26/99	23.1	49.7	ND		ND	ND	ND	ND	ND	
MW-37		9/2/99	24	196	0.59	33.5	22.3	17	ND	ND	0.18	60.6
MW-37		12/7/99	16.8	33.8	ND	1.5	0.22	ND	ND	ND	ND	ND
MW-40		3/2/99	3.7	17.8	ND		ND	ND	ND	ND	ND	
MW-40		5/26/99	73.1	225	ND		9	15.4	ND	ND	ND	

COP0014989

Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
					GATX						
MW-40	9/2/99	45	1260	0.7	231	178	198	0.982	2.1	1.5	533
MW-40	12/7/99	12.8	73	ND	2.01	ND	ND	ND	ND	ND	ND

COP0014990

Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Tosco						
B-4		11/16/99	31.7	75.9	0.04	4.9	1.19	0.9	ND	0.53	ND	7.87
B-17		2/23/99	38.7	144	ND		8.2	14.6	ND	ND	ND	
B-17		5/19/99	61.5	112	ND		1.1	7.9	ND	ND	ND	
B-17		11/16/99	45.1	208	ND	38.7	20.9	25.5	ND	0.95	0.12	56.2
B-18		2/24/99	17.5	142	ND		9.5	10	ND	ND	ND	
B-18		5/19/99	9	145	ND		5.5	ND	ND	ND	ND	
B-18		11/16/99	9.17	105	ND	7.44	3.62	1.72	ND	ND	ND	18.8
B-22		5/20/99	20.6	76.2	ND		ND	ND	ND	ND	ND	
B-22	Duplicate	5/20/99	24.8	81.8	ND		2.7	4.2	ND	ND	ND	
B-25		5/19/99	135	76.3	ND		ND	ND	ND	ND	ND	
B-35		2/23/99	43	95.8	ND		2.9	6.4	ND	ND	1.6	
B-35	Duplicate	2/23/99	56.8	113	ND		3.7	11.9	ND	ND	ND	
B-35		5/19/99	46.6	121	ND		3	8.7	ND	ND	ND	
B-35		11/16/99	39	267	0.14	47.3	34.7	37.6	ND	0.42	0.11	129

COP0014991

Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Tosco						
B-36		2/23/99	ND	34.9	ND		2.5	ND	ND	ND	ND	
B-36		5/19/99	4.8	48.4	ND		1.8	ND	ND	ND	ND	
B-36		11/16/99	4.22	46.8	0.35	3.78	1.52	1.83	ND	10.3	0.13	10
B-36	*Duplicate*	11/16/99							*ND*			
B-37		2/24/99	260	83.6	ND		3.6	2	ND	ND	ND	
B-37		5/19/99	237	61.3	ND		ND	ND	ND	ND	ND	
B-37		11/16/99	592	41.9	0.04	1.88	0.46	0.24	ND	1.5	ND	2.58
U-2		2/24/99	19.1	43.2	ND		2.4	2.1	ND	ND	ND	
U-2		5/19/99	23	30.7	ND		ND	ND	ND	ND	ND	
U-2		11/16/99	17.4	35.1	0.06	4.96	1.19	1.22	ND	0.35	ND	13
U-3		2/24/99	7.2	37.6	ND		5.1	11.6	ND	ND	ND	
U-3		5/19/99	36.7	156	ND		12.5	25.5	ND	ND	ND	
U-3		11/16/99	41.8	99	0.09	4.45	3.75	8.35	ND	1.33	ND	24.2
U-4		11/16/99	19.3	114	0.13	10.8	3.93	4.02	ND	1.26	ND	21.3
U-5		2/24/99	5.2	76.4	ND		1.5	1.7	ND	ND	ND	

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
					Tosco						
U-5	5/19/99	6	121	ND		6.3	8.2	ND	ND	ND	
U-5	11/16/99	10.1	177	2.14	62.8	15.3	29.8	ND	0.43	ND	4100

Notes:
ppb = Parts per billion
ND = Not detected
NS = Not sampled
Blank Spaces = Not analyzed
Metals by EPA 6000/7000 Series Methods

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Table 4b
Groundwater Analytical Results - Dissolved Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Chevron						
B-14		2/25/99	30.1	61.9	ND		ND	4.2	ND	ND	ND	
B-14		5/21/99	30.2	62.5	ND		ND	2.6	ND	ND	ND	
B-14	Duplicate	5/21/99	31.9	65.7	ND		ND	2.3	ND	ND	ND	
B-14		8/26/99	3.52	9.23	0.22	1.15	0.99	0.96	ND	1.04	0.26	2.6
B-14	Duplicate	8/26/99	3	8.21	0.03	1.97	0.63	0.92	ND	0.97	0.15	2.36
B-14		11/18/99	3.11	15.6	0.01	0.95	0.17	1.6	ND	ND	0.01	2.58
B-14	Duplicate	11/18/99	3.32	15.6	0.01	0.93	0.14	1.2		ND	0.02	2.1
B-30		2/25/99	18.7	41.9	ND		ND	ND	ND	ND	ND	
B-30	Duplicate	2/25/99	19	42.7	ND		ND	ND	ND	ND	ND	
B-30		5/21/99	18.7	52.2	ND		ND	ND	ND	ND	ND	
B-30		8/27/99	5.81	20.9	0.77	1.79	2	0.49	ND	2.09	0.39	8.41
B-30		11/18/99	4.73	30	0.35	1.7	0.49	ND	ND	1.1	0.09	6.81
CR-9		2/25/99	ND	13	ND		ND	ND	ND	ND	ND	
CR-9		5/20/99	ND	16.5	ND		ND	ND	ND	ND	ND	
CR-9	Duplicate	5/20/99	ND	20.3	ND		ND	ND	ND	ND	ND	
CR-9		8/27/99	0.32	24.3	0.11	1.17	0.96	0.08	ND	1.52	0.2	6.6
CR-9		11/18/99	0.09	15.3	0.28	1.81	0.46	ND	ND	0.51	0.52	6

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Table 4b (cont)
Groundwater Analytical Results - Dissolved Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						GATX						
MW-13		3/2/99	ND	27.7	ND		ND	ND	ND	ND	ND	
MW-13		5/27/99	ND	26.9	ND		ND	ND	ND	ND	ND	
MW-13		9/2/99	0.19	21.2	0.09	2.27	1	0.19	ND	ND	0.18	1.98
MW-13		12/7/99	0.23	24.3	0.03	47.4	0.13	0.4	ND	1.79	ND	12.1
MW-21		3/1/99	1.2	142	ND		ND	ND	ND	ND	1.1	
MW-21		5/27/99	3	161	ND		ND	ND	0.376	1.5	ND	
MW-21		9/1/99	0.05	59.7	0.06	1.2	0.64	0.04	ND	1.12	0.15	4.61
MW-21		12/7/99	ND	56	0.35	6.33	ND	ND	ND	0.87	0.01	9.76
MW-33		5/28/99	4	23.5	ND		ND	ND	ND	ND	ND	
MW-33	Duplicate	5/28/99	3.9	23.6	ND		ND	ND		ND	ND	
MW-33		9/2/99	0.36	26.6	0.04	1.55	0.73	0.09	ND	1.2	0.32	4.06
MW-33		12/7/99	0.24	31.4	ND	12.1	0.1	0.03	ND	0.33	0.01	5.38

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Table 4b (cont)
Groundwater Analytical Results - Dissolved Metals

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
					Tosco						
B-17	2/23/99	42.4	86.9	ND		ND	3.5	0.255	ND	ND	
B-17	5/19/99	50.3	98.5	ND		ND	3.4	ND	ND	ND	
B-17	11/16/99	4.5	33.9	ND	1.4	ND	2.3	ND		ND	2.4
U-3	2/24/99	5.6	25.2	ND		ND	ND	ND	ND	ND	
U-3	5/19/99	30.6	122	ND		ND	1.1	ND	ND	ND	
U-3	11/16/99	1.9	26.8	ND	2.2	ND	ND	ND		ND	8.8

Notes:
ppb = Parts per billion
ND = Not detected
NS = Not sampled
Blank Spaces = Not analyzed
Metals by EPA 6000/7000 Series Methods

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Table 5
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-7	33.96	3/24/95	18.07	0.00	18.07	15.89	NA
		4/24/95	18.61	0.00	18.61	15.35	NA
		5/22/95	18.56	0.00	18.56	15.4	NA
		6/19/95	18.77	0.00	18.77	15.19	NA
		7/24/95	19.74	0.00	19.74	14.22	NA
		8/28/95	20.03	0.00	20.03	13.93	NA
		9/25/95	19.79	0.01	19.80	14.1515	NA
		10/23/95	19.56	0.01	19.57	14.3815	NA
		11/27/95	18.61	0.00	18.61	15.35	NA
		12/29/95	17.74	0.00	17.74	16.22	NA
		1/22/96	15.82	0.00	15.82	18.14	NA
		2/26/96	14.09	0.04	14.13	19.796	NA
		3/25/96	17.38	0.01	17.39	16.5615	NA
		4/22/96	17.07	0.01	17.08	16.8715	NA
		5/28/96	16.46	0.00	16.46	17.5	NA
		6/24/96	17.96	0.00	17.96	16	NA
		7/22/96	18.79	0.00	18.79	15.17	NA
		8/26/96	19.18	0.00	19.18	14.78	NA
		9/23/96	19.22	0.00	19.22	14.74	NA
		10/28/96	19.10	0.00	19.10	14.86	NA
		11/25/96	17.95	0.00	17.95	16.01	NA
		1/29/97	NP		17.24	16.72	--
		4/21/97	NP		17.45	16.51	--
		7/28/97	18.60	0.10	18.70	15.175	1.0
		10/15/97	NP		18.96	15	--
		1/19/98	NP		17.85	16.11	--
		4/20/98	NP		18.69	15.27	--
		7/21/98	19.07	0.01	19.08	14.8715	0.1
		11/18/98	NP		19.39	14.57	--
		2/25/99	16.81	0.01	16.82	17.1315	
		5/18/99	NP		18.08	15.88	0.1
	35.73	8/18/99	NP		19.15	16.58	
		11/9/99	NP		19.44	16.29	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
Summary for Well B-7 (33 detail records)					SPH Recovered to Date:		1.20
B-8	35.90	1/29/97	NP		15.99	19.91	--
		4/21/97	NP		16.67	19.23	--
		7/28/97	NP		17.30	18.6	--
		10/15/97	NP		17.73	18.17	--
		1/19/98	NP		16.67	19.23	--
		4/20/98	NP		17.30	18.6	--
		7/21/98	NP		17.85	18.05	--
	34.14	11/18/98	NP		18.25	15.89	--
		2/25/99	NP		15.94	18.2	
		5/18/99	NP		16.95	17.19	
		8/18/99	NP		17.87	16.27	
		11/9/99	NP		18.27	15.87	
Summary for Well B-8 (12 detail records)					SPH Recovered to Date:		
B-9	33.95	3/24/95	NA		16.01	17.94	NA
		4/24/95	NA		16.42	17.53	NA
		5/22/95	NA		16.54	17.41	NA
		6/19/95	NA		16.59	17.36	NA
		7/24/95	NA		17.45	16.5	NA
		8/28/95	NA		17.85	16.1	NA
		9/25/95	NA		17.85	16.1	NA
		10/23/95	NA		17.45	16.5	NA
		11/27/95	NA		16.51	17.44	NA
		12/29/95	NA		15.86	18.09	NA
		1/22/96	NA		15.31	18.64	NA
		1/29/96	NP		15.31	18.64	--
		2/26/96	NA		13.20	20.75	NA
		3/25/96	NA		15.49	18.46	NA
		4/22/96	NA		15.20	18.75	NA
		5/28/96	NA		15.47	18.48	NA
		6/24/96	NA		16.09	17.86	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-9	33.95	7/22/96	NA		16.61	17.34	NA
		8/26/96	NA		17.26	16.69	NA
		9/23/96	NA		17.14	16.81	NA
		10/28/96	NA		17.21	16.74	NA
		11/25/96	NA		16.35	17.6	NA
		1/29/97	NP		15.31	18.64	--
		4/21/97	NP		15.82	18.13	--
		7/28/97	NP		16.60	17.35	--
		10/15/97	NP		17.21	16.74	--
		1/19/98	NP		16.11	17.84	--
		4/20/98	NP		16.70	17.25	--
		7/21/98	NP		17.14	16.81	--
	33.90	11/18/98	NP		17.65	16.25	--
		2/25/99	NP		15.23	18.67	
	33.9	5/20/99	NP		16.29	17.61	
	35.57	8/18/99	NP		17.23	18.34	
		11/9/99	NP		17.57	18	
Summary for Well B-9 (34 detail records)					SPH Recovered to Date:		
B-10	34.74	3/24/95	15.08	0.00	15.08	19.66	NA
		4/24/95	15.41	0.00	15.41	19.33	NA
		5/22/95	15.68	0.00	15.68	19.06	NA
		6/19/95	15.96	0.00	15.96	18.78	NA
		7/24/95	16.26	0.00	16.26	18.48	NA
		8/28/95	16.26	0.32	16.58	17.888	NA
		9/25/95	16.84	0.00	16.84	17.9	NA
		10/23/95	16.70	0.00	16.70	18.04	NA
		11/27/95	15.99	0.00	15.99	18.75	NA
		12/29/95	15.01	0.00	15.01	19.73	NA
		1/22/96	14.67	0.00	14.67	20.07	NA
		2/26/96	12.18	0.00	12.18	22.56	NA
		3/25/96	13.82	0.00	13.82	20.92	NA
		4/22/96	14.66	0.00	14.66	20.08	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-10	34.74	5/28/96	14.59	0.00	14.59	20.15	NA
		6/24/96	15.03	0.00	15.03	19.71	NA
		7/22/96	15.64	0.00	15.64	19.1	NA
		8/26/96	16.12	0.00	16.12	18.62	NA
		9/23/96	16.21	0.00	16.21	18.53	NA
		10/28/96	16.18	0.00	16.18	18.56	NA
		11/25/96	15.35	0.00	15.35	19.39	NA
		1/29/97	NP		13.80	20.94	--
		4/21/97	NP		14.85	19.89	--
		7/28/97	NP		15.43	19.31	--
		10/15/97	NP		16.12	18.62	--
		1/19/98	NP		15.07	19.67	--
		4/20/98	NP		15.38	19.36	--
		7/21/98	NP		16.04	18.7	--
	34.76	11/18/98	NP		17.59	17.17	--
		2/25/99	NP		14.94	19.82	
		5/20/99	NP		15.14	19.62	0.1
		8/18/99	NP		16.33	18.43	
		11/9/99	NP		16.55	18.21	
Summary for Well B-10 (33 detail records)					SPH Recovered to Date:		0.10
B-11	34.95	3/24/95	NA		15.22	19.73	NA
		7/24/95	NA		16.08	18.87	NA
		10/23/95	NA		16.64	18.31	NA
		1/22/96	NA		15.73	19.22	NA
		4/22/96	NA		14.44	20.51	NA
		5/28/96	NA		14.46	20.49	NA
		7/22/96	NA		15.40	19.55	NA
		8/26/96	NA		15.91	19.04	NA
		9/23/96	NA		16.08	18.87	NA
		10/28/96	NA		16.14	18.81	NA
		11/25/96	NA		15.53	19.42	NA
		1/29/97	NP		15.65	19.3	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-11	34.95	4/21/97	NP		14.67	20.28	--
		7/28/97	NP		15.33	19.62	--
		10/15/97	NP		16.05	18.9	--
		1/19/98	NP		15.15	19.8	--
		4/20/98	NP		15.16	19.79	--
		7/21/98	NP		15.80	19.15	--
	34.96	11/18/98	NP		16.56	18.4	--
		2/25/99	NP		13.81	21.15	
		5/20/99	NP		14.95	20.01	
		8/18/99	NP		15.97	18.99	
		11/9/99	NP		16.49	18.47	
Summary for Well B-11 (23 detail records)					SPH Recovered to Date:		
B-12	35.11	8/26/96	NA		16.37	18.74	NA
		9/23/96	NA		16.53	18.58	NA
		11/25/96	NA		16.07	19.04	NA
		1/29/97	NP		14.18	20.93	--
		4/21/97	NP		15.20	19.91	--
		10/15/97	NP		16.53	18.58	--
		1/19/98	NP		15.70	19.41	--
		4/20/98	NP		15.68	19.43	--
		7/21/98	NP		16.28	18.83	--
	35.14	11/18/98	NP		16.95	18.19	--
		2/25/99	NP		14.37	20.77	
		5/20/99	NP		15.41	19.73	
		8/18/99	NP		16.35	18.79	
		11/9/99	NP		16.89	18.25	
Summary for Well B-12 (14 detail records)					SPH Recovered to Date:		
B-13	34.76	8/26/96	NA		16.36	18.4	NA
		9/23/96	NA		16.51	18.25	NA
		10/28/96	NA		16.59	18.17	NA
		11/25/96	NA		16.14	18.62	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-13	34.76	1/29/97	NP		14.35	20.41	--
		4/21/97	NP		15.23	19.53	--
		7/28/97	NP		15.85	18.91	0.00
		10/15/97	NP		16.50	18.26	--
		1/19/98	NP		15.80	18.96	--
		4/20/98	NP		15.72	19.04	--
		7/21/98	NP		16.22	18.54	--
		11/18/98	NP		16.89	17.87	--
		2/25/99	NP		14.54	20.22	
		5/20/99	NP		15.47	19.29	
		8/18/99	NP		16.33	18.43	
		11/9/99	NP		16.86	17.9	
Summary for Well B-13 (16 detail records)					**SPH Recovered to Date:**		**0.00**
B-14	36.59	4/24/95	NA		17.59	19	NA
		7/24/95	NA		18.35	18.24	NA
		10/23/95	NA		18.84	17.75	NA
		1/22/96	NA		17.21	19.38	NA
		4/22/96	NA		15.80	20.79	NA
		5/28/96	NA		16.82	19.77	NA
		7/22/96	NA		17.70	18.89	NA
		8/26/96	NA		18.15	18.44	NA
		9/23/96	NA		18.31	18.28	NA
		10/28/96	NA		18.40	18.19	NA
		11/25/96	NA		17.94	18.65	NA
		1/29/97	NP		16.05	20.54	--
		4/21/97	NP		17.03	19.56	--
		7/28/97	NP		17.63	18.96	--
		10/15/97	NP		18.31	18.28	--
		1/19/98	NP		17.61	18.98	--
		4/20/98	NP		17.52	19.07	--
		7/21/98	NP		18.06	18.53	--
		11/18/98	NP		18.70	17.89	--

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-14	36.59	2/25/99	NP		16.33	20.26	
		5/20/99	NP		17.27	19.32	
		8/18/99	NP		18.17	18.42	
		11/9/99	NP		18.64	17.95	
Summary for Well B-14 (23 detail records)					SPH Recovered to Date:		
B-15	35.55	8/26/96	NA		17.32	18.23	NA
		9/23/96	NA		17.47	18.08	NA
		10/28/96	NA		17.56	17.99	NA
		11/25/96	NA		17.08	18.47	NA
		1/29/97	NP		15.26	20.29	--
		4/21/97	NP		16.20	19.35	--
		7/28/97	NP		16.77	18.78	--
		10/15/97	NP		17.44	18.11	--
		1/19/98	NP		16.72	18.83	--
		4/20/98	NP		16.72	18.83	--
		7/21/98	NP		17.25	18.3	--
		11/18/98	NP		17.85	17.7	--
		2/25/99	NP		15.52	20.03	
		5/20/99	NP		16.44	19.11	
		8/18/99	NP		17.38	18.17	
		11/9/99	NP		17.79	17.76	
Summary for Well B-15 (16 detail records)					SPH Recovered to Date:		
B-19	34.71	3/24/95	NA		16.01	18.7	NA
		4/24/95	NA		16.21	18.5	NA
		5/22/95	NA		16.45	18.26	NA
		6/19/95	NA		16.70	18.01	NA
		7/24/95	NA		17.09	17.62	NA
		8/28/95	NA		17.37	17.34	NA
		9/25/95	NA		17.56	17.15	NA
		10/23/95	NA		17.45	17.26	NA
		11/27/95	NA		16.86	17.85	NA

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-19	34.71	12/29/95	NA		15.75	18.96	NA
		1/22/96	NA		15.54	19.17	NA
		2/26/96	NA		12.95	21.76	NA
		3/25/96	NA		14.80	19.91	NA
		4/22/96	NA		15.39	19.32	NA
		5/28/96	NA		15.31	19.4	NA
		6/24/96	NA		15.79	18.92	NA
		7/22/96	NA		16.35	18.36	NA
		8/26/96	NA		16.84	17.87	NA
		9/23/96	NA		16.97	17.74	NA
		10/28/96	NA		17.03	17.68	NA
		11/25/96	NA		16.43	18.28	NA
		1/29/97	NP		14.81	19.9	--
		4/21/97	NP		15.67	19.04	--
		7/28/97	NP		16.18	18.53	0.00
		10/15/97	NP		16.90	17.81	--
		1/19/98	NP		16.05	18.66	--
		4/20/98	NP		16.75	17.96	--
		7/21/98	NP		16.78	17.93	--
		11/18/98	NP		17.33	17.38	--
		2/25/99	NP		14.93	19.78	
	34.17	5/20/99	NP		15.93	18.24	
		8/18/99	NP		16.90	17.27	
		11/9/99	NP		17.24	16.93	
Summary for Well B-19 (33 detail records)					SPH Recovered to Date:		0.00
B-20	33.40	3/24/95	16.55	0.00	16.55	16.85	NA
		4/24/95	16.93	0.00	16.93	16.47	NA
		5/22/95	16.96	0.00	16.96	16.44	NA
		6/19/95	17.20	0.00	17.20	16.2	NA
		7/24/95	17.95	0.19	18.14	15.0985	NA
		8/28/95	18.30	0.37	18.67	14.4155	NA
		9/25/95	18.26	0.01	18.27	15.1215	NA

COP0015004

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-20	33.40	10/23/95	18.04	0.00	18.04	15.36	NA
		11/27/95	17.11	0.01	17.12	16.2715	NA
		12/29/95	16.17	0.01	16.18	17.2115	NA
		1/22/96	15.20	0.00	15.20	18.2	NA
		2/26/96	13.55	0.01	13.56	19.8315	NA
		3/25/96	15.99	0.00	15.99	17.41	NA
		4/22/96	15.88	0.00	15.88	17.52	NA
		5/28/96	15.59	0.00	15.59	17.81	NA
		6/24/96	16.29	0.00	16.29	17.11	NA
		7/22/96	17.13	0.00	17.13	16.27	NA
		8/26/96	17.62	0.00	17.62	15.78	NA
		9/23/96	17.59	1.05	18.64	13.8675	NA
		10/28/96	17.50	0.43	17.93	15.1045	NA
		11/25/96	16.57	0.05	16.62	16.7375	NA
		1/29/97	NP		15.93	17.47	--
		4/21/97	NP		16.19	17.21	--
		7/28/97	16.89	0.02	16.91	16.473	1.0
		10/15/97	17.32	0.07	17.39	15.9505	0.8
		1/19/98	NP		16.31	17.09	--
		4/20/98	NP		16.68	16.72	0.1
		7/21/98	NP		17.80	15.6	--
	33.32	11/18/98	NP		17.86	15.46	--
		2/25/99	NP		16.69	16.63	
		5/20/99	NP		16.30	17.02	0.1
		8/18/99	17.56	0.56	18.12	14.724	0.15
		11/9/99	17.56	0.60	18.16	14.65	0.15
Summary for Well B-20 (33 detail records)					SPH Recovered to Date:		2.30
B-21	34.79	3/24/95	NA		16.23	18.56	NA
		4/24/95	NA		16.42	18.37	NA
		5/22/95	NA		16.63	18.16	NA
		6/19/95	NA		16.83	17.96	NA
		7/24/95	NA		17.18	17.61	NA

COP0015005

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-21	34.79	8/28/95	NA		17.43	17.36	NA
		9/25/95	NA		17.58	17.21	NA
		10/23/95	NA		17.53	17.26	NA
		11/27/95	NA		17.09	17.7	NA
		12/29/95	NA		16.07	18.72	NA
		1/22/96	NA		15.91	18.88	NA
		2/26/96	NA		13.30	21.49	NA
		3/25/96	NA		15.08	19.71	NA
		4/22/96	NA		15.77	19.02	NA
		5/28/96	NA		15.61	19.18	NA
		6/24/96	NA		16.01	18.78	NA
		7/22/96	NA		16.53	18.26	NA
		8/26/96	NA		16.95	17.84	NA
		9/23/96	NA		17.11	17.68	NA
		10/28/96	NA		17.20	17.59	NA
		11/25/96	NA		16.71	18.08	NA
		1/29/97	NP		15.23	19.56	--
		4/21/97	NP		15.99	18.8	--
		7/28/97	NP		16.45	18.34	--
		10/15/97	NP		17.10	17.69	--
		1/19/98	NP		16.33	18.46	--
		4/20/98	NP		16.48	18.31	--
		7/21/98	NP		16.95	17.84	--
		11/18/98	NP		17.40	17.39	--
		2/25/99	NP		15.34	19.45	
		5/20/99	NP		16.25	18.54	
		8/18/99	NP		17.02	17.77	
		11/9/99	NP		17.37	17.42	
Summary for Well B-21 (33 detail records)					SPH Recovered to Date:		
B-24	34.70	3/24/95	15.87	0.01	15.88	18.8115	NA
		4/24/95	15.96	0.03	15.99	18.6845	NA
		5/22/95	16.17	0.01	16.18	18.5115	NA

COP0015006

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-24	34.70	6/19/95	16.39	0.02	16.41	18.273	NA
		7/24/95	16.56	0.04	16.60	18.066	0.01
		8/28/95	16.81	0.00	16.81	17.89	NA
		9/25/95	17.02	0.00	17.02	17.68	0.03
		10/23/95	17.05	0.00	17.05	17.65	NA
		11/27/95	16.75	0.00	16.75	17.95	NA
		12/29/95	15.90	0.00	15.90	18.8	NA
		1/22/96	15.71	0.00	15.71	18.99	NA
		2/26/96	13.98	0.00	13.98	20.72	NA
		3/25/96	14.62	0.00	14.62	20.08	NA
		4/22/96	15.28	0.00	15.28	19.42	NA
		5/28/96	15.25	0.00	15.25	19.45	NA
		6/24/96	15.57	0.00	15.57	19.13	NA
		7/22/96	15.95	0.00	15.95	18.75	NA
		8/26/96	16.35	0.00	16.35	18.35	NA
		9/23/96	16.51	0.01	16.52	18.1715	NA
		10/28/96	16.54	0.00	16.54	18.16	NA
		1/29/97	NM		NM		--
		4/21/97	NP		15.29	19.41	--
		7/28/97	NP		16.00	18.7	0.00
		10/15/97	NP		16.66	18.04	--
		1/19/98	NM		NM		--
		4/20/98	NP		15.82	18.88	--
		7/21/98	NP		16.28	18.42	--
		11/18/98	16.91	0.01	16.92	17.7715	--
		2/25/99	NP		14.89	19.81	
		5/20/99	NP		15.52	19.18	0.1
		8/18/99	NP		16.30	18.4	
		11/9/99	NP		16.81	17.89	
Summary for Well B-24 (32 detail records)					SPH Recovered to Date:		0.14
B-26	37.04	3/12/95	NP		16.56	20.48	--
	35.3	4/24/95	NA		15.81	19.49	NA

COP0015007

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-26	35.3	7/24/95	NA		16.69	18.61	NA
		10/23/95	NA		17.16	18.14	NA
		1/22/96	NA		15.23	20.07	NA
		4/22/96	NA		14.85	20.45	NA
		5/28/96	NA		14.95	20.35	NA
		7/22/96	NA		16.03	19.27	NA
		8/26/96	16.52	0.00	16.52	18.78	NA
		9/23/96	16.63	0.00	16.63	18.67	NA
		10/28/96	16.68	0.00	16.68	18.62	NA
		11/25/96	15.94	0.00	15.94	19.36	NA
	35.30	1/29/97	NP		14.36	20.94	NA
		4/21/97	15.28	0.01	15.29	20.0015	0.4
		7/24/97	NP		15.80	19.5	--
		10/15/97	NP		16.58	18.72	--
		1/19/98	NP		15.64	19.66	--
		4/20/98	NP		15.77	19.53	--
		7/21/98	NP		16.41	18.89	--
		11/18/98	NP		17.05	18.25	--
		2/25/99	NP		14.41	20.89	
	35.3	5/20/99	NP		15.56	19.74	
		8/18/99	NP		16.56	18.74	
		11/9/99	NP		17.01	18.29	
Summary for Well B-26 (24 detail records)					SPH Recovered to Date:		0.40
B-28	35.25	4/24/95	NA		15.02	20.23	NA
		7/24/95	NA		16.14	19.11	NA
		10/23/95	NA		16.40	18.85	NA
		1/22/96	NA		15.25	20	NA
		4/22/96	NA		14.62	20.63	NA
		5/28/96	NA		14.68	20.57	NA
		7/22/96	NA		15.51	19.74	NA
		10/28/96	NA		15.98	19.27	NA
		1/29/97	NP		14.36	20.89	NA

COP0015008

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-28	35.25	4/21/97	14.99	0.01	15.00	20.2415	0.3
		7/24/97	NP		15.25	20	--
		10/15/97	NP		16.11	19.14	--
		1/19/98	NP		15.47	19.78	--
		4/20/98	NP		15.60	19.65	--
		7/21/98	NP		16.02	19.23	--
	35.26	11/16/98	16.26	0.01	16.27	18.9815	--
		2/25/99	NP		14.32	20.94	
		5/20/99	NP		13.20	22.06	
		8/18/99	NP		16.02	19.24	
		11/9/99	NP		16.25	19.01	
Summary for Well B-28 (20 detail records)					SPH Recovered to Date:		0.30
B-29	37.70	1/29/97	NL		NL		--
		4/21/97	NP		14.61	23.09	--
		7/28/97	NP		15.40	22.3	--
		10/15/97	NP		16.10	21.6	--
		1/19/98	NP		15.54	22.16	--
		4/20/98	NP		15.37	22.33	--
		7/21/98	NP		15.97	21.73	--
		11/18/98	NP		16.78	20.92	--
		2/25/99	NP		14.00	23.7	
	37.7	5/20/99	NP		14.97	22.73	
		8/18/99	NP		16.03	21.67	
		11/9/99	NP		16.58	21.12	
Summary for Well B-29 (12 detail records)					SPH Recovered to Date:		
B-30	35.35	4/24/95	NA		15.60	19.75	NA
		6/19/95	NP		15.60	19.75	--
		7/24/95	NA		15.96	19.39	NA
		10/23/95	NA		16.51	18.84	NA
		1/22/96	NA		14.51	20.84	NA
		4/22/96	NA		14.12	21.23	NA

COP0015009

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-30	35.35	5/28/96	NA		14.68	20.67	NA
		7/22/96	NA		15.22	20.13	NA
		10/28/96	NA		15.94	19.41	NA
		1/29/97	NP		13.48	21.87	--
		4/21/97	NP		14.50	20.85	--
		7/28/97	NP		15.07	20.28	--
		10/15/97	NP		15.96	19.39	--
		1/19/98	NP		15.02	20.33	--
		4/20/98	NP		15.01	20.34	--
		7/21/98	NP		15.67	19.68	--
	35.39	11/18/98	NP		16.45	18.94	--
		2/25/99	NP		13.74	21.65	
		5/20/99	NP		14.73	20.66	
		8/18/99	NP		15.88	19.51	
		11/9/99	NP		16.43	18.96	
Summary for Well B-30 (21 detail records)					SPH Recovered to Date:		
B-31	33.86	3/24/95	NA		14.49	19.37	NA
		4/24/95	NA		15.30	18.56	NA
		5/22/95	NA		15.98	17.88	NA
		6/19/95	NA		16.74	17.12	NA
		7/24/95	NA		16.89	16.97	NA
		8/28/95	NA		17.15	16.71	NA
		9/25/95	NA		16.97	16.89	NA
		10/23/95	16.52	-0.08	16.44	17.488	NA
		11/27/95	16.63	-3.21	13.42	23.1685	NA
		12/29/95	14.36	0.00	14.36	19.5	NA
		1/22/96	NA		15.73	18.13	NA
		2/26/96	NA		12.56	21.3	NA
		3/25/96	NA		16.06	17.8	NA
		4/22/96	NA		12.56	21.3	NA
		5/28/96	NA		14.61	19.25	NA
		6/24/96	NA		14.04	19.82	NA

COP0015010

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-31	33.86	7/22/96	NA		15.84	18.02	NA
		8/26/96	NA		16.71	17.15	NA
		9/23/96	16.52	-0.05	16.47	17.4325	NA
		10/28/96	NA		15.90	17.96	NA
		11/25/96	NA		14.47	19.39	NA
		1/29/97	NP		14.75	19.11	--
		4/21/97	14.35	0.02	14.37	19.473	0.2
		7/24/97	NP		15.89	17.97	--
		10/15/97	NP		16.30	17.56	--
		1/19/98	NP		14.25	19.61	--
		4/20/98	NP		16.01	17.85	--
		7/21/98	NP		16.65	17.21	--
		11/18/98	NP		15.95	17.91	--
		8/18/99	NP		16.69	17.17	
		11/9/99	NP		15.04	18.82	
Summary for Well B-31 (31 detail records)					SPH Recovered to Date:		0.20
B-32	34.23	3/24/95	16.03	0.00	16.03	18.2	NA
		4/24/95	16.31	0.26	16.57	17.439	NA
		5/22/95	16.76	0.00	16.76	17.47	NA
		6/19/95	17.10	0.00	17.10	17.13	NA
		7/24/95	17.59	0.00	17.59	16.64	NA
		8/28/95	17.94	0.00	17.94	16.29	NA
		9/25/95	18.11	0.00	18.11	16.12	NA
		10/23/95	17.98	0.00	17.98	16.25	NA
		11/27/95	17.25	0.00	17.25	16.98	NA
		12/29/95	16.09	0.00	16.09	18.14	NA
		1/22/96	NA		15.73	18.5	NA
		2/26/96	NA		12.72	21.51	NA
		3/25/96	NA		15.45	18.78	NA
		4/22/96	NA		15.75	18.48	NA
		5/28/96	NA		15.37	18.86	NA
		6/24/96	NA		16.01	18.22	NA

COP0015011

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-32	34.23	7/22/96	NA		16.86	17.37	NA
		8/26/96	NA		17.37	16.86	NA
		9/23/96	NA		17.61	16.62	NA
		10/28/96	NA		17.57	16.66	NA
		11/25/96	NA		16.61	17.62	NA
		1/29/97	NP		15.46	18.77	NA
		4/21/97	NP		15.89	18.34	NA
		7/28/97	NP		16.66	17.57	–
		10/15/97	NP		17.37	16.86	–
		1/19/98	NP		15.84	18.39	–
		4/20/98	NP		16.81	17.42	–
		7/21/98	NP		17.33	16.9	–
		11/18/98	NP		17.66	16.57	–
		2/25/99	NP		15.62	18.61	
		5/20/99	NP		16.46	17.77	
		8/18/99	NP		17.43	16.8	
		11/9/99	NP		17.88	16.35	
Summary for Well B-32 (33 detail records)					SPH Recovered to Date:		
B-33	35.90	1/29/97	NP		14.86	21.04	–
		4/21/97	NP		15.70	20.2	–
		7/28/97	NP		16.24	19.66	–
		10/15/97	NP		16.93	18.97	–
		1/19/98	NP		16.00	19.9	–
		4/20/98	NP		16.31	19.59	–
		7/21/98	NP		17.07	18.83	–
		11/18/98	NP		17.37	18.53	–
		2/25/99	NP		14.79	21.11	
		5/20/99	NP		15.98	19.92	
		8/18/99	NP		16.98	18.92	
		11/9/99	NP		17.33	18.57	
Summary for Well B-33 (12 detail records)					SPH Recovered to Date:		

COP0015012

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-1	22.08	1/29/96	NP		1.63	20.45	--
		1/29/97	NP		1.63	20.45	--
		4/21/97	NP		2.32	19.76	--
		10/15/97	NP		3.55	18.53	--
		1/19/98	NP		2.50	19.58	--
		4/20/98	NP		3.09	18.99	--
		7/21/98	NP		3.68	18.4	--
		11/18/98	NP		3.99	18.09	--
		2/25/99	NP		1.57	20.51	
		5/20/99	NP		2.82	19.26	
		8/18/99	NP		3.85	18.23	
		11/9/99	NP		3.61	18.47	
Summary for Well CR-1 (12 detail records)					SPH Recovered to Date:		
CR-3	34.32	4/24/95	NA		14.09	20.23	NA
		7/24/95	NA		15.25	19.07	NA
		10/23/95	NA		15.81	18.51	NA
		1/22/96	NA		10.42	23.9	NA
		1/29/96	NP		12.52	21.8	--
		4/22/96	NA		12.68	21.64	NA
		5/28/96	NA		13.61	20.71	NA
		7/22/96	NA		14.62	19.7	NA
		8/26/96	NA		15.13	19.19	NA
		9/23/96	NA		15.28	19.04	NA
		10/28/96	NA		14.79	19.53	NA
		11/25/96	NA		12.45	21.87	NA
		1/29/97	NP		12.52	21.8	--
		4/21/97	13.39	0.01	13.40	20.9115	--
		7/28/97	NP		14.51	19.81	--
		10/15/97	NP		15.20	19.12	--
		1/19/98	NP		11.61	22.71	--
		4/20/98	NP		14.32	20	--
		7/21/98	NP		14.98	19.34	--

COP0015013

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Chevron				
CR-3	34.32	11/18/98	NP		15.69	18.63	--
		2/25/99	NP		10.83	23.49	
		5/20/99	NP		14.10	20.22	
		8/18/99	NP		15.15	19.17	
		11/9/99	NP		15.68	18.64	
Summary for Well CR-3 (24 detail records)					SPH Recovered to Date:		
CR-4	34.93	4/24/95	NA		5.13	29.8	NA
		7/24/95	NA		6.90	28.03	NA
		1/22/96	NA		4.70	30.23	NA
		5/28/96	NA		4.99	29.94	NA
		7/22/96	NA		6.48	28.45	NA
		10/28/96	NA		6.35	28.58	NA
	37.14	1/29/97	NP		4.99	32.15	--
	34.93	4/21/97	NP		5.09	29.84	--
	37.14	5/3/97	NP		6.78	30.36	--
		7/28/97	NP		6.31	30.83	--
		10/15/97	NP		5.95	31.19	--
		1/19/98	NP		4.92	32.22	--
		4/20/98	NP		7.32	29.82	--
		7/21/98	NP		6.72	30.42	--
		11/18/98	NP		5.65	31.49	--
		5/20/99	NP		5.91	31.23	
		8/16/99	NP		6.20	30.94	
		11/9/99	NP		3.55	33.59	
Summary for Well CR-4 (18 detail records)					SPH Recovered to Date:		
CR-6	35.61	3/24/95	12.07	0.01	12.08	23.5215	NA
		4/24/95	12.03	0.01	12.04	23.5615	NA
		5/22/95	12.51	0.01	12.52	23.0815	NA
		6/19/95	10.16	0.00	10.16	25.45	NA
		7/24/95	14.86	0.01	14.87	20.7315	0.02
		8/28/95	14.51	0.01	14.52	21.0815	0.022

COP0015014

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-6	35.61	9/25/95	15.46	0.01	15.47	20.1315	0.054
		10/23/95	15.5	0.00	15.5	20.11	NA
		12/29/95	8.81	0.00	8.81	26.8	NA
		1/22/96	12.02	0.01	12.03	23.5715	0.04
		2/26/96	10.71	0.00	10.71	24.9	NA
		3/25/96	11.28	0.00	11.28	24.33	NA
		5/28/96	11.49	0.00	11.49	24.12	NA
		6/24/96	11.35	0.00	11.35	24.26	NA
		7/22/96	12.57	0.01	12.58	23.0215	0.01
		8/26/96	13.03	0.02	13.05	22.543	0.02
		9/23/96	13.05	0.03	13.08	22.5045	NA
		10/28/96	12.85	0.04	12.89	22.686	NA
		11/25/96	12.55	0.02	12.57	23.023	NA
		1/29/97	NP		11.15	24.46	--
		4/21/97	NP		11.86	23.75	--
		7/28/97	12.74	0.01	12.75	22.8515	1.0
		10/15/97	12.98	0.03	13.01	22.5745	1.0
		1/19/98	NP		12.13	23.48	1.51
		4/20/98	12.21	0.01	12.22	23.3815	0.3
		7/21/98	12.80	0.02	12.82	22.773	0.7
		11/18/98	NP		13.59	22.02	0.3
		5/20/99	NP		11.93	23.68	0.1
		8/16/99	NP		13.94	21.67	
		11/9/99	13.12	0.09	13.21	22.3235	0.1
Summary for Well	CR-6 (30 detail records)				SPH Recovered to Date:		5.18
CR-7	35.57	3/24/95	10.01	0.48	10.49	24.672	NA
		4/24/95	10.19	0.57	10.76	24.3255	NA
		5/22/95	10.76	0.75	11.51	23.4225	NA
		6/19/95	11.25	0.15	11.40	24.0425	NA
		7/24/95	11.80	0.01	11.81	23.7515	0.13
		8/28/95	12.20	0.00	12.20	23.37	0.029
		9/25/95	12.48	0.00	12.48	23.09	0.03

COP0015015

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-7	35.57	10/23/95	11.98	0.00	11.98	23.59	NA
		11/27/95	10.73	0.00	10.73	24.84	NA
		12/29/95	10.23	0.05	10.28	25.2475	NA
		1/22/96	9.91	0.21	10.12	25.2715	0.12
		2/26/96	8.50	0.50	9.00	26.145	0.15
		3/25/96	9.81	0.02	9.83	25.723	0.01
		4/22/96	10.21	0.12	10.33	25.138	NA
		5/28/96	9.82	0.31	10.13	25.1765	0.38
		6/24/96	10.78	0.20	10.98	24.42	0.69
		7/22/96	11.35	0.22	11.57	23.813	0.45
		8/26/96	11.84	0.12	11.96	23.508	0.13
		9/23/96	11.94	0.03	11.97	23.5745	NA
		10/28/96	11.51	0.02	11.53	24.023	NA
		11/25/96	10.80	0.00	10.80	24.77	NA
		1/29/97	NP		11.11	24.46	--
		4/21/97	10.60	0.11	10.71	24.7665	9.6
		7/24/97	11.52	0.10	11.62	23.865	2.75
		10/15/97	NP		11.57	24	0.25
		1/19/98	10.45	0.01	10.46	25.1015	0.5
		4/20/98	10.78	0.11	10.89	24.5865	1.1
		8/6/98	11.57	0.12	11.69	23.778	2.1
		11/18/98	11.88	0.01	11.89	23.6715	1.3
		2/25/99	NP		8.70	26.87	
		5/20/99	NP		9.88	25.69	0.2
		8/16/99	NP		11.19	24.38	0.01
		11/9/99	11.44	0.01	11.45	24.1115	0.01
Summary for Well CR-7 (33 detail records)					**SPH Recovered to Date:**		**19.94**
CR-8	33.14	4/24/95	NA		6.41	26.73	NA
		7/24/95	NA		8.22	24.92	NA
		10/23/95	NA		8.08	25.06	NA
		1/22/96	NA		6.21	26.93	NA
		4/22/96	NA		6.47	26.67	NA

COP0015016

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-8	33.14	5/28/96	NA		6.31	26.83	NA
		7/22/96	NA		7.08	26.06	NA
		10/28/96	NA		7.71	25.43	NA
		1/29/97	NP		5.94	27.2	--
		4/21/97	NP		6.41	26.73	--
		7/28/97	NP		7.30	25.84	--
		10/15/97	NP		7.36	25.78	--
		1/19/98	NP		5.78	27.36	--
		4/20/98	NP		6.44	26.7	--
		7/21/98	NP		7.06	26.08	--
		11/18/98	NP		7.73	25.41	--
		2/25/99	NP		5.13	28.01	
		5/20/99	NP		6.02	27.12	
		8/16/99	NP		7.23	25.91	
		11/9/99	NP		7.42	25.72	
Summary for Well CR-8 (20 detail records)					SPH Recovered to Date:		
CR-9	35.72	1/29/97	NP		4.56	31.16	--
		4/21/97	3.38	0.01	3.39	32.3215	0.2
		7/24/97	NP		5.71	30.01	0.00
		10/15/97	NP		4.13	31.59	--
		1/19/98	NP		3.01	32.71	--
		4/20/98	NP		3.68	32.04	--
		7/21/98	NP		3.44	32.28	--
		11/18/98	NP		3.45	32.27	--
		2/25/99	NP		2.63	33.09	
		5/20/99	NP		3.13	32.59	
		8/16/99	NP		5.70	30.02	
		11/9/99	NP		4.29	31.43	
Summary for Well CR-9 (12 detail records)					SPH Recovered to Date:		0.20
CR-10	35.57	3/24/95	5.34	0.03	5.37	30.1745	NA
		4/24/95	4.27	0.08	4.35	31.152	NA

COP0015017

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-10	35.57	5/22/95	5.31	0.09	5.40	30.0935	NA
		6/19/95	6.30	0.08	6.38	29.122	NA
		7/24/95	9.22	0.00	9.22	26.35	NA
		8/28/95	10.15	0.00	10.15	25.42	0.4
		9/25/95	10.82	0.00	10.82	24.75	NA
		10/23/95	9.44	0.00	9.44	26.13	NA
		12/29/95	7.54	0.00	7.54	28.03	NA
		1/22/96	6.96	0.05	7.01	28.5175	NA
		2/26/96	6.76	0.17	6.93	28.4955	0.13
		3/25/96	7.62	0.00	7.62	27.95	5.16
		4/22/96	7.69	0.00	7.69	27.88	NA
		7/22/96	1.28	-0.05	1.23	34.3825	NA
		11/25/96	2.35	0.00	2.35	33.22	NA
		1/29/97	NP		3.76	31.81	--
		4/21/97	4.26	0.16	4.42	31.014	6.4
		7/24/97	5.94	0.38	6.32	28.927	6.0
		10/15/97	5.70	0.32	6.02	29.278	3.0
		1/19/98	4.01	0.15	4.16	31.2825	5.0
		4/20/98	4.82	0.08	4.90	30.602	4.5
		7/21/98	5.83	0.23	6.06	29.3145	5.0
		11/18/98	6.66	0.52	7.18	27.948	6.0
		2/25/99	NP		3.50	32.07	
		5/20/99	4.62	0.03	4.65	30.8945	0.1
		8/16/99	6.37	0.17	6.54	28.8855	0.5
		11/9/99	6.49	0.65	7.14	27.8775	0.5
Summary for Well	CR-10 (27 detail records)				SPH Recovered to Date:		42.69
CR-11	34.43	3/24/95	1.19	0.00	1.19	33.24	NA
		4/24/95	1.34	0.00	1.34	33.09	NA
		5/22/95	2.49	0.00	2.49	31.94	NA
		6/19/95	2.94	0.00	2.94	31.49	NA
		7/24/95	3.68	0.00	3.68	30.75	NA
		8/28/95	4.18	0.00	4.18	30.25	NA

COP0015018

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-11	34.43	9/25/95	4.83	0.00	4.83	29.6	NA
		10/23/95	4.59	0.00	4.59	29.84	NA
		11/27/95	3.61	0.00	3.61	30.82	NA
		12/29/95	1.83	0.00	1.83	32.6	NA
		1/22/96	1.78	0.00	1.78	32.65	NA
		2/26/96	1.13	0.00	1.13	33.3	NA
		3/25/96	1.27	0.00	1.27	33.16	NA
		4/22/96	1.40	0.00	1.40	33.03	NA
		5/28/96	1.45	0.00	1.45	32.98	NA
		6/24/96	2.39	0.00	2.39	32.04	NA
		7/22/96	3.35	0.00	3.35	31.08	NA
		8/26/96	4.10	0.00	4.10	30.33	NA
		9/23/96	4.35	0.00	4.35	30.08	NA
		10/28/96	3.12	0.02	3.14	31.273	NA
		11/25/96	2.35	0.00	2.35	32.08	0.00
		1/29/97	NP		1.55	32.88	--
		4/21/97	NP		1.34	33.09	--
		7/24/97	NP		3.03	31.4	--
		10/15/97	NP		3.68	30.75	--
		1/19/98	NP		1.99	32.44	--
		4/20/98	NP		1.22	33.21	--
		7/21/98	NP		2.85	31.58	--
		11/18/98	3.98	0.17	4.15	30.1355	0.2
		2/25/99	NP		1.33	33.1	
		5/20/99	NP		1.77	32.66	0.1
		8/16/99	NP		3.72	30.71	
		11/9/99	NP		4.86	29.57	
Summary for Well CR-11 (33 detail records)					SPH Recovered to Date:		0.30
EX-1	34.15	2/25/99	NP		14.38	19.77	
		5/20/99	NP		15.44	18.71	
		8/18/99	NP		16.42	17.73	
		11/9/99	NP		16.80	17.35	

COP0015019

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
Summary for Well EX-1 (4 detail records)						SPH Recovered to Date:	

COP0015020

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-1	35.43	4/24/95	NA		3.55	31.88	NA
		7/24/95	NA		6.26	29.17	NA
		10/23/95	NA		5.85	29.58	NA
		1/22/96	NA		2.92	32.51	NA
		4/22/96	NA		4.01	31.42	NA
		7/22/96	NA		6.92	28.51	NA
		10/28/96	NA		5.35	30.08	NA
		1/30/97	NP		3.92	31.51	--
		4/21/97	NP		3.63	31.8	--
		7/30/97	NP		6.69	28.74	--
		10/14/97	NP		5.18	30.25	--
		1/19/98	NP		3.09	32.34	--
		4/21/98	NP		4.40	31.03	--
		7/27/98	NP		6.36	29.07	--
		11/17/98	NP		6.28	29.15	--
		2/26/99	NP		2.69	32.74	
		5/26/99	NP		4.29	31.14	
		8/20/99	NP		7.09	28.34	
		11/8/99	NP		7.28	28.15	
Summary for Well MW-1 (19 detail records)					SPH Recovered to Date:		
MW-2	35.77	1/30/97	NP		4.88	30.89	--
		4/21/97	NP		5.41	30.36	--
		7/30/97	NP		7.27	28.5	--
		10/14/97	NP		7.57	28.2	--
		1/19/98	NP		4.99	30.78	--
		4/21/98	NP		6.24	29.53	--
		7/27/98	NP		7.49	28.28	--
		11/17/98	NP		8.63	27.14	--
		2/26/99	NP		4.13	31.64	
		5/26/99	NP		6.43	29.34	
		8/20/99	NP		8.17	27.6	
		11/8/99	NP		9.42	26.35	

COP0015021

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			GATX				
Summary for Well MW-2 (12 detail records)					SPH Recovered to Date:		
MW-3	36.02	3/6/95	NA		6.79	29.23	NA
		3/27/95	NA		6.65	29.37	NA
		4/24/95	NA		6.98	29.04	NA
		7/24/95	NA		8.63	27.39	NA
		10/23/95	NA		9.62	26.4	NA
		1/22/96	8.96	0.00	8.96	27.06	NA
		4/22/96	NA		6.34	29.68	NA
		7/22/96	NA		8.47	27.55	NA
		10/28/96	NA		8.70	27.32	NA
		1/30/97	NP		6.40	29.62	--
		4/21/97	NP		6.93	29.09	--
		7/30/97	NP		8.54	27.48	--
		10/14/97	NP		8.79	27.23	--
		1/19/98	NP		7.54	28.48	--
		4/21/98	NP		7.62	28.4	--
		7/27/98	NP		8.79	27.23	--
		11/17/98	NP		9.77	26.25	--
		2/26/99	NP		5.66	30.36	
		5/26/99	NP		7.78	28.24	
		8/20/99	NP		9.35	26.67	
		11/8/99	NP		10.50	25.52	
Summary for Well MW-3 (21 detail records)					SPH Recovered to Date:		
MW-4	36.39	4/24/95	NA		6.35	30.04	NA
		7/24/95	NA		8.17	28.22	NA
		10/23/95	NA		9.16	27.23	NA
		1/22/96	NA		5.20	31.19	NA
		4/22/96	NA		5.59	30.8	NA
		7/22/96	NA		7.97	28.42	NA
		10/28/96	NA		8.14	28.25	NA
		11/25/96	NA		6.10	30.29	NA

COP0015022

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-4	36.39	1/30/97	NP		5.40	30.99	--
		4/21/97	NP		6.29	30.1	--
		7/30/97	NP		8.07	28.32	--
		10/14/97	NP		8.35	28.04	--
		1/19/98	NP		5.86	30.53	--
		4/21/98	NP		7.02	29.37	--
		7/27/98	NP		8.33	28.06	--
		11/17/98	NP		9.36	27.03	--
		2/26/99	NP		4.68	31.71	
		5/26/99	NP		7.23	29.16	
		8/20/99	NP		8.94	27.45	
		11/8/99	NP		10.09	26.3	
Summary for Well MW-4 (20 detail records)					SPH Recovered to Date:		
MW-5	33.52	3/27/95	NP		3.55	29.97	--
		4/24/95	NA		5.29	28.23	NA
		7/24/95	NA		7.12	26.4	NA
		10/23/95	NA		8.56	24.96	NA
		1/22/96	NA		4.32	29.2	NA
		4/22/96	NA		4.73	28.79	NA
		7/22/96	NA		6.98	26.54	NA
		10/28/96	NA		7.60	25.92	NA
		12/23/96	NA		2.35	31.17	NA
		1/30/97	NP		5.01	28.51	--
		4/21/97	NP		5.07	28.45	--
		7/30/97	NP		7.05	26.47	--
		10/14/97	NP		7.24	26.28	--
		1/19/98	NP		5.52	28	--
		4/21/98	NP		5.88	27.64	--
		7/27/98	NP		7.38	26.14	--
		11/17/98	NP		8.54	24.98	--
		2/26/99	NP		4.26	29.26	
		5/26/99	NP		6.15	27.37	

COP0015023

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-5	33.52	8/20/99	NP		8.05	25.47	
		11/8/99	NP		8.96	24.56	
Summary for Well MW-5 (21 detail records)					SPH Recovered to Date:		
MW-6	33.34	3/6/95	3.34	0.20	3.54	29.63	NA
		3/27/95	3.05	0.68	3.73	29.032	NA
		4/24/95	3.29	0.89	4.18	28.4035	NA
		5/22/95	3.80	0.03	3.83	29.4845	1.5
		6/19/95	4.64	0.00	4.64	28.7	1.34
		7/24/95	5.15	0.00	5.15	28.19	NA
		8/28/95	5.90	0.00	5.90	27.44	NA
		9/25/95	6.50	0.00	6.50	26.84	NA
		10/23/95	6.22	0.00	6.22	27.12	NA
		11/27/95	4.37	0.00	4.37	28.97	NA
		12/29/95	3.76	0.19	3.95	29.2285	NA
		1/22/96	2.50	0.35	2.85	30.1925	NA
		2/26/96	2.07	0.01	2.08	31.2515	NA
		3/25/96	3.34	0.00	3.34	30	0.18
		4/22/96	3.18	0.00	3.18	30.16	NA
		5/28/96	3.23	0.00	3.23	30.11	0.06
		6/24/96	4.35	0.00	4.35	28.99	NA
		7/22/96	5.08	0.00	5.08	28.26	NA
		8/26/96	5.89	0.00	5.89	27.45	NA
		9/23/96	5.54	0.00	5.54	27.8	NA
		10/28/96	5.19	0.00	5.19	28.15	NA
		11/25/96	3.28	0.00	3.28	30.06	NA
		12/23/96	2.98	0.43	3.41	29.5645	NA
		1/30/97	NP		2.77	30.57	--
		4/21/97	NP		3.25	30.09	--
		7/30/97	5.10	0.13	5.23	27.9995	0.25
		10/14/97	NP		5.40	27.94	--
		1/19/98	NP		3.07	30.27	--
		4/21/98	4.08	0.17	4.25	28.9455	1.0

COP0015024

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-6	33.34	7/27/98	NP		5.34	28	–
		11/17/98	NP		6.46	26.88	–
		2/26/99	NP		2.26	31.08	
		5/26/99	4.25	0.15	4.4	28.8125	0.2
		8/20/99	NP		6.05	27.29	
		11/8/99	NP		7.38	25.96	
Summary for Well MW-6 (35 detail records)					SPH Recovered to Date:		4.53
MW-7	34.12	3/6/95	7.96	0.04	8.00	26.086	NA
		3/27/95	7.88	0.06	7.94	26.129	NA
		4/24/95	8.18	0.00	8.18	25.94	NA
		5/22/95	8.51	0.34	8.85	24.981	NA
		6/19/95	8.93	0.39	9.32	24.4685	NA
		7/24/95	9.35	0.15	9.50	24.4925	0.06
		8/28/95	9.79	0.21	10.00	23.9415	NA
		9/25/95	10.13	0.38	10.51	23.287	NA
		10/23/95	7.04	0.43	7.47	26.2845	NA
		11/27/95	9.00	0.00	9.00	25.12	NA
		12/29/95	8.13	0.03	8.16	25.9345	0.37
		1/22/96	7.44	0.00	7.44	26.68	0.08
		2/26/96	6.20	0.00	6.20	27.92	NA
		3/25/96	7.50	0.20	7.70	26.25	NA
		4/22/96	7.84	0.11	7.95	26.0765	0.12
		5/28/96	7.70	0.10	7.80	26.235	0.12
		6/24/96	8.36	0.12	8.48	25.538	0.37
		7/22/96	8.98	0.30	9.28	24.585	NA
		8/26/96	9.52	0.30	9.82	24.045	NA
		9/23/96	9.55	0.38	9.93	23.867	NA
		10/28/96	9.30	0.48	9.78	23.932	NA
		11/25/96	8.23	0.68	8.91	24.632	NA
		12/23/96	7.52	1.98	9.50	22.937	NA
		1/30/97	7.13	3.11	10.24	21.2365	70
		4/21/97	7.91	1.81	9.72	22.8615	57

COP0015025

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-7	34.12	7/24/97	8.91	1.05	9.96	23.2675	22.0
		10/14/97	9.58	0.30	9.88	23.985	6.0
		1/19/98	7.92	1.76	9.68	22.944	20.0
		4/21/98	8.35	1.75	10.10	22.5325	17.5
		7/27/98	9.34	1.27	10.61	22.4305	20.0
		11/17/98	10.18	0.12	10.30	23.718	20.5
		2/26/99	6.98	0.05	7.03	27.0475	3.2
		5/26/99	8.61	0.15	8.76	25.2325	3.75
		8/20/99	NP		9.88	24.24	0.4
		11/8/99	10.58	0.26	10.84	23.059	1.2
Summary for Well MW-7 (35 detail records)					SPH Recovered to Date:		242.67
MW-8	33.95	4/24/95	NA		7.27	26.68	NA
		7/24/95	NA		8.53	25.42	NA
		10/23/95	NA		9.45	24.5	NA
		1/22/96	NA		6.45	27.5	NA
		4/22/96	NA		6.99	26.96	NA
		7/22/96	NA		8.30	25.65	NA
		10/28/96	NA		8.76	25.19	NA
		1/30/97	NP		6.38	27.57	--
		4/21/97	NP		7.07	26.88	--
		7/30/97	NP		8.29	25.66	--
		10/14/97	NP		9.82	24.13	--
		1/19/98	NP		7.18	26.77	--
		4/21/98	NP		7.57	26.38	--
		7/27/98	NP		8.62	25.33	--
		11/17/98	NP		9.51	24.44	--
		2/26/99	NP		5.68	28.27	
		5/26/99	NP		7.73	26.22	
		8/20/99	NP		9.03	24.92	
		11/8/99	NP		10.09	23.86	
Summary for Well MW-8 (19 detail records)					SPH Recovered to Date:		

COP0015026

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			GATX				
MW-9	36.53	4/24/95	NA		9.67	26.86	NA
		7/24/95	NA		10.85	25.68	NA
		10/23/95	NA		11.86	24.67	NA
		1/22/96	NA		9.57	26.96	NA
		4/22/96	NA		9.47	27.06	NA
		7/22/96	NA		10.34	26.19	NA
		10/28/96	NA		11.32	25.21	NA
		1/30/97	NP		8-94		--
		4/21/97	9.51	0.01	9.52	27.0015	0.1
		7/24/97	NP		10.28	26.25	--
		10/14/97	NP		11.23	25.3	--
		1/19/98	NP		10.28	26.25	--
		4/21/98	NP		9.86	26.67	--
		7/27/98	NP		10.77	25.76	--
		11/17/98	NP		11.65	24.88	--
		2/26/99	NP		8.69	27.84	
		5/26/99	NP		10.01	26.52	
		8/20/99	NP		11.15	25.38	
		11/8/99	NP		12.12	24.41	
Summary for Well	MW-9 (19 detail records)				SPH Recovered to Date:		0.10
MW-10	35.82	4/24/95	NA		8.54	27.28	NA
		7/24/95	NA		10.25	25.57	NA
		10/23/95	NA		11.20	24.62	NA
		1/22/96	NA		7.31	28.51	NA
		4/22/96	NA		8.09	27.73	NA
		7/22/96	NA		9.87	25.95	NA
		10/28/96	NA		10.22	25.6	NA
		1/30/97	NP		7.40	28.42	--
		4/21/97	NP		8.40	27.42	--
		7/30/97	NP		9.98	25.84	--
		10/14/97	NP		10.38	25.44	--
		1/19/98	NP		8.24	27.58	--

COP0015027

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-10	35.82	4/21/98	NP		9.13	26.69	--
		7/27/98	NP		10.34	25.48	--
		11/17/98	NP		11.37	24.45	--
		2/26/99	NP		1.54	34.28	
		5/26/99	NP		9.25	26.57	
		8/20/99	NP		10.92	24.9	
		11/8/99	NP		12.07	23.75	
Summary for Well MW-10 (19 detail records)					SPH Recovered to Date:		
MW-11	36.47	3/6/95	NA		5.09	31.38	NA
		3/27/95	5.25	0.00	5.25	31.22	NA
		4/24/95	5.36	0.00	5.36	31.11	NA
		5/22/95	6.11	0.00	6.11	30.36	NA
		6/19/95	6.52	0.00	6.52	29.95	NA
		7/24/95	7.10	0.00	7.10	29.37	NA
		8/28/95	8.00	0.00	8.00	28.47	NA
		9/25/95	8.12	0.00	8.12	28.35	NA
		10/23/95	7.39	0.00	7.39	29.08	NA
		11/27/95	5.25	0.00	5.25	31.22	NA
		12/29/95	5.65	0.00	5.65	30.82	NA
		1/22/96	4.50	0.00	4.50	31.97	NA
		1/30/96	NP		5.20	31.27	--
		2/26/96	3.69	0.00	3.69	32.78	NA
		3/25/96	5.50	0.00	5.50	30.97	NA
		4/22/96	5.15	0.00	5.15	31.32	NA
		5/28/96	5.29	0.00	5.29	31.18	NA
		6/24/96	6.27	0.00	6.27	30.2	NA
		7/22/96	7.04	0.00	7.04	29.43	NA
		8/26/96	7.86	0.00	7.86	28.61	NA
		9/23/96	7.20	0.00	7.20	29.27	NA
		10/28/96	6.33	0.00	6.33	30.14	NA
		11/25/96	4.94	0.00	4.94	31.53	NA
		12/23/96	NA		4.68	31.79	NA

COP0015028

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-11	36.47	1/30/97	NP		5.20	31.27	--
		4/21/97	NP		5.41	31.06	--
		7/30/97	NP		7.05	29.42	--
		10/14/97	6.62	0.01	6.63	29.8315	0.5
		1/19/98	NP		4.81	31.66	--
		4/21/98	NP		6.08	30.39	--
		7/27/98	NP		7.39	29.08	--
		11/17/98	NP		6.96	29.51	--
		2/26/99	NP		4.19	32.28	
		5/26/99	NP		6.13	30.34	
		8/20/99	NP		7.87	28.6	
		11/8/99	NP		7.75	28.72	
Summary for Well MW-11 (36 detail records)					SPH Recovered to Date:		0.50
MW-12	35.95	4/24/95	NA		5.22	30.73	NA
		7/24/95	NA		7.30	28.65	NA
		10/23/95	NA		8.33	27.62	NA
		1/22/96	NA		3.83	32.12	NA
		4/22/96	NA		4.34	31.61	NA
		7/22/96	NA		7.15	28.8	NA
		10/28/96	NA		7.37	28.58	NA
		1/30/97	NP		4.26	31.69	--
		4/21/97	NP		5.05	30.9	--
		7/30/97	NP		7.27	28.68	--
		10/14/97	NP		7.46	28.49	--
		1/19/98	NP		4.43	31.52	--
		4/21/98	NP		5.93	30.02	--
		7/27/98	NP		7.56	28.39	--
		11/17/98	NP		8.58	27.37	--
		2/26/99	NP		3.30	32.65	
		5/26/99	NP		6.14	29.81	
		8/20/99	NP		8.34	27.61	
		11/8/99	NP		9.40	26.55	

COP0015029

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			GATX				
Summary for Well MW-12 (19 detail records)					SPH Recovered to Date:		
MW-13	37.89	4/24/95	NA		4.41	33.48	NA
		7/24/95	NA		6.29	31.6	NA
		10/23/95	NA		6.67	31.22	NA
		1/22/96	NA		3.65	34.24	NA
		4/22/96	NA		4.18	33.71	NA
		7/22/96	NA		6.28	31.61	NA
		10/28/96	NA		5.61	32.28	NA
		1/30/97	NP		4.22	33.67	--
		4/21/97	NP		4.28	33.61	--
		7/30/97	NP		6.27	31.62	--
		10/14/97	NP		5.64	32.25	--
		1/19/98	NP		3.43	34.46	--
		4/21/98	NP		4.90	32.99	--
		7/27/98	NP		6.44	31.45	--
		11/17/98	NP		6.27	31.62	--
		2/26/99	NP		3.25	34.64	
		5/26/99	NP		5.17	32.72	
		8/20/99	NP		7.06	30.83	
		11/8/99	NP		6.92	30.97	
Summary for Well MW-13 (19 detail records)					SPH Recovered to Date:		
MW-14	36.28	4/24/95	NA		3.33	32.95	NA
		7/24/95	NA		5.62	30.66	NA
		10/23/95	NA		5.96	30.32	NA
		1/22/96	NA		2.71	33.57	NA
		4/22/96	NA		3.25	33.03	NA
		7/22/96	NA		5.68	30.6	NA
		10/28/96	NA		5.30	30.98	NA
		1/30/97	NP		3.28	33	--
		4/21/97	NP		3.29	32.99	--
		7/30/97	NP		5.64	30.64	--

COP0015030

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-14	36.28	10/14/97	NP		5.13	31.15	--
		1/19/98	NP		2.50	33.78	--
		4/21/98	NP		4.00	32.28	--
		7/27/98	NP		5.73	30.55	--
		11/17/98	NP		5.75	30.53	--
		2/26/99	NP		2.12	34.16	
		5/26/99	NP		4.24	32.04	
		8/20/99	NP		6.59	29.69	
		11/8/99	NP		6.54	29.74	
Summary for Well MW-14 (19 detail records)					SPH Recovered to Date:		
MW-15	37.50	1/30/97	NP		3.28	34.22	--
		4/21/97	NP		4.85	32.65	--
		7/30/97	NP		7.92	29.58	--
		10/14/97	NP		5.91	31.59	--
		1/19/98	NP		4.43	33.07	--
		4/21/98	NP		4.81	32.69	--
		7/27/98	NP		7.76	29.74	--
		11/17/98	NP		7.20	30.3	--
		2/26/99	NP		2.87	34.63	
	37.5	5/26/99	NP		5.5	32	
		8/20/99	NP		8.84	28.66	
		11/8/99	NP		8.58	28.92	
Summary for Well MW-15 (12 detail records)					SPH Recovered to Date:		
MW-16	34.93	7/24/95	NA		5.78	29.15	NA
		10/23/95	NA		6.73	28.2	NA
		1/22/96	NA		2.44	32.49	NA
		4/22/96	NA		3.46	31.47	NA
		7/22/96	NA		5.63	29.3	NA
		10/28/96	NA		5.90	29.03	NA
		1/30/97	NP		3.15	31.78	--
		4/21/97	NP		3.44	31.49	--

COP0015031

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			GATX				
MW-16	34.93	7/30/97	NP		5.65	29.28	--
		10/14/97	NP		5.80	29.13	--
		1/19/98	NP		2.90	32.03	--
		4/21/98	NP		4.31	30.62	--
		7/27/98	NP		5.88	29.05	--
		11/17/98	NP		6.95	27.98	--
		2/26/99	NP		2.00	32.93	
		5/26/99	NP		4.46	30.47	
		8/20/99	NP		6.62	28.31	
		11/8/99	NP		7.76	27.17	
Summary for Well MW-16 (18 detail records)					SPH Recovered to Date:		
MW-17	36.05	1/30/97	NP		4.27	31.78	--
		4/21/97	NP		4.39	31.66	--
		7/30/97	NP		5.28	30.77	--
		10/14/97	NP		5.21	30.84	--
		1/19/98	NP		4.12	31.93	--
		4/21/98	NP		4.70	31.35	--
		7/27/98	NP		5.37	30.68	--
		11/17/98	NP		5.84	30.21	--
		2/26/99	NP		3.79	32.26	
		5/26/99	NP		4.17	31.88	
		8/20/99	NP		5.84	30.21	
		11/8/99	NP		6.24	29.81	
Summary for Well MW-17 (12 detail records)					SPH Recovered to Date:		
MW-18	33.76	4/24/95	NA		1.66	32.1	NA
		7/24/95	NA		3.02	30.74	NA
		10/23/95	NA		3.43	30.33	NA
		1/22/96	NA		1.08	32.68	NA
		4/22/96	NA		0.89	32.87	NA
		7/22/96	NA		2.83	30.93	NA
		10/28/96	NA		2.48	31.28	NA

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-18	33.76	1/30/97	NP		1.24	32.52	--
		4/21/97	NP		1.23	32.53	--
		7/30/97	NP		2.66	31.1	--
		10/14/97	NP		2.45	31.31	--
		1/19/98	NP		0.73	33.03	--
		4/21/98	NP		1.95	31.81	--
		7/27/98	NP		2.94	30.82	--
		11/17/98	NP		3.44	30.32	--
		2/26/99	NP		0.73	33.03	
		5/26/99	NP		2.14	31.62	
		8/20/99	NP		3.53	30.23	
		11/8/99	NP		4.18	29.58	
Summary for Well MW-18 (19 detail records)					SPH Recovered to Date:		
MW-19	33.39	3/6/95	2.77	0.49	3.26	29.7135	NA
		3/27/95	2.57	0.51	3.08	29.8765	NA
		4/24/95	2.79	0.54	3.33	29.601	NA
		5/22/95	3.19	0.51	3.70	29.2565	NA
		6/19/95	3.87	0.61	4.48	28.3915	NA
		7/24/95	4.41	0.01	4.42	28.9615	0.31
		8/28/95	5.64	0.00	5.64	27.75	0.03
		9/25/95	6.80	0.00	6.80	26.59	NA
		10/23/95	5.48	0.00	5.48	27.91	NA
		11/27/95	3.79	0.00	3.79	29.6	NA
		12/29/95	3.23	0.00	3.23	30.16	NA
		1/22/96	2.18	0.00	2.18	31.21	NA
		2/26/96	1.57	0.00	1.57	31.82	NA
		3/25/96	2.56	0.00	2.56	30.83	NA
		4/22/96	1.77	0.00	1.77	31.62	NA
		5/28/96	2.11	0.00	2.11	31.28	NA
		6/24/96	2.93	0.00	2.93	30.46	NA
		7/22/96	3.61	0.00	3.61	29.78	NA
		8/26/96	4.31	0.00	4.31	29.08	NA

COP0015033

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-19	33.39	9/23/96	3.65	0.00	3.65	29.74	NA
		10/28/96	1.95	0.00	1.95	31.44	NA
		11/25/96	1.63	0.00	1.63	31.76	NA
		12/23/96	1.86	0.00	1.86	31.53	NA
		1/30/97	NP		1.86	31.53	--
		4/21/97	NP		2.23	31.16	--
		7/30/97	NP		3.79	29.6	--
		10/14/97	NP		3.63	29.76	--
		1/19/98	NP		1.31	32.08	--
		4/21/98	NP		2.84	30.55	--
		7/27/98	NP		4.08	29.31	--
		11/17/98	NP		4.88	28.51	--
		2/26/99	1.62	0.02	1.64	31.733	
		5/26/99	3.62	0.02	3.64	29.733	0.25
		8/20/99	NP		5.39	28	
		11/8/99	6.13	0.11	6.24	27.0565	0.1
Summary for Well	MW-19 (35 detail records)					SPH Recovered to Date:	0.69
MW-20	34.76	4/24/95	NA		9.55	25.21	NA
		7/24/95	NA		10.73	24.03	NA
		10/23/95	NA		11.35	23.41	NA
		1/22/96	NA		8.50	26.26	NA
		4/22/96	NA		9.53	25.23	NA
		7/22/96	NA		10.41	24.35	NA
		9/23/96	11.08	0.00	11.08	23.68	NA
		10/28/96	NA		10.74	24.02	NA
		11/25/96	NA		9.19	25.57	NA
		12/23/96	NA		9.05	25.71	NA
		1/30/97	NP		8.03	26.73	--
		4/21/97	NP		9.35	25.41	--
		7/30/97	NP		10.45	24.31	--
		10/14/97	NP		10.58	24.18	--
		1/19/98	NP		9.07	25.69	--

COP0015034

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-20	34.76	4/21/98	NP		9.87	24.89	--
		7/27/98	NP		10.74	24.02	--
		11/17/98	NP		11.26	23.5	--
		2/26/99	NP		7.97	26.79	
		5/26/99	NP		9.87	24.89	
		8/20/99	NP		11.19	23.57	
		11/8/99	NP		11.95	22.81	
Summary for Well MW-20 (22 detail records)					SPH Recovered to Date:		
MW-21	34.33	4/24/95	NA		1.48	32.85	NA
		7/24/95	NA		2.21	32.12	NA
		10/23/95	NA		2.04	32.29	NA
		1/22/96	NA		1.08	33.25	NA
		4/22/96	NA		0.78	33.55	NA
		7/22/96	NA		2.24	32.09	NA
		10/28/96	NA		1.97	32.36	NA
		1/30/97	NP		1.15	33.18	--
		4/21/97	NP		1.13	33.2	--
		7/30/97	NP		2.05	32.28	--
		10/14/97	NP		1.76	32.57	--
		1/19/98	NM		NM		--
		4/21/98	NP		1.62	32.71	--
		7/27/98	NP		2.13	32.2	--
		11/17/98	NP		1.86	32.47	--
		2/26/99	NP		1.03	33.3	
		5/26/99	NP		1.45	32.88	
		8/20/99	NP		2.57	31.76	
		11/8/99	NP		2.36	31.97	
Summary for Well MW-21 (19 detail records)					SPH Recovered to Date:		
MW-22	35.65	3/6/95	NA		3.32	32.33	NA
		3/27/95	3.23	0.00	3.23	32.42	NA
		4/24/95	3.25	0.00	3.25	32.4	NA

COP0015035

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-22	35.65	5/22/95	3.93	0.00	3.93	31.72	NA
		6/19/95	4.34	0.00	4.34	31.31	NA
		7/24/95	4.83	0.00	4.83	30.82	NA
		8/28/95	5.35	0.00	5.35	30.3	NA
		9/25/95	5.94	0.00	5.94	29.71	NA
		10/23/95	5.24	0.00	5.24	30.41	NA
		11/27/95	4.04	0.00	4.04	31.61	NA
		12/28/95	3.26	0.00	3.26	32.39	NA
		1/22/96	2.77	0.00	2.77	32.88	NA
		2/26/96	2.42	0.00	2.42	33.23	NA
		3/25/96	3.47	0.00	3.47	32.18	NA
		4/22/96	3.32	0.00	3.32	32.33	NA
		5/28/96	3.06	0.00	3.06	32.59	NA
		6/24/96	3.93	0.00	3.93	31.72	NA
		7/22/96	4.55	0.00	4.55	31.1	NA
		8/26/96	6.85	0.00	6.85	28.8	NA
		9/23/96	5.66	0.00	5.66	29.99	NA
		10/28/96	4.80	0.00	4.80	30.85	NA
		11/25/96	3.96	0.00	3.96	31.69	NA
		12/23/96	3.20	0.00	3.20	32.45	NA
		1/30/97	NP		3.72	31.93	--
		4/21/97	NP		3.27	32.38	--
		7/30/97	NP		4.73	30.92	--
		10/14/97	NP		4.87	30.78	--
		1/19/98	NP		2.96	32.69	--
		4/21/98	NP		3.71	31.94	--
		7/27/98	NP		4.80	30.85	--
		11/17/98	NP		5.33	30.32	--
		2/26/99	NP		2.28	33.37	
		5/26/99	NP		3.61	32.04	
		8/20/99	NP		5.20	30.45	
		11/8/99	NP		6.49	29.16	

COP0015036

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			GATX				
Summary for Well MW-22 (35 detail records)					SPH Recovered to Date:		
MW-23	36.06	3/27/95	9.42	0.00	9.42	26.64	NA
		4/24/95	3.97	0.00	3.97	32.09	NA
		5/22/95	4.50	0.00	4.50	31.56	NA
		6/26/95	4.75	0.00	4.75	31.31	NA
		7/24/95	5.07	0.00	5.07	30.99	NA
		8/28/95	5.44	0.11	5.55	30.4165	NA
		10/23/95	5.15	0.00	5.15	30.91	NA
		11/27/95	3.56	0.00	3.56	32.5	NA
		12/28/95	4.27	0.00	4.27	31.79	NA
		1/22/96	NA		3.49	32.57	NA
		2/26/96	3.59	0.00	3.59	32.47	NA
		3/25/96	4.24	0.00	4.24	31.82	NA
		4/22/96	3.23	0.00	3.23	32.83	NA
		5/28/96	3.97	0.00	3.97	32.09	NA
		6/24/96	4.46	0.00	4.46	31.6	NA
		7/22/96	5.02	0.03	5.05	30.9845	NA
		8/28/96	5.80	0.00	5.80	30.26	NA
		9/23/96	5.30	0.06	5.36	30.649	NA
		9/25/96	5.78	0.22	6.00	29.873	NA
		10/28/96	4.73	0.00	4.73	31.33	NA
		11/25/96	3.75	0.00	3.75	32.31	NA
		12/23/96	3.68	0.00	3.68	32.38	NA
		1/30/97	NP		3.46	32.6	--
		4/21/97	NP		3.89	32.17	--
		7/30/97	NP		5.15	30.91	--
		10/14/97	5.82	0.07	5.89	30.1105	3.0
		1/19/98	NP		3.08	32.98	--
		4/21/98	NP		4.15	31.91	--
		7/27/98	4.71	0.01	4.72	31.3315	2.1
		11/17/98	5.05	0.01	5.06	30.9915	--
		2/26/99	NP		3.38	32.68	

COP0015037

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-23	36.06	5/26/99	NP		4.25	31.81	
		8/20/99	5.27	0.14	5.41	30.531	0.06
		11/8/99	5.27	0.38	5.65	30.087	0.06
Summary for Well MW-23 (34 detail records)					SPH Recovered to Date:		5.22
MW-24	35.15	3/6/95	4.15	0.83	4.98	29.4645	NA
		4/24/95	5.31	-0.94	4.37	31.579	NA
		5/22/95	4.96	-0.01	4.95	30.2085	NA
		6/26/95	6.50	1.90	8.40	25.135	NA
		7/24/95	7.25	0.24	7.49	27.456	NA
		8/28/95	8.42	1.58	10.00	23.807	NA
		12/1/95	NM		NM		28.1
		3/27/96	4.28	0.90	5.18	29.205	NA
		12/1/96	NM		NM		1.2
		1/30/97	NP		5.10	30.05	--
		4/21/97	NP		4.89	30.26	--
		7/30/97	8.30	0.16	8.46	26.554	0.25
		10/14/97	NP		8.13	27.02	1.5
		1/19/98	4.02	0.01	4.03	31.1115	0.75
		4/21/98	5.34	0.01	5.35	29.7915	0.12
		7/27/98	6.98	0.02	7.00	28.133	3.1
		11/17/98	8.00	0.04	8.04	27.076	0.25
		2/26/99	3.94	0.01	3.95	31.1915	
		5/26/99	5.34	0.01	5.35	29.7915	0.25
		8/20/99	NP		7.62	27.53	
		11/8/99	NP		8.59	26.56	
Summary for Well MW-24 (21 detail records)					SPH Recovered to Date:		35.52
MW-25	34.73	4/22/96	10.00	0.24	10.24	24.286	NA
		9/23/96	11.69	0.00	11.69	23.04	NA
		10/28/96	NA		11.22	23.51	NA
		11/25/96	NA		9.95	24.78	NA
		12/23/96	NA		9.72	25.01	NA

COP0015038

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-25	34.73	1/30/97	NP		9.37	25.36	--
		4/21/97	9.90	0.01	9.91	24.8115	0.1
		7/24/97	NP		10.92	23.81	--
		10/14/97	NP		11.30	23.43	--
		1/19/98	NP		9.84	24.89	--
		4/21/98	NP		10.59	24.14	--
		7/27/98	NP		11.46	23.27	--
		11/17/98	NP		11.97	22.76	--
		2/26/99	NP		9.71	25.02	
		5/26/99	NP		10.46	24.27	
		11/8/99	NP		12.42	22.31	
Summary for Well MW-25 (16 detail records)					SPH Recovered to Date:		0.10
MW-26	34.78	7/22/96	11.39	0.43	11.82	22.5945	NA
		9/11/96	10.00	0.24	10.24	24.336	NA
		9/23/96	11.85	0.25	12.10	22.4675	NA
		10/28/96	11.38	0.03	11.41	23.3445	NA
		11/25/96	10.36	0.00	10.36	24.42	NA
		12/23/96	10.39	0.00	10.39	24.39	NA
		1/30/97	NP		10.35	24.43	--
		4/21/97	NP		10.32	24.46	0.1
		7/30/97	11.42	0.01	11.43	23.3415	0.1
		10/14/97	11.68	0.02	11.70	23.063	0.5
		1/19/98	NP		10.36	24.42	--
		4/21/98	NP		10.98	23.8	--
		7/27/98	NP		11.80	22.98	--
		11/17/98	NP		12.36	22.42	--
		2/26/99	NP		9.12	25.66	
		5/26/99	NP		10.84	23.94	0.2
		8/20/99	NP		12.17	22.61	
		11/8/99	NP		12.75	22.03	
Summary for Well MW-26 (18 detail records)					SPH Recovered to Date:		0.90

COP0015039

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-27	35.67	2/26/96	3.94	0.00	3.94	31.73	NA
		3/25/96	4.73	0.00	4.73	30.94	NA
		4/22/96	3.71	0.00	3.71	31.96	NA
		5/28/96	4.54	0.00	4.54	31.13	NA
		6/24/96	5.34	0.00	5.34	30.33	NA
		7/22/96	5.73	0.00	5.73	29.94	NA
		8/26/96	5.96	0.00	5.96	29.71	NA
		9/23/96	6.81	0.00	6.81	28.86	NA
		10/28/96	5.35	0.00	5.35	30.32	NA
		11/25/96	3.34	0.00	3.34	32.33	NA
		12/23/96	4.04	0.00	4.04	31.63	NA
		1/30/97	NP		4.37	31.3	--
		4/21/97	NP		4.44	31.23	--
		7/30/97	NP		5.69	29.98	--
		10/14/97	NP		5.29	30.38	--
		1/19/98	NP		3.81	31.86	--
		4/21/98	NP		4.90	30.77	--
		7/27/98	NP		5.66	30.01	--
	35.69	11/17/98	NP		5.70	29.99	--
		2/26/99	NP		3.50	32.19	
		5/26/99	NP		4.92	30.77	
		8/20/99	NP		5.96	29.73	
		11/8/99	NP		5.82	29.87	
Summary for Well MW-27 (23 detail records)					SPH Recovered to Date:		
MW-28	34.39	3/6/95	NA		4.41	29.98	NA
		3/27/95	4.74	0.01	4.75	29.6315	NA
		4/24/95	5.26	0.00	5.26	29.13	NA
		5/22/95	6.00	0.02	6.02	28.353	NA
		6/26/95	6.50	0.09	6.59	27.7235	NA
		7/24/95	6.94	0.00	6.94	27.45	NA
		8/28/95	8.04	0.01	8.05	26.3315	0.75
		10/23/95	7.60	0.00	7.60	26.79	NA

COP0015040

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-28	34.39	11/27/95	4.04	0.00	4.04	30.35	0.03
		12/28/95	4.25	0.00	4.25	30.14	NA
		1/22/96	2.29	0.00	2.29	32.1	NA
		2/26/96	3.78	0.00	3.78	30.61	NA
		3/25/96	5.10	0.00	5.10	29.29	NA
		4/22/96	4.22	0.00	4.22	30.17	NA
		5/28/96	4.66	0.00	4.66	29.73	NA
		6/24/96	6.01	0.00	6.01	28.38	NA
		7/22/96	6.77	0.00	6.77	27.62	NA
		8/28/96	7.56	0.00	7.56	26.83	NA
		9/23/96	6.28	0.00	6.28	28.11	NA
		9/25/96	11.75	0.00	11.75	22.64	1.03
		10/28/96	5.03	0.00	5.03	29.36	NA
		11/25/96	2.50	0.00	2.50	31.89	NA
		12/23/96	4.38	0.01	4.39	29.9915	NA
		1/30/97	NP		3.71	30.68	--
		4/21/97	4.72	0.03	4.75	29.6145	0.5
		7/30/97	NP		6.30	28.09	--
		10/14/97	5.87	0.02	5.89	28.483	1.0
		1/19/98	NP		4.01	30.38	--
		4/21/98	5.16	0.01	5.17	29.2115	0.02
		7/27/98	NP		6.67	27.72	1.0
		11/17/98	NP		7.16	27.23	--
		2/26/99	NP		3.38	31.01	
		5/26/99	4.55	0.01	4.56	29.8215	0.2
		8/20/99	NP		7.19	27.2	0.08
		11/8/99	13.05	0.13	13.18	21.0995	0.2
Summary for Well MW-28 (35 detail records)					SPH Recovered to Date:		4.81
MW-29	35.77	4/24/95	NA		13.34	22.43	NA
		7/24/95	NA		14.20	21.57	NA
		10/23/95	NA		14.86	20.91	NA
		1/22/96	NA		12.70	23.07	NA

COP0015041

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-29	35.77	4/22/96	NA		12.75	23.02	NA
		7/22/96	NA		13.64	22.13	NA
		10/28/96	NA		14.15	21.62	NA
		1/30/97	NP		13.41	22.36	--
		4/21/97	NP		12.89	22.88	--
		7/30/97	NP		13.58	22.19	--
		10/14/97	NP		14.17	21.6	--
		1/19/98	NP		13.13	22.64	--
		4/21/98	NP		13.32	22.45	--
		7/27/98	NP		14.01	21.76	--
		11/17/98	NP		14.63	21.14	--
		2/26/99	NP		12.22	23.55	
		5/26/99	NP		13.17	22.6	
		8/20/99	NP		14.22	21.55	
		11/8/99	NP		14.92	20.85	
Summary for Well MW-29 (19 detail records)					SPH Recovered to Date:		
MW-30	36.39	1/30/97	NP		4.43	31.96	--
		4/21/97	NP		4.65	31.74	--
		7/30/97	NP		6.00	30.39	--
		10/14/97	NP		5.79	30.6	--
		1/19/98	NP		3.85	32.54	--
		4/21/98	NP		5.22	31.17	--
		7/27/98	NP		6.23	30.16	--
		11/17/98	NP		6.99	29.4	--
		2/26/99	NP		3.76	32.63	
		5/26/99	NP		5.32	31.07	
		8/20/99	NP		6.74	29.65	
		11/8/99	NP		7.45	28.94	
Summary for Well MW-30 (12 detail records)					SPH Recovered to Date:		
MW-31	37.55	3/6/95	NA		5.64	31.91	NA
		3/27/95	5.75	0.01	5.76	31.7815	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-31	37.55	4/24/95	6.09	0.00	6.09	31.46	NA
		5/22/95	6.70	0.00	6.70	30.85	NA
		6/26/95	7.26	0.00	7.26	30.29	NA
		7/24/95	7.74	0.00	7.74	29.81	NA
		8/28/95	8.41	0.00	8.41	29.14	NA
		10/23/95	8.56	0.00	8.56	28.99	NA
		11/27/95	6.33	0.00	6.33	31.22	NA
		12/28/95	5.90	0.00	5.90	31.65	NA
		1/22/96	4.62	0.00	4.62	32.93	NA
		2/26/96	4.92	0.00	4.92	32.63	NA
		3/25/96	6.02	0.00	6.02	31.53	NA
		4/22/96	5.57	0.00	5.57	31.98	NA
		5/28/96	5.73	0.00	5.73	31.82	NA
		6/24/96	6.72	0.00	6.72	30.83	NA
		7/22/96	7.38	0.00	7.38	30.17	NA
		8/28/96	8.02	0.00	8.02	29.53	NA
		9/23/96	7.48	0.00	7.48	30.07	NA
		9/25/96	8.96	0.00	8.96	28.59	NA
		10/28/96	6.68	0.00	6.68	30.87	NA
		11/25/96	4.92	0.00	4.92	32.63	NA
		12/23/96	5.08	0.00	5.08	32.47	NA
		1/30/97	NP		5.45	32.1	--
		4/21/97	NP		5.73	31.82	--
		7/30/97	NP		7.32	30.23	--
		10/14/97	NP		7.19	30.36	--
		1/19/98	NP		4.79	32.76	--
		4/21/98	NP		6.31	31.24	--
		7/27/98	NP		7.51	30.04	--
	35.66	11/17/98	NP		8.38	27.28	--
		2/26/99	NP		4.67	30.99	
		5/26/99	NP		6.44	29.22	
		8/20/99	NP		8.12	27.54	
		11/8/99	NP		8.93	26.73	

COP0015043

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
Summary for Well MW-31 (35 detail records)					SPH Recovered to Date:		
MW-32	37.01	4/24/95	NA		4.27	32.74	NA
		7/24/95	NA		5.75	31.26	NA
		10/23/95	NA		6.40	30.61	NA
		4/22/96	NA		3.89	33.12	NA
		7/22/96	NA		5.45	31.56	NA
		10/28/96	NA		5.59	31.42	NA
		1/30/97	NP		4.37	32.64	--
		4/21/97	NP		4.02	32.99	--
		7/30/97	NP		5.49	31.52	--
		10/14/97	NP		5.57	31.44	--
		1/19/98	NP		3.45	33.56	--
		4/21/98	NP		4.52	32.49	--
		7/27/98	NP		5.58	31.43	--
		11/17/98	NP		6.34	30.67	--
		2/26/99	NP		3.07	33.94	
		5/26/99	NP		4.55	32.46	
		8/20/99	NP		6.08	30.93	
		11/8/99	NP		6.72	30.29	
Summary for Well MW-32 (18 detail records)					SPH Recovered to Date:		
MW-33	39.34	4/24/95	NA		19.93	19.41	NA
		7/24/95	NA		20.68	18.66	NA
		10/23/95	NA		21.05	18.29	NA
		1/22/96	NA		19.07	20.27	NA
		4/22/96	NA		19.48	19.86	NA
		7/22/96	NA		20.26	19.08	NA
		10/28/96	NA		20.58	18.76	NA
		1/30/97	NP		18.92	20.42	--
		4/21/97	NP		19.61	19.73	--
		7/30/97	NP		20.03	19.31	--
		10/14/97	NP		20.54	18.8	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-33	39.34	1/19/98	NP		19.40	19.94	--
		4/21/98	NP		19.99	19.35	--
		7/27/98	NP		20.45	18.89	--
		11/17/98	NP		20.93	18.41	--
		2/26/99	NP		18.67	20.67	
		5/26/99	NP		19.95		
		8/20/99	NP		20.69		
		11/8/99	NP		20.99		
Summary for Well MW-33 (19 detail records)					SPH Recovered to Date:		
MW-34	39.67	4/24/95	NA		19.40	20.27	NA
		7/24/95	NA		19.99	19.68	NA
		10/23/95	NA		20.26	19.41	NA
		1/22/96	NA		18.71	20.96	NA
		4/22/96	NA		19.43	20.24	NA
		7/22/96	NA		19.74	19.93	NA
		10/28/96	NA		20.18	19.49	NA
		1/30/97	NP		18.78	20.89	--
		4/21/97	NP		19.41	20.26	--
		7/30/97	NP		19.76	19.91	--
		10/14/97	NP		20.04	19.63	--
		1/19/98	NP		19.92	19.75	--
		4/21/98	NP		19.60	20.07	--
		7/27/98	NP		20.03	19.64	--
		11/17/98	NP		20.26	19.41	--
		2/26/99	NP		18.54	21.13	
		5/26/99	NP		19.62	20.05	
		8/20/99	NP		20.13	19.54	
		11/8/99	NP		20.41	19.26	
Summary for Well MW-34 (19 detail records)					SPH Recovered to Date:		
MW-35	33.39	1/30/97	NP		2.08	31.31	--
		4/21/97	NP		2.58	30.81	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-35	33.39	10/14/97	NP		4.03	29.36	--
		1/19/98	NP		2.88	30.51	--
		4/21/98	NP		2.71	30.68	--
		7/27/98	NP		3.82	29.57	--
		11/17/98	NP		5.09	28.3	--
		2/26/99	NP		1.57	31.82	
		5/26/99	NP		2.99	30.4	
		8/20/99	NP		4.60	28.79	
		11/8/99	NP		5.88	27.51	
Summary for Well MW-35 (11 detail records)					SPH Recovered to Date:		
MW-36	34.88	4/24/95	NA		19.40	15.48	NA
		7/24/95	NA		19.99	14.89	NA
		10/23/95	NA		20.26	14.62	NA
		1/22/96	NA		13.74	21.14	NA
		4/22/96	NA		13.72	21.16	NA
		7/22/96	NA		14.90	19.98	NA
		10/28/96	NA		15.54	19.34	NA
		1/30/97	NP		13.02	21.86	--
		4/21/97	NP		13.98	20.9	--
		7/30/97	NP		14.51	20.37	--
		10/14/97	NP		15.15	19.73	--
		1/19/98	NP		14.13	20.75	--
		4/21/98	NP		14.33	20.55	--
		7/27/98	NP		15.09	19.79	--
		11/17/98	NP		15.59	19.29	--
		2/26/99	NP		12.98	21.9	
		5/26/99	NP		14.30	20.58	
		8/20/99	NP		15.24	19.64	
		11/8/99	NP		15.74	19.14	
Summary for Well MW-36 (19 detail records)					SPH Recovered to Date:		
MW-37	34.86	4/24/95	NA		14.96	19.9	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-37	34.86	7/24/95	NA		15.88	18.98	NA
		10/23/95	NA		16.37	18.49	NA
		1/22/96	NA		14.22	20.64	NA
		4/22/96	NA		13.72	21.14	NA
		7/22/96	NA		15.28	19.58	NA
		10/28/96	NA		15.80	19.06	NA
		1/30/97	NP		13.44	21.42	NA
		4/21/97	NP		14.48	20.38	NA
		7/30/97	NP		15.15	19.71	--
		10/14/97	NP		15.76	19.1	--
		1/19/98	NP		14.61	20.25	--
		4/21/98	NP		14.98	19.88	--
		7/27/98	NP		15.71	19.15	--
		11/17/98	NP		16.24	18.62	--
		2/26/99	NP		13.47	21.39	
		5/26/99	NP		13.90	20.96	
		8/20/99	NP		15.88	18.98	
		11/8/99	NP		16.27	18.59	
Summary for Well MW-37 (19 detail records)					SPH Recovered to Date:		
MW-38	37.50	1/30/97	NP		3.98	33.52	--
		4/21/97	NP		4.84	32.66	--
		10/14/97	NP		7.39	30.11	--
		1/19/98	NP		4.76	32.74	--
		4/21/98	NP		5.27	32.23	--
		7/27/98	NP		6.89	30.61	--
		11/17/98	NP		7.98	29.52	--
		2/26/99	NP		5.68	31.82	
	37.5	5/26/99	NP		5.57	31.93	
		8/20/99	NP		7.67	29.83	
		11/8/99	NP		8.79	28.71	
Summary for Well MW-38 (11 detail records)					SPH Recovered to Date:		

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-39	35.02	6/24/96	13.01	0.00	13.01	22.01	NA
		7/22/96	13.45	0.00	13.45	21.57	NA
		8/26/96	13.90	0.00	13.90	21.12	NA
		9/23/96	14.08	0.00	14.08	20.94	NA
		10/28/96	14.00	0.00	14.00	21.02	NA
		11/25/96	13.54	0.00	13.54	21.48	NA
		12/23/96	12.77	0.00	12.77	22.25	NA
		1/30/97	NM		NM		--
		4/21/97	NM		NM		--
		10/14/97	NP		13.99	21.03	--
		1/19/98	NM		NM		--
		4/21/98	NM		NM		--
		7/27/98	NP		13.85	21.17	--
		11/17/98	NP		14.36	20.66	--
		2/26/99	NP		12.21	22.81	
		5/26/99	NP		13.29	21.73	
		8/20/99	NP		14.04	20.98	
		11/8/99	NP		14.54	20.48	
Summary for Well	MW-39 (18 detail records)				SPH Recovered to Date:		
MW-40	33.65	6/24/96	13.81	0.00	13.81	19.84	NA
		7/22/96	14.32	0.00	14.32	19.33	NA
		8/26/96	14.77	0.00	14.77	18.88	NA
		9/23/96	14.83	0.00	14.83	18.82	NA
		10/28/96	14.63	0.00	14.63	19.02	NA
		11/25/96	13.78	0.00	13.78	19.87	NA
		12/23/96	13.37	0.00	13.37	20.28	NA
		1/30/97	NP		12.74	20.91	--
		4/21/97	NP		13.65	20	--
		7/30/97	NP		14.24	19.41	--
		10/14/97	NP		14.62	19.03	--
		1/19/98	NP		13.28	20.37	--
		4/21/98	NP		14.05	19.6	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-40	33.65	7/27/98	NP		14.70	18.95	--
		11/17/98	NP		15.09	18.56	--
		2/26/99	NP		12.56	21.09	
		5/26/99	NP		13.99	19.66	
		8/20/99	NP		14.79	18.86	
		11/8/99	NP		15.09	18.56	
Summary for Well MW-40 (19 detail records)					SPH Recovered to Date:		

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-1	34.79	4/24/95	17.42	0.49	17.91	16.4635	NA
		5/22/95	17.57	0.47	18.04	16.3505	NA
		6/26/95	17.75	0.48	18.23	16.152	NA
		7/24/95	17.98	0.02	18.00	16.773	0.002
		8/28/95	18.32	0.02	18.34	16.433	NA
		9/25/95	18.37	0.14	18.51	16.161	NA
		10/23/95	18.30	0.01	18.31	16.4715	NA
		11/27/95	17.94	0.03	17.97	16.7945	0.01
		12/28/95	16.75	0.16	16.91	17.744	0.85
		1/22/96	16.73	0.12	16.85	17.838	0.01
		2/26/96	13.40	0.02	13.42	21.353	0.08
		4/22/96	16.20	0.15	16.35	18.3125	0.01
		5/28/96	16.21	0.00	16.21	18.58	NA
		6/24/96	16.68	0.01	16.69	18.0915	NA
		7/22/96	17.20	0.02	17.22	17.553	NA
		8/23/96	17.49	0.03	17.52	17.2445	NA
		9/23/96	17.72	0.01	17.73	17.0515	NA
		10/28/96	17.18	0.01	17.19	17.5915	NA
		1/31/97	15.94	0.16	16.10	18.554	NA
		4/21/97	16.87	0.12	16.99	17.698	NA
		7/28/97	17.15	0.65	17.80	16.4375	NA
		10/14/97	17.68	0.62	18.30	15.963	0.5
		1/19/98	17.10	0.01	17.11	17.6715	0.1
		4/20/98	NP		17.17	17.62	0.1
		7/29/98	17.44	0.01	17.45	17.3315	0.1
	34.68	11/16/98	NP		17.89	16.79	–
		2/23/99	NP		16.19	18.49	
		5/18/99	NP		16.79	17.89	
		8/17/99	NP		17.37	17.31	
		11/11/99	NP		17.69	16.99	
Summary for Well B-1 (30 detail records)					SPH Recovered to Date:		1.76
B-2	35.35	3/28/95	NA		16.84	18.51	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-2	35.35	4/24/95	NA		17.02	18.33	NA
		5/22/95	NA		17.22	18.13	NA
		6/26/95	NA		17.48	17.87	NA
		8/28/95	19.58	0.26	19.84	15.289	NA
		9/25/95	NA		18.18	17.17	NA
		10/23/95	NA		18.15	17.2	NA
		12/28/95	NA		16.56	18.79	NA
		1/22/96	16.48	0.02	16.50	18.833	NA
		4/22/96	NA		16.28	19.07	NA
		5/28/96	NA		16.14	19.21	NA
		6/24/96	NA		16.50	18.85	NA
		7/22/96	NA		16.99	18.36	NA
		8/23/96	NA		17.48	17.87	NA
		9/23/96	NA		17.50	17.85	NA
		10/28/96	NA		17.60	17.75	NA
		1/31/97	NP		15.69	19.66	--
		4/21/97	NP		16.52	18.83	--
		7/28/97	NP		16.94	18.41	0.00
		10/14/97	NP		17.57	17.78	--
		1/19/98	NP		16.87	18.48	--
		4/20/98	NP		16.93	18.42	--
		7/29/98	NP		17.52	17.83	--
		11/16/98	17.87	0.01	17.88	17.4615	0
		2/23/99	NP		15.90	19.45	
		5/18/99	NP		16.64	18.71	
		8/17/99	NP		17.45	17.9	
		11/11/99	NP		17.86	17.49	
Summary for Well B-2 (28 detail records)					SPH Recovered to Date:		0.00
B-3	36.79	1/31/97	NP		17.26	19.53	--
		4/21/97	NP		18.48	18.31	--
		7/28/97	NP		18.83	17.96	--
		10/14/97	NP		19.38	17.41	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-3	36.79	1/19/98	NP		18.25	18.54	--
		4/20/98	NP		18.86	17.93	--
		7/29/98	NP		18.84	17.95	--
	34.81	11/16/98	NP		19.24	15.57	--
		2/23/99	NP		17.21	17.6	
		5/18/99	NP		18.01	16.8	
		8/17/99	NP		18.79	16.02	
		11/11/99	NP		19.15	15.66	
Summary for Well B-3 (12 detail records)					SPH Recovered to Date:		
B-4	34.79	3/28/95	17.92	0.71	18.63	15.5565	NA
		4/24/95	18.01	1.16	19.17	14.634	NA
		5/22/95	18.11	1.13	19.24	14.5895	NA
		6/26/95	18.27	1.01	19.28	14.6515	NA
		7/24/95	18.53	0.11	18.64	16.0565	0.15
		8/28/95	18.62	0.01	18.63	16.1515	NA
		9/25/95	18.82	0.13	18.95	15.7295	NA
		10/23/95	18.83	0.02	18.85	15.923	NA
		11/27/95	18.56	0.06	18.62	16.119	0.37
		1/22/96	17.60	0.04	17.64	17.116	0.24
		2/26/96	NA		13.68	21.11	NA
		4/22/96	16.35	0.09	16.44	18.2735	0.02
		5/28/96	16.35	0.07	16.42	18.3105	0.02
		8/23/96	18.35	0.00	18.35	16.44	NA
		9/23/96	18.44	0.01	18.45	16.3315	NA
		10/28/96	17.56	1.03	18.59	15.3245	NA
		1/31/97	17.00	0.48	17.48	16.902	3.25
		4/21/97	NP		17.71	17.08	0.1
		7/28/97	18.50	0.02	18.52	16.253	0.1
		10/15/97	18.55	0.01	18.56	16.2215	1.5
		1/19/98	17.91	0.06	17.97	16.769	1.5
		4/20/98	17.95	0.05	18.00	16.7475	1.2
		7/29/98	18.13	0.01	18.14	16.6415	1.3

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-4	34.70	11/16/98	NP		18.49	16.21	--
		2/23/99	16.89	1.04	17.93	15.886	
		5/18/99	17.51	0.01	17.52	17.1715	0.1
	34.7	8/17/99	NP		18.04	16.66	
		11/11/99	NP		18.41	16.29	
Summary for Well B-4 (28 detail records)					SPH Recovered to Date:		9.85
B-5	34.79	1/22/96	NA		16.18	18.61	NA
		2/26/96	NA		14.40	20.39	NA
		5/28/96	NA		15.59	19.2	NA
		6/24/96	DRY		DRY		DRY
		7/22/96	DRY		DRY		DRY
		8/23/96	DRY		DRY		DRY
		9/23/96	NA		17.02	17.77	NA
		10/28/96	NA		17.10	17.69	NA
	34.83	1/31/97	NP		15.30	19.53	--
		4/21/97	NP		16.08	18.75	--
		7/28/97	NP		16.54	18.29	0.00
		10/14/97	NP		17.10	17.73	--
		1/19/98	NP		16.54	18.29	--
		4/20/98	NP		16.48	18.35	--
		7/29/98	NP		16.79	18.04	--
		11/16/98	NP		17.35	17.48	--
		2/23/99	NP		15.56	19.27	
		5/18/99	NP		18.17	16.66	
		8/17/99	NP		16.93	17.9	
		11/11/99	NP		17.29	17.54	
Summary for Well B-5 (20 detail records)					SPH Recovered to Date:		0.00
B-6	35.41	1/22/96	NP		16.44	18.97	NA
		2/26/96	NP		15.60	19.81	NA
		4/22/96	NA		16.15	19.26	NA
		5/28/96	NA		16.11	19.3	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-6	35.41	6/24/96	NA		16.47	18.94	NA
		7/22/96	NA		16.91	18.5	NA
		8/23/96	NA		17.99	17.42	NA
		9/23/96	NA		17.45	17.96	NA
		10/28/96	NA		17.34	18.07	NA
		1/31/97	NP		15.47	19.94	--
		4/21/97	NP		16.31	19.1	--
		7/28/97	NP		16.87	18.54	0.00
		10/14/97	NP		17.47	17.94	--
		1/19/98	NP		16.85	18.56	--
		4/20/98	NP		16.78	18.63	--
		7/29/98	NP		17.16	18.25	--
	35.49	11/16/98	NP		17.79	17.7	--
		2/23/99	NP		15.70	19.79	
		5/18/99	NP		16.48	19.01	
		8/17/99	NP		17.35	18.14	
		11/11/99	NP		17.7	17.79	
Summary for Well B-6 (21 detail records)					SPH Recovered to Date:		0.00
B-16	35.82	3/24/95	NA		16.99	18.83	NA
		4/24/95	NA		17.12	18.7	NA
		5/22/95	NA		17.37	18.45	NA
		6/19/95	NA		17.59	18.23	NA
		7/24/95	NA		17.89	17.93	NA
		8/28/95	NA		18.10	17.72	NA
		9/25/95	NA		18.35	17.47	NA
		10/23/95	NA		18.30	17.52	NA
		11/27/95	NA		17.90	17.92	NA
		1/22/96	NA		0.00		NA
		2/26/96	NA		13.30	22.52	NA
		4/22/96	NA		16.04	19.78	NA
		5/28/96	NA		16.39	19.43	NA
		6/24/96	NA		16.71	19.11	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-16	35.82	7/22/96	NA		17.19	18.63	NA
		9/23/96	NA		17.76	18.06	NA
		10/28/96	NA		17.82	18	NA
		1/31/97	NP		15.75	20.07	--
		4/21/97	NP		16.65	19.17	--
		7/28/97	NP		17.15	18.67	0.00
		10/14/97	NP		17.79	18.03	--
		1/19/98	NP		17.16	18.66	--
		4/20/98	NP		17.07	18.75	--
		7/29/98	NP		17.66	18.16	--
		11/16/98	NP		18.12	17.7	--
		2/23/99	NP		16.02	19.8	
		5/18/99	NP		16.77	19.05	
		8/17/99	NP		17.62	18.2	
		11/11/99	NP		18.06	17.76	
Summary for Well B-16 (29 detail records)					SPH Recovered to Date:		0.00
B-17	35.59	3/28/95	16.95	0.00	16.95	18.64	NA
		4/24/95	NA		17.15	18.44	NA
		5/22/95	17.36	0.00	17.36	18.23	NA
		6/26/95	17.61	0.00	17.61	17.98	NA
		7/24/95	17.79	0.01	17.80	17.7815	NA
		8/28/95	18.78	0.01	18.79	16.7915	NA
		9/25/95	NA		18.23	17.36	NA
		10/23/95	NA		18.21	17.38	NA
		11/27/95	17.85	0.00	17.85	17.74	NA
		12/28/95	NA		16.85	18.74	NA
		1/22/96	NA		16.78	18.81	NA
		2/26/96	13.35	0.01	13.36	22.2215	NA
		4/22/96	16.44	0.00	16.44	19.15	NA
		5/28/96	16.40	0.00	16.40	19.19	NA
		6/24/96	16.40	0.00	16.40	19.19	NA
		7/22/96	17.16	0.00	17.16	18.43	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-17	35.59	8/23/96	17.57	0.00	17.57	18.02	NA
		9/23/96	NA		17.68	17.91	NA
		10/28/96	NA		17.75	17.84	NA
		1/31/97	NP		15.86	19.73	--
		4/21/97	NP		16.66	18.93	--
		7/28/97	NP		17.15	18.44	0.00
		10/14/97	NP		17.74	17.85	--
		1/19/98	NP		17.17	18.42	--
		4/20/98	NP		17.06	18.53	--
		7/29/98	NP		17.54	18.05	--
	35.61	11/16/98	NP		18.02	17.59	0.2
		2/23/99	NP		17.10	18.51	
		5/18/99	NP		16.76	18.85	
		8/17/99	NP		17.55	18.06	
		11/11/99	NP		17.95	17.66	
Summary for Well B-17 (31 detail records)					SPH Recovered to Date:		0.20
B-18	35.79	3/28/95	NA		19.28	16.51	NA
		4/24/95	NA		19.38	16.41	NA
		5/22/95	NA		19.44	16.35	NA
		6/26/95	NA		19.56	16.23	NA
		7/24/95	NA		19.74	16.05	NA
		8/28/95	NA		19.43	16.36	NA
		9/25/95	NA		20.02	15.77	NA
		10/23/95	NA		20.08	15.71	NA
		12/28/95	NA		18.66	17.13	NA
		1/22/96	0	0.00	18.20	2.12	NA
		2/26/96	0	0.00	18.38	1.787	NA
		4/22/96	NA		18.50	17.29	NA
		5/28/96	NA		17.84	17.95	NA
		6/24/96	NA		18.35	17.44	NA
		7/22/96	NA		18.97	16.82	NA
		8/23/96	NA		17.50	18.29	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-18	35.79	9/23/96	NA		19.43	16.36	NA
		10/28/96	NA		19.47	16.32	NA
		1/31/97	NP		18.09	17.7	--
		4/21/97	NP		18.94	16.85	--
		7/28/97	NP		19.14	16.65	--
		10/14/97	NP		19.64	16.15	--
		1/19/98	NP		19.03	16.76	--
		4/20/98	NP		18.92	16.87	--
		7/29/98	NP		19.04	16.75	--
	35.49	11/16/98	NP		19.36	16.13	--
		2/23/99	NP		17.88	17.61	
		5/18/99	NP		18.38	17.11	0.1
		8/17/99	NP		18.90	16.59	
		11/11/99	NP		19.27	16.22	
Summary for Well B-18 (30 detail records)					SPH Recovered to Date:		0.10
B-22	35.83	3/28/95	NA		18.50	17.33	NA
		4/24/95	NA		19.10	16.73	NA
		5/22/95	NA		19.09	16.74	NA
		6/26/95	NA		19.26	16.57	NA
		9/25/95	NA		20.50	15.33	NA
		10/23/95	NA		19.96	15.87	NA
		12/28/95	NA		18.59	17.24	0.02
		1/22/96	NA		18.88	16.95	NA
		2/26/96	NA		12.05	23.78	NA
		4/22/96	NA		17.75	18.08	NA
		5/28/96	NA		17.31	18.52	NA
		6/24/96	NA		18.12	17.71	NA
		7/22/96	NA		19.09	16.74	NA
		8/23/96	NA		19.03	16.8	NA
		9/23/96	NA		19.79	16.04	NA
		10/28/96	NA		19.75	16.08	NA
		1/31/97	17.92	0.01	17.93	17.8915	0.1

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-22	35.83	4/21/97	NP		18.67	17.16	--
		7/28/97	18.89	2.26	21.15	12.759	1.0
		10/14/97	19.56	0.04	19.60	16.196	1.75
		1/19/98	18.55	1.35	19.90	14.7825	4.0
		4/20/98	18.80	0.76	19.56	15.624	2.6
		7/29/98	NP		18.56	17.27	--
		11/16/98	NP		19.10	16.73	0.1
		2/23/99	NP		17.09	18.74	
		5/18/99	NP		17.69	18.14	0.1
		8/17/99	NP		18.35	17.48	
		11/11/99	18.85	0.07	18.92	16.8505	
Summary for Well B-22 (28 detail records)					SPH Recovered to Date:		9.67
B-25	37.60	4/21/97	NP		15.29	22.31	--
		10/14/97	NP		19.75	17.85	--
		1/19/98	NP		19.05	18.55	--
		4/20/98	NP		19.08	18.52	--
		7/29/98	NP		19.02	18.58	--
	35.78	11/16/98	NP		19.50	16.28	--
		2/23/99	NP		17.49	18.29	
		5/18/99	NP		18.02	17.76	
		8/17/99	NP		18.78	17	
		11/11/99	NP		19.31	16.47	
Summary for Well B-25 (10 detail records)					SPH Recovered to Date:		
B-27	35.74	3/28/95	17.25	0.27	17.52	17.9905	NA
		4/24/95	17.70	0.31	18.01	17.4665	NA
		5/22/95	17.85	0.32	18.17	17.298	NA
		6/26/95	17.91	1.12	19.03	15.758	NA
		7/24/95	18.11	1.14	19.25	15.521	NA
		8/28/95	18.75	0.50	19.25	16.065	NA
		9/25/95	18.50	1.10	19.60	15.205	NA
		10/23/95	18.59	1.10	19.69	15.115	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-27	35.74	11/27/95	18.50	0.30	18.80	16.685	0.8
		1/22/96	17.44	0.43	17.87	17.5045	0.78
		2/26/96	13.38	0.31	13.69	21.7865	0.25
		4/22/96	16.68	0.27	16.95	18.5605	0.12
		8/23/96	18.12	0.56	18.68	16.584	0.31
		9/23/96	18.34	0.36	18.70	16.734	NA
		10/28/96	18.58	0.11	18.69	16.9565	NA
		1/31/97	16.43	2.20	18.63	15.24	4.0
		4/21/97	17.37	0.13	17.50	18.1295	0.6
		7/25/97	NP		17.86	17.88	--
		10/15/97	18.52	0.01	18.53	17.2015	0.75
		1/19/98	NP		17.94	17.8	6.0
		4/20/98	17.86	0.01	17.87	17.8615	1.1
		7/29/98	18.19	0.02	18.21	17.513	0.2
		11/16/98	18.65	0.59	19.24	15.9985	0.6
		2/23/99	16.63	1.55	18.18	16.2425	
		5/18/99	17.36	0.01	17.37	18.3615	0.1
		8/17/99	NP		17.98	17.76	
		11/11/99	NP		18.53	17.21	
Summary for Well	B-27 (27 detail records)				SPH Recovered to Date:		15.61
B-35	33.58	4/24/95	16.10	0.23	16.33	17.0545	NA
		5/22/95	16.24	0.19	16.43	16.9885	NA
		6/26/95	16.45	0.23	16.68	16.7045	NA
		7/24/95	16.65	0.21	16.86	16.5415	NA
		8/28/95	17.35	0.17	17.52	15.9155	NA
		9/25/95	17.02	0.30	17.32	16.005	NA
		10/23/95	16.94	0.21	17.15	16.2515	NA
		11/27/95	16.50	0.06	16.56	16.969	0.08
		12/28/95	15.60	0.01	15.61	17.9615	0.02
		1/22/96	15.52	0.05	15.57	17.9675	NA
		2/26/96	13.50	0.05	13.55	19.9875	NA
		4/22/96	17.78	0.06	17.84	15.689	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-35	33.58	5/28/96	15.08	0.00	15.08	18.5	NA
		6/24/96	NA		15.54	18.04	NA
		7/22/96	NA		16.06	17.52	NA
		8/23/96	NA		16.85	16.73	NA
		9/23/96	NA		16.60	16.98	NA
		10/28/96	16.85	0.06	16.91	16.619	NA
		1/31/97	NP		14.84	18.74	--
		4/21/97	NP		15.74	17.84	--
		7/28/97	NP		16.05	17.53	--
		10/14/97	NP		16.57	17.01	--
		1/19/98	NP		15.95	17.63	--
		4/20/98	NP		16.04	17.54	--
		7/29/98	NP		16.31	17.27	--
	33.56	11/16/98	NP		16.69	16.87	--
		2/23/99	NP		15.08	18.48	
		5/18/99	NP		15.68	17.88	
		8/17/99	NP		16.23	17.33	
		11/11/99	NP		16.57	16.99	
Summary for Well B-35 (30 detail records)					SPH Recovered to Date:		0.10
B-36	30.97	3/28/95	NA		14.65	16.32	NA
		4/24/95	NA		14.95	16.02	NA
		5/22/95	NA		15.03	15.94	NA
		6/26/95	NA		15.24	15.73	NA
		7/24/95	NA		15.47	15.5	NA
		8/28/95	NA		15.35	15.62	NA
		9/25/95	NA		15.82	15.15	NA
		10/23/95	NA		15.60	15.37	NA
		12/28/95	NA		13.91	17.06	NA
		1/22/96	0	0.00	13.93	5.1995	NA
		2/26/96	0	0.00	10.75	11.0825	NA
		4/22/96	NA		14.10	16.87	NA
		5/28/96	NA		13.01	17.96	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-36	30.97	6/24/96	NA		13.84	17.13	NA
		7/22/96	NA		15.01	15.96	NA
		8/23/96	NA		15.81	15.16	NA
		9/23/96	NA		15.65	15.32	NA
		10/28/96	NA		15.55	15.42	NA
		1/31/97	NP		13.44	17.53	--
		4/21/97	NP		14.66	16.31	--
		7/28/97	NP		15.01	15.96	--
		10/14/97	NP		15.55	15.42	--
		1/19/98	NP		14.43	16.54	--
		4/20/98	NP		15.06	15.91	--
		7/29/98	NP		18.07	12.9	--
	31.02	11/16/98	NP		15.46	15.56	--
		2/23/99	NP		13.12	17.9	
		5/18/99	NP		14.23	16.79	
		8/17/99	NP		15.01	16.01	
		11/11/99	NP		15.40	15.62	
Summary for Well B-36 (30 detail records)					SPH Recovered to Date:		
B-37	35.24	3/28/95	NA		18.51	16.73	NA
		4/24/95	NA		19.66	15.58	NA
		5/22/95	NA		19.62	15.62	NA
		6/26/95	NA		19.75	15.49	NA
		7/24/95	NA		20.08	15.16	NA
		8/28/95	NA		20.10	15.14	NA
		9/25/95	20.41	0.01	20.42	14.8115	NA
		10/23/95	20.44	0.01	20.45	14.7815	NA
		11/27/95	19.90	0.00	19.90	15.34	NA
		12/28/95	19.66	0.00	19.66	15.58	NA
		1/22/96	18.20	0.03	18.23	16.9845	NA
		2/26/96	NA		14.15	21.09	NA
		4/22/96	NA		18.90	16.34	NA
		5/28/96	NA		17.94	17.3	NA

COP0015061

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-37	35.24	6/24/96	NA		19.13	16.11	NA
		7/22/96	NA		20.13	15.11	NA
		8/23/96	NA		20.15	15.09	NA
		9/23/96	NA		20.76	14.48	NA
		10/28/96	NA		20.87	14.37	NA
		1/31/97	NP		19.29	15.95	2.0
		4/21/97	NP		19.98	15.26	0.0
		7/28/97	NP		20.30	14.94	--
		10/14/97	NP		20.86	14.38	--
		1/19/98	NP		19.95	15.29	--
		4/20/98	NP		20.22	15.02	--
		7/29/98	NP		19.60	15.64	--
	35.83	11/16/98	NP		20.23	15.6	--
		2/23/99	NP		11.03	24.8	
		5/18/99	NP		18.56	17.27	
		8/17/99	NP		19.41	16.42	
		11/11/99	NP		19.89	15.94	
Summary for Well B-37 (31 detail records)					SPH Recovered to Date:		2.00
B-38	34.75	3/28/95	18.95	1.95	20.90	12.1925	NA
		4/24/95	19.17	1.51	20.68	12.7865	NA
		5/22/95	19.13	1.45	20.58	12.9375	NA
		6/26/95	19.30	1.16	20.46	13.304	NA
		7/24/95	19.75	0.17	19.92	14.6855	0.2
		8/28/95	19.82	0.71	20.53	13.6165	NA
		9/25/95	19.99	1.03	21.02	12.8545	NA
		10/23/95	20.00	1.03	21.03	12.8445	NA
		11/27/95	19.50	0.32	19.82	14.658	0.81
		1/22/96	18.89	0.14	19.03	15.601	0.45
		2/26/96	13.70	0.37	14.07	20.3655	1.31
		4/22/96	18.63	0.25	18.88	15.6575	NA
		7/22/96	19.59	1.25	20.84	12.8475	NA
		8/23/96	18.70	0.03	18.73	15.9945	NA

COP0015062

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-38	34.75	9/23/96	20.18	0.78	20.96	13.127	NA
		10/28/96	20.18	0.70	20.88	13.275	NA
		1/31/97	18.80	0.45	19.25	15.1175	2.0
		4/21/97	19.39	0.64	20.03	14.176	0.6
		7/25/97	19.78	0.21	19.99	14.5815	0.75
		10/14/97	20.30	0.01	20.31	14.4315	1.5
		1/19/98	NM		NM		--
Summary for Well B-38 (21 detail records)					SPH Recovered to Date:		7.62
B-40	33.19	3/28/95	17.55	0.09	17.64	15.4735	NA
		4/24/95	17.84	0.12	17.96	15.128	NA
		5/22/95	17.75	0.11	17.86	15.2365	NA
		6/26/95	17.95	0.11	18.06	15.0365	NA
		8/28/95	18.40	0.01	18.41	14.7715	NA
		9/25/95	NA		18.77	14.42	NA
		10/23/95	18.74	0.01	18.75	14.4315	NA
		11/27/95	17.98	0.02	18.00	15.173	NA
		12/28/95	17.23	0.00	17.23	15.96	NA
		1/22/96	NA		16.40	16.79	NA
		2/26/96	NA		12.75	20.44	NA
		4/22/96	17.01	0.00	17.01	16.18	NA
		5/28/96	15.78	0.29	16.07	16.8735	NA
		6/24/96	16.99	0.15	17.14	15.9225	0.23
		7/22/96	18.32	0.12	18.44	14.648	0.01
		8/23/96	18.87	0.06	18.93	14.209	0.02
		9/23/96	19.06	0.06	19.12	14.019	NA
		10/28/96	NA		19.02	14.17	NA
		1/31/97	16.76	0.54	17.30	15.431	NA
		4/21/97	17.79	0.02	17.81	15.363	0.4
		7/25/97	18.86	0.04	18.90	14.256	1.5
		10/14/97	NP		19.89	13.3	0.25
		1/19/98	NP		17.53	15.66	--
		4/20/98	NP		18.45	14.74	--

COP0015063

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-40	33.19	7/29/98	18.25	0.37	18.62	14.2555	4.0
	34.70	11/16/98	18.55	1.14	19.69	14.041	3.0
		2/23/99	16.25	0.89	17.14	16.8035	
		5/18/99	17.10	0.14	17.24	17.341	1.2
	34.7	8/17/99	17.92	1.08	19.00	14.782	1.0
		11/11/99	18.36	1.03	19.39	14.4345	1.25
Summary for Well B-40 (30 detail records)					SPH Recovered to Date:		12.86
B-41	34.85	3/28/95	18.80	0.08	18.88	15.902	NA
		4/24/95	18.93	0.06	18.99	15.809	NA
		5/22/95	18.95	0.07	19.02	15.7705	NA
		6/26/95	19.11	0.06	19.17	15.629	NA
		8/28/95	18.55	0.70	19.25	15.005	NA
		9/25/95	19.73	0.20	19.93	14.75	NA
		10/23/95	19.70	0.60	20.30	14.04	NA
		11/27/95	18.50	0.15	18.65	16.0725	0.23
		1/22/96	17.38	0.04	17.42	17.396	0.18
		2/26/96	13.40	0.41	13.81	20.6915	NA
		4/22/96	12.75	0.23	12.98	21.6745	NA
		9/23/96	19.38	0.02	19.40	15.433	0.06
		10/28/96	19.87	0.08	19.95	14.832	NA
		1/31/97	NP		18.31	16.54	--
		4/21/97	18.51	0.03	18.54	16.2845	0.2
		7/25/97	18.13	0.70	18.83	15.425	0.1
		10/14/97	NP		19.40	15.45	--
		1/19/98	NM		NM		--
		4/20/98	18.52	0.11	18.63	16.1265	1.5
		7/29/98	NP		18.32	16.53	--
	34.63	11/16/98	NP		18.79	15.84	--
		2/23/99	NP		16.92	17.71	
		5/18/99	NP		17.46	17.17	0.1
		8/17/99	NP		18.20	16.43	
		11/11/99	NP		18.64	15.99	

COP0015064

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Tosco				
Summary for Well B-41 (25 detail records)					**SPH Recovered to Date:**		2.37
DW-1	35.93	1/26/98	NP		19.56	16.37	--
		7/29/98	NP		19.37	16.56	--
		2/23/99	NP		18.07	17.86	
		5/18/99	NP		18.58	17.35	
		8/17/99	NP		19.23	16.7	
		11/11/99	NP		19.67	16.26	
Summary for Well DW-1 (6 detail records)					**SPH Recovered to Date:**		
DW-2	36.05	1/27/98	NP		19.65	16.4	--
		7/29/98	NP		19.52	16.53	--
		2/23/99	NP		18.16	17.89	
		5/18/99	NP		18.65	17.4	
		8/17/99	NP		19.31	16.74	
		11/11/99	NP		19.76	16.29	
Summary for Well DW-2 (6 detail records)					**SPH Recovered to Date:**		
EX-39	33.92	3/28/95	18.14	0.04	18.18	15.706	NA
		4/24/95	18.31	0.03	18.34	15.5545	NA
		5/22/95	18.28	0.03	18.31	15.5845	NA
		6/26/95	18.43	0.09	18.52	15.3235	NA
		7/24/95	18.73	0.13	18.86	14.9495	NA
		8/28/95	18.95	0.11	19.06	14.7665	NA
		9/25/95	19.08	0.14	19.22	14.581	NA
		10/23/95	19.09	0.20	19.29	14.46	NA
		11/27/95	19.55	0.07	19.62	14.2405	0.11
		12/28/95	18.05	0.18	18.23	15.537	0.04
		1/22/96	17.03	0.07	17.10	16.7605	0.01
		2/26/96	13.54	0.46	14.00	19.529	0.03
		4/22/96	18.65	0.08	18.73	15.122	0.9
		5/28/96	16.64	0.12	16.76	17.058	0.02
		6/24/96	17.67	0.72	18.39	14.918	0.03

COP0015065

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
EX-39	33.92	7/22/96	18.68	0.03	18.71	15.1845	0.01
		8/23/96	19.18	0.87	20.05	13.1305	0.4
		9/23/96	19.42	0.09	19.51	14.3335	NA
		10/28/96	19.25	0.04	19.29	14.596	NA
		1/31/97	18.27	0.91	19.18	13.9665	2.0
		4/21/97	18.43	0.10	18.53	15.305	0.4
		7/25/97	18.72	0.97	19.69	13.4055	2.75
		10/15/97	19.45	0.76	20.21	13.064	3.3
		1/19/98	18.39	0.58	18.97	14.457	1.0
		4/20/98	18.51	2.15	20.66	11.4325	3.5
	33.09	7/29/98	17.71	0.75	18.46	13.9925	28.0
		11/16/98	NP		19.45	13.64	–
		2/23/99	16.79	0.09	16.88	16.1335	
		5/18/99	16.81	0.46	17.27	15.429	3.5
		8/17/99	17.60	0.43	18.03	14.6945	0.6
		11/11/99	18.02	0.83	18.85	13.5345	1.5
Summary for Well EX-39 (31 detail records)					SPH Recovered to Date:		48.10
IF-1		2/23/99	NP		18.71		
		8/17/99	NP		19.93		
		11/11/99	NP		20.30		
Summary for Well IF-1 (3 detail records)					SPH Recovered to Date:		
IF-2		2/23/99	NP		18.76		
		5/18/99	NP		19.22		
		8/17/99	NP		19.98		
		11/11/99	NP		20.32		
Summary for Well IF-2 (4 detail records)					SPH Recovered to Date:		
IT-E	36.44	1/31/97	18.85	0.62	19.47	16.443	0.5
		4/21/97	19.69	0.63	20.32	15.5845	0.3
		7/28/97	20.05	0.60	20.65	15.28	2.0
		10/14/97	20.69	0.03	20.72	15.6945	0.8

COP0015066

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
IT-E	36.44	1/19/98	19.79	0.01	19.80	16.6315	--
		4/22/98	NP		19.83	16.61	--
		7/29/98	NP		19.70	16.74	--
	36.07	11/16/98	NP		20.13	15.94	--
		2/23/99	NP		18.20	17.87	
		5/18/99	NP		18.78	17.29	
		8/17/99	NP		19.70	16.37	
		11/11/99	NP		19.92	16.15	
Summary for Well IT-E (12 detail records)					SPH Recovered to Date:		3.60
IT-W	35.99	1/31/97	NP		16.65	19.34	--
		4/21/97	NP		17.44	18.55	--
		7/28/97	NP		17.81	18.18	--
		10/14/97	NP		18.33	17.66	--
		1/19/98	NP		17.72	18.27	--
		4/20/98	NP		17.81	18.18	--
		7/29/98	NP		18.08	17.91	--
		11/16/98	NP		18.49	17.5	--
		2/23/99	NP		16.85	19.14	
		5/18/99	NP		17.47	18.52	
		8/17/99	NP		18.05	17.94	
		11/11/99	NP		18.37	17.62	
Summary for Well IT-W (12 detail records)					SPH Recovered to Date:		
OF-1	-	2/23/99	NP		17.88		
		5/18/99	NP		18.40		
		8/17/99	NP		19.11		
		11/11/99	NP		19.48		
Summary for Well OF-1 (4 detail records)					SPH Recovered to Date:		
OF-2	-	2/23/99	NP		18.04		
		5/18/99	NP		18.52		
		8/17/99	NP		19.25		

COP0015067

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Tosco				
OF-2		11/11/99	NP		19.63		
Summary for Well OF-2 (4 detail records)					SPH Recovered to Date:		
P-1	18.24	11/16/98	NP		9.43	8.81	
		2/23/99	NP		5.99	12.25	
		5/18/99	NP		5.49	12.75	
		11/11/99	NP		6.99	11.25	
Summary for Well P-1 (4 detail records)					SPH Recovered to Date:		
P-2	17.85	11/16/98	NP		5.17	12.68	
		2/23/99	NP		3.78	14.07	
		5/18/99	NP		3.81	14.04	
		11/11/99	NP		5.07	12.78	
Summary for Well P-2 (4 detail records)					SPH Recovered to Date:		
RES-N	38.58	3/28/95	23.14	0.76	23.90	14.034	NA
		4/24/95	23.17	1.74	24.91	12.191	NA
		5/22/95	23.17	0.75	23.92	14.0225	NA
		6/26/95	23.26	0.75	24.01	13.9325	NA
		8/28/95	23.64	0.68	24.32	13.682	NA
		9/25/95	23.75	0.50	24.25	13.905	NA
		10/23/95	23.80	0.60	24.40	13.67	NA
		11/27/95	23.26	0.60	23.86	14.21	1.59
		12/28/95	22.59	0.02	22.61	15.953	1.21
		1/22/96	20.91	0.03	20.94	17.6145	5.0
		2/26/96	23.34	0.76	24.10	13.834	41.25
		4/22/96	22.14	0.02	22.16	16.403	NA
		5/28/96	21.11	0.00	21.11	17.47	NA
		6/24/96	22.41	0.00	22.41	16.17	NA
		7/22/96	22.88	0.00	22.88	15.7	NA
		7/24/96	23.45	0.76	24.21	13.724	NA
		8/23/96	NA		22.21	16.37	NA
		9/23/96	23.74	0.02	23.76	14.803	NA

COP0015068

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
RES-N	38.58	10/28/96	NA		24.32	14.26	NA
		1/31/97	22.45	0.09	22.54	15.9635	2.0
		4/21/97	23.00	0.01	23.01	15.5615	NA
		7/28/97	23.46	0.02	23.48	15.083	0.1
		10/14/97	23.84	0.02	23.86	14.703	1.3
		1/19/98	NM		NM		--
		4/20/98	NP		21.65	16.93	--
		7/29/98	NP		21.41	17.17	--
		11/16/98	NP		21.98	16.6	--
		2/23/99	NP		20.15	18.43	
		5/18/99	NP		20.64	17.94	
		8/17/99	NP		21.3	17.28	
		11/11/99	NP		21.75	16.83	
Summary for Well	RES-N (31 detail records)					SPH Recovered to Date:	52.45
RES-O	36.03	3/28/95	17.61	0.04	17.65	18.346	NA
		4/24/95	17.78	0.02	17.80	18.213	NA
		5/22/95	17.99	0.02	18.01	18.003	NA
		6/26/95	18.26	0.02	18.28	17.733	NA
		8/28/95	17.30	0.25	17.55	18.2675	NA
		9/25/95	18.60	0.61	19.21	16.3015	NA
		10/23/95	18.90	0.14	19.04	16.871	NA
		11/27/95	19.25	0.01	19.26	16.7615	0.01
		12/28/95	17.53	0.01	17.54	18.4815	NA
		1/22/96	17.42	0.07	17.49	18.4805	NA
		2/26/96	12.50	0.11	12.61	23.3265	NA
		4/22/96	10.95	0.10	11.05	24.895	NA
		5/28/96	16.82	0.00	16.82	19.21	NA
		6/24/96	17.18	0.01	17.19	18.8315	NA
		7/22/96	17.53	0.01	17.54	18.4815	NA
		8/23/96	18.10	0.01	18.11	17.9115	NA
		9/23/96	18.22	0.08	18.30	17.662	NA
		10/28/96	18.10	0.05	18.15	17.8375	NA

COP0015069

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
RES-O	36.03	1/31/97	NP		16.20	19.83	--
		4/21/97	NP		17.00	19.03	--
		7/28/97	NP		17.65	18.38	--
		10/14/97	NP		18.39	17.64	--
		1/19/98	NP		17.60	18.43	--
		4/20/98	NP		17.38	18.65	--
		7/29/98	NP		17.91	18.12	--
		11/18/98	NP		18.52	17.51	--
		2/23/99	NP		16.22	19.81	
		5/18/99	NP		16.88	19.15	
		8/17/99	NP		17.79	18.24	
		11/11/99	NP		18.20	17.83	
Summary for Well RES-O (30 detail records)					SPH Recovered to Date:		0.01
U-2	35.02	3/28/95	NA		14.88	20.14	NA
		4/24/95	NA		15.10	19.92	NA
		5/22/95	NA		15.25	19.77	NA
		6/26/95	NA		15.52	19.5	NA
		7/24/95	NA		15.75	19.27	NA
		8/28/95	NA		15.65	19.37	NA
		9/25/95	NA		15.20	19.82	NA
		10/23/95	NA		16.57	18.45	NA
		12/28/95	NA		15.06	19.96	NA
		1/22/96	NA		16.44	18.58	NA
		2/26/96	NA		14.35	20.67	NA
		4/22/96	NA		15.01	20.01	NA
		5/28/96	NA		13.98	21.04	NA
		6/24/96	NA		14.36	20.66	NA
		7/22/96	NA		14.96	20.06	NA
		8/23/96	NA		15.10	19.92	NA
		9/23/96	NA		14.93	20.09	NA
		10/28/96	NA		14.85	20.17	NA
		1/31/97	NP		13.86	21.16	--

COP0015070

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
U-2	35.02	4/21/97	NP		14.52	20.5	--
		7/28/97	NP		15.27	19.75	--
		10/15/97	NP		16.28	18.74	--
		1/19/98	NP		15.78	19.24	--
		4/20/98	NP		15.30	19.72	--
		7/29/98	NP		15.80	19.22	0.1
		11/16/98	NP		16.71	18.31	--
		2/23/99	NP		14.29	20.73	
		5/18/99	NP		14.61	20.41	
		8/17/99	NP		15.65	19.37	
		11/11/99	NP		16.51	18.51	
Summary for Well U-2 (30 detail records)					**SPH Recovered to Date:**		**0.10**
U-3	35.25	3/28/95	NA		12.72	22.53	NA
		4/24/95	NA		12.93	22.32	NA
		5/22/95	NA		13.55	21.7	NA
		6/26/95	13.89	0.01	13.90	21.3415	NA
		7/24/95	NA		14.02	21.23	NA
		8/28/95	NA		19.65	15.6	NA
		9/25/95	NA		16.35	18.9	NA
		10/23/95	14.20	0.01	14.21	21.0315	NA
		11/27/95	14.20	0.00	14.20	21.05	NA
		12/28/95	12.71	0.00	12.71	22.54	NA
		1/22/96	16.56	0.02	16.58	18.653	NA
		2/26/96	14.51	-0.36	14.15	21.406	NA
		4/22/96	NA		15.15	20.1	NA
		5/28/96	NA		12.27	22.98	NA
		6/24/96	NA		12.69	22.56	NA
		7/22/96	NA		13.02	22.23	NA
		8/23/96	NA		13.15	22.1	NA
		9/23/96	NA		15.02	20.23	NA
		10/28/96	NA		17.90	17.35	NA
		1/31/97	NP		11.86	23.39	0.00

COP0015071

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
U-3	35.25	4/21/97	NP		12.82	22.43	0.00
		7/28/97	NP		13.83	21.42	0.00
		10/15/97	NP		14.23	21.02	--
		1/19/98	NP		13.04	22.21	--
		4/20/98	NP		13.23	22.02	--
		7/29/98	NP		14.07	21.18	--
		11/16/98	NP		14.42	20.83	--
		2/23/99	NP		12.89	22.36	
		5/18/99	NP		13.09	22.16	
		8/17/99	NP		14.16	21.09	
		11/11/99	NP		14.48	20.77	
Summary for Well U-3 (31 detail records)					SPH Recovered to Date:		0.00
U-4	34.46	3/28/95	17.42	3.98	21.40	700000000	NA
		4/24/95	15.60	6.17	21.77	7.4455	NA
		5/22/95	15.75	6.18	21.93	7.277	NA
		6/26/95	15.96	6.16	22.12	7.104	NA
		7/24/95	16.33	4.17	20.50	10.4155	NA
		8/28/95	17.23	3.72	20.95	10.348	5.2
		9/25/95	18.60	0.25	18.85	15.3975	NA
		10/23/95	17.35	3.90	21.25	9.895	NA
		11/27/95	16.40	2.40	18.80	13.62	1.22
		1/22/96	17.60	0.04	17.64	16.786	2.79
		2/26/96	12.85	0.30	13.15	21.055	0.98
		4/22/96	11.50	0.23	11.73	22.5345	0.31
		8/23/96	16.31	0.16	16.47	17.854	0.25
		9/23/96	16.61	0.09	16.70	17.6835	NA
		10/28/96	17.56	0.19	17.75	16.5485	NA
		1/31/97	14.80	2.25	17.05	15.4975	6.5
		4/21/97	15.26	0.09	15.35	19.0335	NA
		7/25/97	15.85	0.01	15.86	18.5915	0.1
		10/15/97	16.50	0.01	16.51	17.9415	0.75
		1/19/98	15.97	0.03	16.00	18.4345	2.0

COP0015072

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
U-4	34.46	4/20/98	15.72	2.42	18.14	14.263	3.0
		7/29/98	16.22	0.01	16.23	18.2215	0.3
		11/16/98	NP		16.82	17.64	--
		2/23/99	14.54	1.24	15.78	17.626	
		5/18/99	15.37	0.02	15.39	19.053	0.5
		8/17/99	NP		16.22	18.24	
		11/11/99	NP		16.81	17.65	
Summary for Well U-4 (27 detail records)					SPH Recovered to Date:		23.90
U-5	33.37	3/28/95	NA		18.21	15.16	NA
		4/24/95	NA		18.47	14.9	NA
		5/22/95	NA		18.33	15.04	NA
		6/26/95	NA		8.42	24.95	NA
		7/24/95	18.9	0.01	18.91	14.4515	NA
		8/28/95	19.13	0.12	19.25	14.018	NA
		9/25/95	19.27	0.25	19.52	13.6375	NA
		10/23/95	19.32	0.17	19.49	13.7355	NA
		11/27/95	18.50	0.10	18.60	14.685	0.03
	34.2	12/28/95	18.43	0.05	18.48	15.6775	0.07
		1/22/96	15.57	0.08	15.65	18.482	0.02
		2/26/96	13.55	0.15	13.70	20.3725	NA
		4/22/96	17.82	0.08	17.90	16.232	0.02
		5/28/96	16.52	0.01	16.53	17.6615	NA
		6/24/96	18.10	0.01	18.11	16.0815	NA
		7/22/96	19.39	0.03	19.42	14.7545	NA
		9/23/96	20.04	0.04	20.08	14.086	NA
		10/28/96	18.15	0.07	18.22	15.9205	NA
		1/31/97	NP		18.01	16.19	0.00
	34.20	4/21/97	NP		18.61	15.59	0.00
		7/28/97	NP		19.38	14.82	0.00
		10/15/97	NP		19.87	14.33	--
		1/19/98	NM		NM		--
		4/20/98	NP		19.58	14.62	--

COP0015073

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
U-5	33.38	7/29/98	NP		18.82	14.56	--
	34.13	11/16/98	NP		19.24	14.89	--
		2/23/99	NP		16.84	17.29	
		5/18/99	NP		17.5	16.63	
		8/17/99	NP		18.60	15.53	
		11/11/99	NP		19.10	15.03	
Summary for Well U-5 (30 detail records)					SPH Recovered to Date:		0.14
U-5A	33.77	3/28/95	4.73	1.47	6.20	26.3205	NA
		4/24/95	6.02	0.39	6.41	27.0285	NA
		5/22/95	6.52		NM		NA
		6/26/95	6.97		NM		0.5
		7/24/95	9.86	0.37	10.23	23.2255	NA
		8/28/95	9.50	0.45	9.95	23.4375	0.01
		9/25/95	NA		15.61	18.16	NA
		10/23/95	15.30	0.20	15.50	18.1	NA
		11/27/95	6.34	0.08	6.42	27.282	0.36
		12/28/95	5.97	0.42	6.39	27.023	0.25
		1/22/96	6.43	0.07	6.50	27.2105	0.07
		2/26/96	8.50	0.03	8.53	25.2145	0.08
		4/22/96	9.35	0.05	9.40	24.3275	0.05
		6/24/96	5.79	0.32	6.11	27.388	0.15
		7/22/96	6.47	0.07	6.54	27.1705	0.05
		8/23/96	7.21	0.89	8.10	24.9135	0.32
		9/23/96	8.58	1.31	9.89	22.7665	NA
		10/28/96	20.04	0.03	20.07	13.6745	NA
		1/31/97	4.59	0.27	4.86	28.6805	10.0
		4/21/97	5.33	0.04	5.37	28.366	NA
		7/25/97	6.89	0.06	6.95	26.769	1.1
		10/15/97	7.88	0.01	7.89	25.8715	0.5
		1/19/98	NP		6.51	27.26	--
		4/20/98	6.43	0.05	6.48	27.2475	2.7
		7/29/98	7.80	0.10	7.90	25.785	4.5

COP0015074

Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
U-5A	33.77	11/16/98	NP		8.99	24.78	--
		2/23/99	NP		4.78	28.99	
		5/18/99	5.97	0.02	5.99	27.763	0.4
		8/17/99	NP		7.74	26.03	
		11/11/99	NP		9.08	24.69	
Summary for Well U-5A (30 detail records)						**SPH Recovered to Date:**	**21.04**
						Total SPH Recovered (all wells)	579.47

Notes:
SPH = Separate Phase Hydrocarbon
NP = No product observed this gauging date
NA = Not available
NM = Not measured
* = Groundwater elevation is corrected for the presence of SPH using:
GWE=TOC-(DTW-(SPH thickness x Specific gravity of SPH))
Specific Gravity of SPH set to 0.85 g/cc
** = SPH recovered represents total product recovered for entire quarter
Negative numbers in SPH thickness field indicate possible data transcription error. Data is reported for completeness.

Wells Surveyed Dec. 1998:

B-1	B-12	B-35	U-5
B-3	B-17	B-36	IT-E
B-4	B-18	B-37	MW-27
B-6	B-20	B-40	MW-31
B-8	B-21	B-41	
B-9	B-25	DW-1	
B-10	B-28	P-1	
B-11	B-30	P-2	

COP0015075

ATTACHMENT A

SAMPLING PROTOCOL

CERTIFIED ANALYTICAL REPORTS

CHAIN-OF-CUSTODY DOCUMENTATION

ATTACHMENT A

Sampling Protocol

The groundwater sampling procedure employed by IT consists of first measuring depth to water and separate-phase hydrocarbon level and thickness (if present) in each well equipped with a Keck KIR-89 oil/water interface probe. Each well scheduled for sampling was then purged of a minimum of three casing volumes of water (or until dry) by using a double diaphragm pump with a flexible polyvinyl chloride (PVC) hose "stinger" system. The stinger system was decontaminated prior to and between uses with an Alconox™-water wash and a water rinse. Groundwater samples were collected using single-use, disposable polyethylene (PE) bailers after the wells recovered to at least 60 percent of the pre-purge static water level. The samples were placed into appropriate EPA-approved containers, labeled, logged onto chain-of-custody documents, and transported at 4°C to the selected analytical laboratory. Dissolved metal samples were filtered in the field using a 0.45-micron filter capsule, disposable Tygon® tubing and a peristaltic pump. Purge water was disposed of using facility treatment systems.

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RECEIVED
PORTLAND EMCON

IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
Ch-111899-1 B-7	P911407-01	Water	11/18/99
Ch-111899-3 B-10	P911407-02	Water	11/18/99
Ch-111899-4 B-11	P911407-03	Water	11/18/99
Ch-111899-5 B-14	P911407-04	Water	11/18/99
Ch-111899-7 B-28	P911407-06	Water	11/18/99
Ch-111899-8 B-30	P911407-07	Water	11/18/99
Ch-111899-10 CR-8	P911407-09	Water	11/18/99
Ch-111899-11 CR-9	P911407-10	Water	11/18/99
Ch-111899-12 CR-11	P911407-11	Water	11/18/99
Ch-111899-14 CR-11 Dup	P911407-13	Water	11/18/99

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
Ch-111899-1			**P911407-01**				**Water**	
Benzene	1190793	11/30/99	11/30/99		0.0100	**0.559**	ug/l	
Toluene	"	"	"		0.0300	**0.484**	"	
Ethylbenzene	"	"	"		0.0200	**0.323**	"	
Xylenes (total)	"	"	"		0.0900	**0.291**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*109*	%	
Ch-111899-3			**P911407-02**				**Water**	
Benzene	1190709	11/24/99	11/24/99		0.150	**6.31**	ug/l	
Toluene	"	"	"		0.120	**3.68**	"	
Ethylbenzene	"	"	"		0.270	**4.37**	"	
Xylenes (total)	"	"	"		0.460	**8.49**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*132*	%	*1*
Ch-111899-4			**P911407-03**				**Water**	
Benzene	1190673	11/23/99	11/23/99		0.300	**12.6**	ug/l	
Toluene	"	"	"		0.500	**4.65**	"	
Ethylbenzene	"	"	"		0.200	**2.34**	"	
Xylenes (total)	"	"	"		0.500	**11.8**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*146*	%	*1*
Ch-111899-5			**P911407-04**				**Water**	
Benzene	1190709	11/24/99	11/24/99		0.750	**135**	ug/l	
Toluene	"	"	"		0.600	**23.0**	"	
Ethylbenzene	"	"	"		1.35	**60.1**	"	
Xylenes (total)	"	"	"		2.30	**21.3**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*92.4*	%	
Ch-111899-7			**P911407-06**				**Water**	
Benzene	1190673	11/23/99	11/23/99		0.300	ND	ug/l	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.200	**0.340**	"	
Xylenes (total)	"	"	"		0.500	**0.708**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*88.8*	%	

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
Ch-111899-8			**P911407-07**				**Water**	
Benzene	1190709	11/24/99	11/24/99		0.150	**16.2**	ug/l	
Toluene	"	"	"		0.120	**2.06**	"	
Ethylbenzene	"	"	"		0.270	ND	"	
Xylenes (total)	"	"	"		0.460	**3.70**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*100*	%	
Ch-111899-10			**P911407-09**				**Water**	
Benzene	1190709	11/24/99	11/24/99		0.150	**3.33**	ug/l	
Toluene	"	"	"		0.120	**3.75**	"	
Ethylbenzene	"	"	"		0.270	**1.95**	"	
Xylenes (total)	"	"	"		0.460	**2.97**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*109*	%	
Ch-111899-11			**P911407-10**				**Water**	
Benzene	1190673	11/23/99	11/23/99		0.300	ND	ug/l	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.200	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*94.6*	%	
Ch-111899-12			**P911407-11**				**Water**	
Benzene	1190709	11/24/99	11/24/99		0.150	**36.6**	ug/l	
Toluene	"	"	"		0.120	**5.32**	"	
Ethylbenzene	"	"	"		0.270	**2.57**	"	
Xylenes (total)	"	"	"		0.460	**1.07**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*124*	%	*1*
Ch-111899-14			**P911407-13**				**Water**	
Benzene	1190709	11/24/99	11/24/99		0.150	**37.9**	ug/l	
Toluene	"	"	"		0.120	**3.90**	"	
Ethylbenzene	"	"	"		0.270	**2.35**	"	
Xylenes (total)	"	"	"		0.460	**1.11**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*118*	%	

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
Ch-111899-1			**P911407-01**				**Water**	
Arsenic	1290164	12/6/99	12/15/99	EPA 6020	0.00100	**0.0198**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0682**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00220**	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	**0.00140**	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	ND	"	
Mercury	1190768	11/29/99	11/29/99	EPA 7470A	0.000200	ND	"	
Ch-111899-3			**P911407-02**				**Water**	
Arsenic	1290164	12/6/99	12/15/99	EPA 6020	0.00100	**0.0251**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.125**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.00120**	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.0122**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.0292**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.0252**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0569**	"	
Mercury	1190768	11/29/99	11/29/99	EPA 7470A	0.000200	ND	"	
Ch-111899-4			**P911407-03**				**Water**	
Arsenic	1290164	12/6/99	12/15/99	EPA 6020	0.00100	**0.0216**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0591**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.00280**	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00130**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00340**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00160**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.00920**	"	
Mercury	1190768	11/29/99	11/29/99	EPA 7470A	0.000200	ND	"	
Ch-111899-5			**P911407-04**				**Water**	
Arsenic	1290164	12/6/99	12/15/99	EPA 6020	0.00100	**0.0297**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.160**	"	

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**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
Ch-111899-5 (continued)			**P911407-04**				**Water**	
Cadmium	1290164	12/6/99	12/15/99	EPA 6020	0.00100	ND	mg/l	
Chromium	"	"	"	EPA 6020	0.00100	**0.0139**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.0213**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.0138**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0403**	"	
Mercury	1190768	11/29/99	11/29/99	EPA 7470A	0.000200	ND	"	
Ch-111899-7			**P911407-06**				**Water**	
Arsenic	1290164	12/6/99	12/15/99	EPA 6020	0.00100	**0.00930**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.573**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.00590**	"	
Chromium	"	"	12/16/99	EPA 6020	0.00100	**0.0395**	"	
Copper	"	"	12/15/99	EPA 6020	0.00200	**0.139**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.0763**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.214**	"	
Mercury	1190768	11/29/99	11/29/99	EPA 7470A	0.000200	ND	"	
Ch-111899-8			**P911407-07**				**Water**	
Arsenic	1290164	12/6/99	12/15/99	EPA 6020	0.00100	**0.00930**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.173**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.0287**	"	
Chromium	"	"	12/16/99	EPA 6020	0.00100	**0.0116**	"	
Copper	"	"	12/15/99	EPA 6020	0.00200	**0.0520**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.0770**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.211**	"	
Mercury	1190768	11/29/99	11/29/99	EPA 7470A	0.000200	ND	"	
Ch-111899-10			**P911407-09**				**Water**	
Arsenic	1290164	12/6/99	12/15/99	EPA 6020	0.00100	**0.0362**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.126**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.00150**	"	
Chromium	"	"	12/16/99	EPA 6020	0.00100	**0.00770**	"	

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
Ch-111899-10 (continued)			**P911407-09**				**Water**	
Copper	1290164	12/6/99	12/15/99	EPA 6020	0.00200	**0.0185**	mg/l	
Lead	"	"	"	EPA 6020	0.00100	**0.0172**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0613**	"	
Mercury	1190768	11/29/99	11/29/99	EPA 7470A	0.000200	ND	"	
Ch-111899-11			**P911407-10**				**Water**	
Arsenic	1290164	12/6/99	12/15/99	EPA 6020	0.00100	**0.00240**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0270**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	12/16/99	EPA 6020	0.00100	ND	"	
Copper	"	"	12/15/99	EPA 6020	0.00200	**0.00210**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00120**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0118**	"	
Mercury	1190768	11/29/99	11/29/99	EPA 7470A	0.000200	ND	"	
Ch-111899-12			**P911407-11**				**Water**	
Arsenic	1290164	12/6/99	12/15/99	EPA 6020	0.00100	**0.0134**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0415**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.00570**	"	
Chromium	"	"	12/16/99	EPA 6020	0.00100	**0.00190**	"	
Copper	"	"	12/15/99	EPA 6020	0.00200	**0.00600**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00610**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0248**	"	
Mercury	1190768	11/29/99	11/29/99	EPA 7470A	0.000200	ND	"	
Ch-111899-14			**P911407-13**				**Water**	
Arsenic	1290164	12/6/99	12/15/99	EPA 6020	0.00100	**0.0136**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0425**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.00490**	"	
Chromium	"	"	12/16/99	EPA 6020	0.00100	**0.00190**	"	
Copper	"	"	12/15/99	EPA 6020	0.00200	**0.00600**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00610**	"	

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
Ch-111899-14 (continued)			**P911407-13**				**Water**	
Selenium	1290164	12/6/99	12/15/99	EPA 6020	0.00100	ND	mg/l	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0244**	"	
Mercury	1190768	11/29/99	11/29/99	EPA 7470A	0.000200	ND	"	

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Dissolved Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
Ch-111899-5			**P911407-04**				**Water**	
Arsenic	1290239	12/8/99	12/15/99	EPA 6020	0.00100	**0.00311**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0156**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	ND	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00160**	"	
Selenium	"	"	12/17/99	EPA 6020	0.00100	ND	"	
Silver	"	"	12/15/99	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	ND	"	
Mercury	1190658	11/22/99	11/23/99	EPA 7470A	0.000200	ND	"	
Ch-111899-8			**P911407-07**				**Water**	
Arsenic	1290239	12/8/99	12/15/99	EPA 6020	0.00100	**0.00473**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0300**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	ND	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	12/17/99	EPA 6020	0.00100	**0.00110**	"	
Silver	"	"	12/15/99	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.00681**	"	
Mercury	1190658	11/22/99	11/23/99	EPA 7470A	0.000200	ND	"	
Ch-111899-11			**P911407-10**				**Water**	
Arsenic	1290239	12/8/99	12/15/99	EPA 6020	0.00100	ND	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0153**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	ND	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	12/17/99	EPA 6020	0.00100	ND	"	
Silver	"	"	12/15/99	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.00600**	"	
Mercury	1190658	11/22/99	11/23/99	EPA 7470A	0.000200	ND	"	

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
Ch-111899-1			**P911407-01**				**Water**	**2**
Acenaphthene	1190653	11/22/99	12/13/99		20.0	ND	ug/l	3
Acenaphthylene	"	"	"		20.0	ND	"	3
Anthracene	"	"	12/3/99		1.00	**1.74**	"	
Benzo (a) anthracene	"	"	"		1.00	ND	"	
Benzo (a) pyrene	"	"	"		1.00	ND	"	
Benzo (b) fluoranthene	"	"	"		1.00	ND	"	
Benzo (ghi) perylene	"	"	"		1.00	ND	"	
Benzo (k) fluoranthene	"	"	"		1.00	ND	"	
Chrysene	"	"	"		1.00	ND	"	
Dibenzo (a,h) anthracene	"	"	"		2.00	ND	"	
Fluoranthene	"	"	"		1.00	ND	"	
Fluorene	"	"	12/13/99		20.0	ND	"	3
Indeno (1,2,3-cd) pyrene	"	"	12/3/99		1.00	ND	"	
Naphthalene	"	"	12/13/99		20.0	ND	"	3
Phenanthrene	"	"	12/3/99		1.00	**26.4**	"	
Pyrene	"	"	"		1.00	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/13/99*	*37.0-135*		*NR*	*%*	*4*
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*NR*	"	*4*
Surrogate: p-Terphenyl-d14	"	"	*12/3/99*	*25.0-147*		*30.0*	"	
Ch-111899-3			**P911407-02**				**Water**	**2**
Acenaphthene	1190653	11/22/99	12/9/99		5.00	ND	ug/l	3
Acenaphthylene	"	"	"		5.00	ND	"	3
Anthracene	"	"	12/3/99		1.00	**1.43**	"	
Benzo (a) anthracene	"	"	"		1.00	ND	"	
Benzo (a) pyrene	"	"	"		1.00	ND	"	
Benzo (b) fluoranthene	"	"	"		1.00	ND	"	
Benzo (ghi) perylene	"	"	"		1.00	ND	"	
Benzo (k) fluoranthene	"	"	"		1.00	ND	"	
Chrysene	"	"	"		1.00	ND	"	
Dibenzo (a,h) anthracene	"	"	"		2.00	ND	"	
Fluoranthene	"	"	12/9/99		5.00	ND	"	3
Fluorene	"	"	"		5.00	**14.8**	"	3
Indeno (1,2,3-cd) pyrene	"	"	12/3/99		1.00	ND	"	
Naphthalene	"	"	12/9/99		25.0	ND	"	3
Phenanthrene	"	"	12/3/99		1.00	**11.1**	"	
Pyrene	"	"	"		1.00	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/9/99*	*37.0-135*		*NR*	*%*	*4*

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
Ch-111899-3 (continued)			P911407-02				Water	2
Surrogate: Nitrobenzene-d5	*1190653*	*11/22/99*	*12/3/99*	*48.0-140*		*101*	%	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*46.2*	"	
Ch-111899-4			P911407-03				Water	2
Acenaphthene	1190653	11/22/99	12/3/99		5.00	ND	ug/l	3
Acenaphthylene	"	"	"		1.00	ND	"	3
Anthracene	"	"	12/9/99		0.200	ND	"	
Benzo (a) anthracene	"	"	"		0.200	ND	"	
Benzo (a) pyrene	"	"	"		0.200	ND	"	
Benzo (b) fluoranthene	"	"	"		0.200	ND	"	
Benzo (ghi) perylene	"	"	"		0.200	ND	"	
Benzo (k) fluoranthene	"	"	"		0.200	ND	"	
Chrysene	"	"	"		0.200	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.400	ND	"	
Fluoranthene	"	"	"		0.200	ND	"	
Fluorene	"	"	12/3/99		1.00	**1.25**	"	3
Indeno (1,2,3-cd) pyrene	"	"	12/9/99		0.200	ND	"	
Naphthalene	"	"	12/3/99		5.00	ND	"	3
Phenanthrene	"	"	12/9/99		0.200	**0.970**	"	
Pyrene	"	"	"		0.200	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/3/99*	*37.0-135*		*123*	%	
Surrogate: Nitrobenzene-d5	"	"	*12/9/99*	*48.0-140*		*89.8*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*43.6*	"	
Ch-111899-5			P911407-04				Water	2
Acenaphthene	1190653	11/22/99	12/3/99		1.00	**1.40**	ug/l	3
Acenaphthylene	"	"	12/10/99		0.200	ND	"	
Anthracene	"	"	"		0.200	ND	"	
Benzo (a) anthracene	"	"	"		0.200	ND	"	
Benzo (a) pyrene	"	"	"		0.200	ND	"	
Benzo (b) fluoranthene	"	"	"		0.200	ND	"	
Benzo (ghi) perylene	"	"	"		0.200	ND	"	
Benzo (k) fluoranthene	"	"	"		0.200	ND	"	
Chrysene	"	"	"		0.200	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.400	ND	"	
Fluoranthene	"	"	"		0.200	**0.410**	"	
Fluorene	"	"	"		0.200	**2.11**	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.200	ND	"	

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
Ch-111899-5 (continued)			**P911407-04**				**Water**	**2**
Naphthalene	1190653	11/22/99	12/3/99		1.00	**12.4**	ug/l	3
Phenanthrene	"	"	12/10/99		0.200	**1.53**	"	
Pyrene	"	"	"		0.200	**0.480**	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*84.9*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*89.1*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*58.8*	"	
Ch-111899-7			**P911407-06**				**Water**	
Acenaphthene	1190653	11/22/99	12/3/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*148*	%	*5*
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*87.3*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*61.9*	"	
Ch-111899-8			**P911407-07**				**Water**	
Acenaphthene	1190653	11/22/99	12/3/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
Ch-111899-8 (continued)			**P911407-07**				**Water**	
Dibenzo (a,h) anthracene	1190653	11/22/99	12/3/99		0.200	ND	ug/l	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*72.7*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*65.5*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*47.9*	"	
Ch-111899-10			**P911407-09**				**Water**	
Acenaphthene	1190653	11/22/99	12/3/99		0.500	ND	ug/l	3
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	**0.238**	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.500	ND	"	3
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	**0.290**	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*109*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*88.1*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*72.9*	"	
Ch-111899-11			**P911407-10**				**Water**	
Acenaphthene	1190653	11/22/99	12/3/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	**0.118**	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
Ch-111899-11 (continued)			**P911407-10**				**Water**	
Benzo (b) fluoranthene	1190653	11/22/99	12/3/99		0.100	ND	ug/l	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*67.4*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*78.4*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*71.2*	"	
Ch-111899-12			**P911407-11**				**Water**	
Acenaphthene	1190653	11/22/99	12/7/99		1.00	ND	ug/l	3
Acenaphthylene	"	"	"		1.00	ND	"	3
Anthracene	"	"	12/3/99		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	12/7/99		1.00	ND	"	3
Indeno (1,2,3-cd) pyrene	"	"	12/3/99		0.100	ND	"	
Naphthalene	"	"	12/7/99		5.00	ND	"	3
Phenanthrene	"	"	12/3/99		0.100	**0.167**	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/7/99*	*37.0-135*		*116*	*%*	
Surrogate: Nitrobenzene-d5	"	"	*12/3/99*	*48.0-140*		*69.7*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*62.6*	"	
Ch-111899-14			**P911407-13**				**Water**	
Acenaphthene	1190653	11/22/99	12/7/99		2.00	ND	ug/l	3

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
Ch-111899-14 (continued)			**P911407-13**				**Water**	
Acenaphthylene	1190653	11/22/99	12/7/99		2.00	ND	ug/l	3
Anthracene	"	"	12/3/99		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	12/7/99		2.00	ND	"	3
Indeno (1,2,3-cd) pyrene	"	"	12/3/99		0.100	ND	"	
Naphthalene	"	"	12/7/99		2.00	ND	"	3
Phenanthrene	"	"	12/3/99		0.100	**0.202**	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/7/99*	*37.0-135*		*NR*	%	*4*
Surrogate: Nitrobenzene-d5	"	"	*12/3/99*	*48.0-140*		*75.8*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*64.0*	"	

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

BTEX per EPA Method 8021B/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190673	**Date Prepared: 11/23/99**					**Extraction Method: EPA 5030**				
Blank	**1190673-BLK1**									
Benzene	11/23/99			**ND**	ug/l	**0.300**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.200**				
Xylenes (total)	"			**ND**	"	**0.500**				
Surrogate: 4-BFB (PID)	"	*50.0*		*46.3*	"	*75.0-120*	*92.6*			
LCS	**1190673-BS2**									
Benzene	11/23/99	20.0		18.1	ug/l	67.0-130	90.5			
Toluene	"	20.0		18.6	"	75.0-126	93.0			
Ethylbenzene	"	20.0		18.4	"	76.0-124	92.0			
Xylenes (total)	"	60.0		55.3	"	75.0-126	92.2			
Surrogate: 4-BFB (PID)	"	*50.0*		*49.5*	"	*75.0-120*	*99.0*			
Matrix Spike	**1190673-MS1**		**P911407-01**							
Benzene	11/23/99	20.0	ND	19.0	ug/l	67.0-130	**95.0**			
Toluene	"	20.0	ND	19.3	"	75.0-126	**96.5**			
Ethylbenzene	"	20.0	ND	19.6	"	76.0-124	**98.0**			
Xylenes (total)	"	60.0	10.2	59.4	"	75.0-126	**82.0**			
Surrogate: 4-BFB (PID)	"	*50.0*		*53.2*	"	*75.0-120*	*106*			
Matrix Spike Dup	**1190673-MSD1**		**P911407-01**							
Benzene	11/23/99	20.0	ND	18.4	ug/l	67.0-130	**92.0**	13.0	**3.21**	
Toluene	"	20.0	ND	18.5	"	75.0-126	**92.5**	13.0	**4.23**	
Ethylbenzene	"	20.0	ND	18.8	"	76.0-124	**94.0**	15.0	**4.17**	
Xylenes (total)	"	60.0	10.2	57.6	"	75.0-126	**79.0**	13.0	**3.73**	
Surrogate: 4-BFB (PID)	"	*50.0*		*52.8*	"	*75.0-120*	*106*			
Batch: 1190709	**Date Prepared: 11/24/99**					**Extraction Method: EPA 5030**				
Blank	**1190709-BLK1**									
Benzene	11/24/99			**ND**	ug/l	**0.150**				
Toluene	"			**ND**	"	**0.120**				
Ethylbenzene	"			**ND**	"	**0.270**				
Xylenes (total)	"			**ND**	"	**0.460**				
Surrogate: 4-BFB (PID)	"	*50.0*		*42.8*	"	*75.0-120*	*85.6*			
LCS	**1190709-BS2**									
Benzene	11/24/99	20.0		17.2	ug/l	67.0-130	86.0			

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

BTEX per EPA Method 8021B/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS (continued)	**1190709-BS2**									
Toluene	11/24/99	20.0		17.6	ug/l	75.0-126	88.0			
Ethylbenzene	"	20.0		18.5	"	76.0-124	92.5			
Xylenes (total)	"	60.0		54.5	"	75.0-126	90.8			
Surrogate: 4-BFB (PID)	"	*50.0*		*45.8*	"	*75.0-120*	*91.6*			
Batch: 1190793	**Date Prepared: 11/30/99**					**Extraction Method: EPA 5030**				
Blank	**1190793-BLK1**									
Benzene	11/30/99			**ND**	ug/l	**0.0100**				
Toluene	"			**ND**	"	**0.0300**				
Ethylbenzene	"			**ND**	"	**0.0200**				
Xylenes (total)	"			**ND**	"	**0.0900**				
Surrogate: 4-BFB (PID)	"	*50.0*		*45.5*	"	*75.0-120*	*91.0*			
LCS	**1190793-BS2**									
Benzene	11/30/99	20.0		17.0	ug/l	67.0-130	85.0			
Toluene	"	20.0		18.0	"	75.0-126	90.0			
Ethylbenzene	"	20.0		16.2	"	76.0-124	81.0			
Xylenes (total)	"	60.0		50.1	"	75.0-126	83.5			
Surrogate: 4-BFB (PID)	"	*50.0*		*43.6*	"	*75.0-120*	*87.2*			

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Total Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190768	**Date Prepared: 11/29/99**				**Extraction Method: EPA 7470**					
Blank	**1190768-BLK1**									
Mercury	11/29/99			ND	mg/l	0.000200				
LCS	**1190768-BS1**									
Mercury	11/29/99	0.00500		0.00497	mg/l	80.0-120	99.4			
Duplicate	**1190768-DUP1**		**P911407-02**							
Mercury	11/29/99		ND	ND	mg/l			20.0		
Matrix Spike	**1190768-MS1**		**P911407-02**							
Mercury	11/29/99	0.00500	ND	0.00481	mg/l	75.0-125	**96.2**			
Matrix Spike Dup	**1190768-MSD1**		**P911407-02**							
Mercury	11/29/99	0.00500	ND	0.00480	mg/l	75.0-125	**96.0**	20.0	**0.208**	
Batch: 1290164	**Date Prepared: 12/6/99**				**Extraction Method: EPA 200/3005**					
Blank	**1290164-BLK1**									
Arsenic	12/6/99			ND	mg/l	0.00100				
Barium	12/15/99			ND	"	0.00200				
Cadmium	12/6/99			ND	"	0.00100				
Chromium	"			ND	"	0.00100				
Copper	"			ND	"	0.00200				
Lead	"			ND	"	0.00100				
Selenium	12/15/99			ND	"	0.00100				
Silver	"			ND	"	0.00100				
Zinc	12/6/99			ND	"	0.00500				
LCS	**1290164-BS1**									
Arsenic	12/6/99	0.100		0.0910	mg/l	80.0-120	91.0			
Barium	12/15/99	0.100		0.105	"	80.0-120	105			
Cadmium	12/6/99	0.100		0.0960	"	80.0-120	96.0			
Chromium	"	0.100		0.0861	"	80.0-120	86.1			
Copper	"	0.100		0.0882	"	80.0-120	88.2			
Lead	"	0.100		0.0965	"	80.0-120	96.5			
Selenium	12/15/99	0.100		0.101	"	80.0-120	101			
Silver	"	0.0500		0.0465	"	80.0-120	93.0			
Zinc	12/6/99	0.100		0.0917	"	80.0-120	91.7			

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Total Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate	**1290164-DUP1**		**P911500-02**							
Arsenic	12/6/99		0.00550	0.00350	mg/l			20.0	**44.4**	
Barium	12/15/99		0.00680	0.00680	"			20.0	**0**	
Cadmium	12/6/99		ND	ND	"			20.0		
Chromium	"		ND	ND	"			20.0		
Copper	"		0.00760	0.00790	"			20.0	**3.87**	
Lead	"		ND	ND	"			20.0		
Selenium	12/15/99		ND	ND	"			20.0		
Silver	"		ND	ND	"			20.0		
Zinc	12/6/99		0.0223	0.0227	"			20.0	**1.78**	
Matrix Spike	**1290164-MS1**		**P911500-02**							
Arsenic	12/6/99	0.100	0.00550	0.0980	mg/l	75.0-125	**92.5**			
Barium	"	0.100	0.00680	0.105	"	75.0-125	**98.2**			
Cadmium	"	0.100	ND	0.0942	"	75.0-125	**94.2**			
Chromium	"	0.100	ND	0.0908	"	75.0-125	**90.8**			
Copper	"	0.100	0.00760	0.0985	"	75.0-125	**90.9**			
Lead	"	0.100	ND	0.0947	"	75.0-125	**94.7**			
Selenium	12/15/99	0.100	ND	0.0968	"	75.0-125	**96.8**			
Silver	"	0.0500	ND	0.0446	"	75.0-125	**89.2**			
Zinc	12/6/99	0.100	0.0223	0.112	"	75.0-125	**89.7**			
Matrix Spike Dup	**1290164-MSD1**		**P911500-02**							
Arsenic	12/6/99	0.100	0.00550	0.101	mg/l	75.0-125	**95.5**	20.0	**3.19**	
Barium	12/15/99	0.100	0.00680	0.109	"	75.0-125	**102**	20.0	**3.80**	
Cadmium	12/6/99	0.100	ND	0.0943	"	75.0-125	**94.3**	20.0	**0.106**	
Chromium	"	0.100	ND	0.0902	"	75.0-125	**90.2**	20.0	**0.663**	
Copper	"	0.100	0.00760	0.0980	"	75.0-125	**90.4**	20.0	**0.552**	
Lead	"	0.100	ND	0.0948	"	75.0-125	**94.8**	20.0	**0.106**	
Selenium	12/15/99	0.100	ND	0.109	"	75.0-125	**109**	20.0	**11.9**	
Silver	"	0.0500	ND	0.0459	"	75.0-125	**91.8**	20.0	**2.87**	
Zinc	12/6/99	0.100	0.0223	0.111	"	75.0-125	**88.7**	20.0	**1.12**	

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Dissolved Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190658	**Date Prepared: 11/22/99**					**Extraction Method: EPA 7470**				
Blank	**1190658-BLK1**									
Mercury	11/23/99			ND	mg/l	0.000200				
LCS	**1190658-BS1**									
Mercury	11/23/99	0.00500		0.00498	mg/l	80.0-120	99.6			
Duplicate	**1190658-DUP1**		**P911132-06**							
Mercury	11/23/99		ND	ND	mg/l			20.0		
Matrix Spike	**1190658-MS1**		**P911132-06**							
Mercury	11/23/99	0.00500	ND	0.00506	mg/l	75.0-125	101			
Matrix Spike	**1190658-MS2**		**P911340-11**							
Mercury	11/23/99	0.00500	ND	0.00482	mg/l	75.0-125	96.4			
Batch: 1290239	**Date Prepared: 12/8/99**					**Extraction Method: EPA 200/3005**				
Blank	**1290239-BLK1**									
Arsenic	12/15/99			ND	mg/l	0.00100				
Barium	"			ND	"	0.00200				
Cadmium	"			ND	"	0.00100				
Chromium	"			ND	"	0.00100				
Copper	"			ND	"	0.00200				
Lead	"			ND	"	0.00100				
Selenium	12/17/99			ND	"	0.00100				
Silver	12/15/99			ND	"	0.00100				
Zinc	12/16/99			ND	"	0.00500				
LCS	**1290239-BS1**									
Arsenic	12/15/99	0.100		0.104	mg/l	80.0-120	104			
Barium	"	0.100		0.107	"	80.0-120	107			
Cadmium	"	0.100		0.104	"	80.0-120	104			
Chromium	"	0.100		0.104	"	80.0-120	104			
Copper	"	0.100		0.104	"	80.0-120	104			
Lead	"	0.100		0.115	"	80.0-120	115			
Selenium	12/17/99	0.100		0.0997	"	85.0-115	99.7			
Silver	12/15/99	0.0500		0.0432	"	80.0-120	86.4			
Zinc	"	0.100		0.109	"	80.0-120	109			

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Dissolved Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate	1290239-DUP1		P911407-04							
Arsenic	12/15/99		0.00311	0.00332	mg/l			20.0	6.53	
Barium	"		0.0156	0.0156	"			20.0	0	
Cadmium	"		ND	ND	"			20.0		
Chromium	"		ND	ND	"			20.0		
Copper	"		ND	ND	"			20.0		
Lead	"		0.00160	0.00120	"			20.0	28.6	6
Selenium	12/17/99		ND	ND	"			20.0		
Silver	12/15/99		ND	ND	"			20.0		
Zinc	"		ND	ND	"			20.0		6
Matrix Spike	1290239-MS1		P911407-04							
Arsenic	12/15/99	0.100	0.00311	0.0983	mg/l	75.0-125	95.2			
Barium	"	0.100	0.0156	0.116	"	75.0-125	100			
Cadmium	"	0.100	ND	0.105	"	75.0-125	105			
Chromium	"	0.100	ND	0.0963	"	75.0-125	96.3			
Copper	"	0.100	ND	0.0941	"	75.0-125	94.1			
Lead	"	0.100	0.00160	0.110	"	75.0-125	108			
Selenium	12/17/99	0.100	ND	0.0879	"	75.0-125	87.9			
Silver	12/15/99	0.0500	ND	0.0415	"	75.0-125	83.0			
Zinc	"	0.100	ND	0.0902	"	75.0-125	90.2			
Matrix Spike	1290239-MS2		P911420-01							
Arsenic	12/15/99	0.100	ND	0.0993	mg/l	75.0-125	99.3			
Barium	"	0.100	0.00361	0.108	"	75.0-125	104			
Cadmium	"	0.100	ND	0.104	"	75.0-125	104			
Chromium	12/17/99	0.100	ND	0.0892	"	75.0-125	89.2			
Copper	12/15/99	0.100	ND	0.0979	"	75.0-125	97.9			
Lead	"	0.100	ND	0.115	"	75.0-125	115			
Selenium	12/17/99	0.100	ND	0.0928	"	75.0-125	92.8			
Silver	12/15/99	0.0500	ND	0.0433	"	75.0-125	86.6			
Zinc	"	0.100	ND	0.107	"	75.0-125	107			

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Polynuclear Aromatic Compounds per EPA 8270M-SIM/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190653	**Date Prepared: 11/22/99**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1190653-BLK1**									
Acenaphthene	12/3/99			ND	ug/l	0.100				
Acenaphthylene	"			ND	"	0.100				
Anthracene	"			ND	"	0.100				
Benzo (a) anthracene	"			ND	"	0.100				
Benzo (a) pyrene	"			ND	"	0.100				
Benzo (b) fluoranthene	"			ND	"	0.100				
Benzo (ghi) perylene	"			ND	"	0.100				
Benzo (k) fluoranthene	"			ND	"	0.100				
Chrysene	"			ND	"	0.100				
Dibenzo (a,h) anthracene	"			ND	"	0.200				
Fluoranthene	"			ND	"	0.100				
Fluorene	"			ND	"	0.100				
Indeno (1,2,3-cd) pyrene	"			ND	"	0.100				
Naphthalene	"			ND	"	0.100				
Phenanthrene	"			ND	"	0.100				
Pyrene	"			ND	"	0.100				
Surrogate: 2-Fluorobiphenyl	"	*2.50*		*1.38*	"	*37.0-135*	*55.2*			
Surrogate: Nitrobenzene-d5	"	*2.50*		*1.86*	"	*48.0-140*	*74.4*			
Surrogate: p-Terphenyl-d14	"	*2.50*		*2.00*	"	*25.0-147*	*80.0*			
LCS	**1190653-BS1**									
Acenaphthene	12/10/99	1.00		0.596	ug/l	50.0-150	59.6			
Benzo (a) pyrene	"	1.00		0.686	"	50.0-150	68.6			
Pyrene	"	1.00		0.612	"	50.0-150	61.2			
Surrogate: 2-Fluorobiphenyl	"	*2.50*		*1.81*	"	*37.0-135*	*72.4*			
Surrogate: Nitrobenzene-d5	"	*2.50*		*1.62*	"	*48.0-140*	*64.8*			
Surrogate: p-Terphenyl-d14	"	*2.50*		*1.82*	"	*25.0-147*	*72.8*			
Matrix Spike	**1190653-MS1**		**P911407-02**							**2**
Acenaphthene	12/9/99	0.943	ND	ND	ug/l	50.0-150	**NR**			7
Benzo (a) pyrene	"	0.943	ND	0.425	"	50.0-150	**45.1**			8,J
Pyrene	"	0.943	ND	1.23	"	50.0-150	**130**			
Surrogate: 2-Fluorobiphenyl	"	*2.36*		*ND*	"	*37.0-135*	*NR*			*4*
Surrogate: Nitrobenzene-d5	"	*2.36*		*2.61*	"	*48.0-140*	*111*			
Surrogate: p-Terphenyl-d14	"	*2.36*		*0.877*	"	*25.0-147*	*37.2*			

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Polynuclear Aromatic Compounds per EPA 8270M-SIM/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike Dup	**1190653-MSD1**		**P911407-02**							
Acenaphthene	12/9/99	0.943	ND	ND	ug/l	50.0-150	**NR**	60.0		7
Benzo (a) pyrene	"	0.943	ND	0.538	"	50.0-150	**57.1**	60.0	**23.5**	8
Pyrene	"	0.943	ND	1.13	"	50.0-150	**120**	60.0	**8.00**	
Surrogate: 2-Fluorobiphenyl	"	*2.36*		*ND*	"	*37.0-135*	*NR*			
Surrogate: Nitrobenzene-d5	"	*2.36*		*2.42*	"	*48.0-140*	*103*			
Surrogate: p-Terphenyl-d14	"	*2.36*		*1.38*	"	*25.0-147*	*58.5*			

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/18/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/18/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/3/00 17:09

Notes and Definitions

#	Note
J	Estimated value.
1	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
2	Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
3	The reporting limit for this analyte was raised due to matrix interference.
4	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
5	Surrogate recovery is above control limits. Since no analytes were detected in the sample, the quality of the data has not been affected.
6	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
7	Unable to quantitate spike recovery due to matrix interference and/or dilution necessary for analysis.
8	The spike recovery, and/or RPD, for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical - Portland

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/21/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/23/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:47

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
CH-112199-2 B-9	P911451-01	Water	11/21/99

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/21/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/23/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:47

BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
CH-112199-2			**P911451-01**				**Water**	
Benzene	1190793	11/30/99	11/30/99		0.500	**1.02**	ug/l	
Toluene	"	"	"		0.500	**0.748**	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*102*	%	

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/21/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/23/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:47

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
CH-112199-2			**P911451-01**				**Water**	
Arsenic	1290320	12/10/99	12/16/99	EPA 6020	0.00100	**0.0223**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.131**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.00163**	"	
Chromium	"	"	12/18/99	EPA 6020	0.00100	**0.0152**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.0281**	"	
Lead	"	"	12/16/99	EPA 6020	0.00100	**0.00850**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0538**	"	
Mercury	1190806	11/30/99	12/1/99	EPA 7470A	0.000200	ND	"	

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/21/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/23/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:47

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
CH-112199-2			**P911451-01**				**Water**	**1**
Acenaphthene	1190726	11/24/99	12/3/99		5.00	ND	ug/l	2
Acenaphthylene	"	"	"		0.500	ND	"	
Anthracene	"	"	"		0.500	ND	"	
Benzo (a) anthracene	"	"	"		0.500	ND	"	
Benzo (a) pyrene	"	"	"		0.500	ND	"	
Benzo (b) fluoranthene	"	"	"		0.500	ND	"	
Benzo (ghi) perylene	"	"	"		0.500	ND	"	
Benzo (k) fluoranthene	"	"	"		0.500	ND	"	
Chrysene	"	"	"		0.500	ND	"	
Dibenzo (a,h) anthracene	"	"	"		1.00	ND	"	
Fluoranthene	"	"	"		0.500	ND	"	
Fluorene	"	"	"		0.500	**8.74**	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.500	ND	"	
Naphthalene	"	"	"		2.50	ND	"	2
Phenanthrene	"	"	"		0.500	**1.81**	"	
Pyrene	"	"	"		0.500	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*54.7*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*78.6*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*36.3*	"	

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/21/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/23/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:47

BTEX per EPA Method 8021B/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190754	**Date Prepared: 11/29/99**					**Extraction Method: EPA 5030**				
Blank	**1190754-BLK1**									
Benzene	11/29/99			**ND**	ug/l	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**1.00**				
Surrogate: 4-BFB (PID)	"	*50.0*		*45.6*	"	*75.0-120*	*91.2*			
LCS	**1190754-BS2**									
Benzene	11/29/99	20.0		17.8	ug/l	67.0-130	89.0			
Toluene	"	20.0		18.2	"	75.0-126	91.0			
Ethylbenzene	"	20.0		18.9	"	76.0-124	94.5			
Xylenes (total)	"	60.0		55.5	"	75.0-126	92.5			
Surrogate: 4-BFB (PID)	"	*50.0*		*46.6*	"	*75.0-120*	*93.2*			
Matrix Spike	**1190754-MS1**		**P911427-01**							
Benzene	11/29/99	20.0	ND	16.9	ug/l	67.0-130	**84.5**			
Toluene	"	20.0	ND	17.6	"	75.0-126	**88.0**			
Ethylbenzene	"	20.0	ND	18.6	"	76.0-124	**93.0**			
Xylenes (total)	"	60.0	ND	54.8	"	75.0-126	**91.3**			
Surrogate: 4-BFB (PID)	"	*50.0*		*46.2*	"	*75.0-120*	*92.4*			
Matrix Spike Dup	**1190754-MSD1**		**P911427-01**							
Benzene	11/29/99	20.0	ND	16.8	ug/l	67.0-130	**84.0**	13.0	**0.593**	
Toluene	"	20.0	ND	17.5	"	75.0-126	**87.5**	13.0	**0.570**	
Ethylbenzene	"	20.0	ND	18.8	"	76.0-124	**94.0**	15.0	**1.07**	
Xylenes (total)	"	60.0	ND	55.8	"	75.0-126	**93.0**	13.0	**1.84**	
Surrogate: 4-BFB (PID)	"	*50.0*		*48.0*	"	*75.0-120*	*96.0*			
Batch: 1190793	**Date Prepared: 11/30/99**					**Extraction Method: EPA 5030**				
Blank	**1190793-BLK1**									
Benzene	11/30/99			**ND**	ug/l	**0.0100**				
Toluene	"			**ND**	"	**0.0300**				
Ethylbenzene	"			**ND**	"	**0.0200**				
Xylenes (total)	"			**ND**	"	**0.0900**				
Surrogate: 4-BFB (PID)	"	*50.0*		*45.5*	"	*75.0-120*	*91.0*			
LCS	**1190793-BS2**									
Benzene	11/30/99	20.0		17.0	ug/l	67.0-130	85.0			

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/21/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/23/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:47

BTEX per EPA Method 8021B/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS (continued)	**1190793-BS2**									
Toluene	11/30/99	20.0		18.0	ug/l	75.0-126	90.0			
Ethylbenzene	"	20.0		16.2	"	76.0-124	81.0			
Xylenes (total)	"	60.0		50.1	"	75.0-126	83.5			
Surrogate: 4-BFB (PID)	"	*50.0*		*43.6*	"	*75.0-120*	*87.2*			

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/21/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/23/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:47

Total Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190806	**Date Prepared: 11/30/99**					**Extraction Method: EPA 7470**				
Blank	**1190806-BLK1**									
Mercury	12/1/99			ND	mg/l	**0.000200**				
LCS	**1190806-BS1**									
Mercury	12/1/99	0.00500		0.00506	mg/l	80.0-120	101			
Duplicate	**1190806-DUP1**		**P911472-01**							
Mercury	12/1/99		ND	ND	mg/l			20.0		
Matrix Spike	**1190806-MS1**		**P911472-01**							
Mercury	12/1/99	0.00500	ND	0.00482	mg/l	75.0-125	**96.4**			
Matrix Spike	**1190806-MS2**		**P911499-02**							
Mercury	12/1/99	0.00500	ND	0.00485	mg/l	75.0-125	**97.0**			
Batch: 1290320	**Date Prepared: 12/10/99**					**Extraction Method: EPA 200/3005**				
Blank	**1290320-BLK1**									
Arsenic	12/10/99			ND	mg/l	**0.00100**				
Barium	12/16/99			ND	"	**0.00200**				
Cadmium	12/10/99			ND	"	**0.00100**				
Chromium	"			ND	"	**0.00100**				
Copper	"			ND	"	**0.00200**				
Lead	"			ND	"	**0.00100**				
Selenium	"			ND	"	**0.00100**				
Silver	12/16/99			ND	"	**0.00100**				
Zinc	12/10/99			ND	"	**0.00500**				
LCS	**1290320-BS1**									
Arsenic	12/10/99	0.100		0.0928	mg/l	80.0-120	92.8			
Barium	12/16/99	0.100		0.0976	"	80.0-120	97.6			
Cadmium	12/10/99	0.100		0.103	"	80.0-120	103			
Chromium	"	0.100		0.0876	"	80.0-120	87.6			
Copper	"	0.100		0.0886	"	80.0-120	88.6			
Lead	"	0.100		0.103	"	80.0-120	103			
Selenium	"	0.100		0.0975	"	80.0-120	97.5			
Silver	12/16/99	0.0500		0.0430	"	80.0-120	86.0			
Zinc	12/10/99	0.100		0.0917	"	80.0-120	91.7			

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/21/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/23/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:47

Total Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate	**1290320-DUP1**		**P912043-01**							
Arsenic	12/10/99		0.0200	0.0192	mg/l			20.0	**4.08**	
Barium	12/16/99		0.00470	0.00470	"			20.0	**0**	
Cadmium	12/10/99		ND	ND	"			20.0		
Chromium	"		0.00190	0.00190	"			20.0	**0**	
Copper	"		0.0134	0.0136	"			20.0	**1.48**	
Lead	"		ND	ND	"			20.0		
Selenium	"		0.00125	0.00200	"			20.0	**46.2**	
Silver	12/16/99		ND	ND	"			20.0		
Zinc	12/10/99		0.00950	0.00990	"			20.0	**4.12**	
Matrix Spike	**1290320-MS1**		**P912043-01**							
Arsenic	12/16/99	0.100	0.0200	0.132	mg/l	75.0-125	**112**			
Barium	"	0.100	0.00470	0.101	"	75.0-125	**96.3**			
Cadmium	12/13/99	0.100	ND	0.0954	"	75.0-125	**95.4**			
Chromium	"	0.100	0.00190	0.111	"	75.0-125	**109**			
Copper	"	0.100	0.0134	0.123	"	75.0-125	**110**			
Lead	"	0.100	ND	0.102	"	75.0-125	**102**			
Selenium	"	0.100	0.00125	0.101	"	75.0-125	**99.8**			
Silver	12/16/99	0.0500	ND	0.0417	"	75.0-125	**83.4**			
Zinc	12/13/99	0.100	0.00950	0.109	"	75.0-125	**99.5**			
Matrix Spike Dup	**1290320-MSD1**		**P912043-01**							
Arsenic	12/16/99	0.100	0.0200	0.129	mg/l	75.0-125	**109**	20.0	**2.71**	
Barium	"	0.100	0.00470	0.0990	"	75.0-125	**94.3**	20.0	**2.10**	
Cadmium	12/13/99	0.100	ND	0.0973	"	75.0-125	**97.3**	20.0	**1.97**	
Chromium	"	0.100	0.00190	0.106	"	75.0-125	**104**	20.0	**4.69**	
Copper	"	0.100	0.0134	0.117	"	75.0-125	**104**	20.0	**5.61**	
Lead	"	0.100	ND	0.101	"	75.0-125	**101**	20.0	**0.985**	
Selenium	"	0.100	0.00125	0.104	"	75.0-125	**103**	20.0	**3.16**	
Silver	12/16/99	0.0500	ND	0.0418	"	75.0-125	**83.6**	20.0	**0.240**	
Zinc	12/13/99	0.100	0.00950	0.106	"	75.0-125	**96.5**	20.0	**3.06**	

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/21/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/23/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:47

Polynuclear Aromatic Compounds per EPA 8270M-SIM/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190726	**Date Prepared: 11/24/99**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1190726-BLK1**									
Acenaphthene	12/3/99			ND	ug/l	0.100				
Acenaphthylene	"			ND	"	0.100				
Anthracene	"			ND	"	0.100				
Benzo (a) anthracene	"			ND	"	0.100				
Benzo (a) pyrene	"			ND	"	0.100				
Benzo (b) fluoranthene	"			ND	"	0.100				
Benzo (ghi) perylene	"			ND	"	0.100				
Benzo (k) fluoranthene	"			ND	"	0.100				
Chrysene	"			ND	"	0.100				
Dibenzo (a,h) anthracene	"			ND	"	0.200				
Fluoranthene	"			ND	"	0.100				
Fluorene	"			ND	"	0.100				
Indeno (1,2,3-cd) pyrene	"			ND	"	0.100				
Naphthalene	"			ND	"	0.100				
Phenanthrene	"			ND	"	0.100				
Pyrene	"			ND	"	0.100				
Surrogate: 2-Fluorobiphenyl	"	*2.50*		*1.92*	"	*37.0-135*	*76.8*			
Surrogate: Nitrobenzene-d5	"	*2.50*		*2.10*	"	*48.0-140*	*84.0*			
Surrogate: p-Terphenyl-d14	"	*2.50*		*2.29*	"	*25.0-147*	*91.6*			
LCS	**1190726-BS1**									
Acenaphthene	12/3/99	1.00		0.626	ug/l	50.0-150	62.6			
Benzo (a) pyrene	"	1.00		0.689	"	50.0-150	68.9			
Pyrene	"	1.00		0.701	"	50.0-150	70.1			
Surrogate: 2-Fluorobiphenyl	"	*2.50*		*1.56*	"	*37.0-135*	*62.4*			
Surrogate: Nitrobenzene-d5	"	*2.50*		*1.91*	"	*48.0-140*	*76.4*			
Surrogate: p-Terphenyl-d14	"	*2.50*		*1.77*	"	*25.0-147*	*70.8*			
LCS Dup	**1190726-BSD1**									
Acenaphthene	12/3/99	1.00		0.569	ug/l	50.0-150	56.9	60.0	9.54	
Benzo (a) pyrene	"	1.00		0.741	"	50.0-150	74.1	60.0	7.27	
Pyrene	"	1.00		0.777	"	50.0-150	77.7	60.0	10.3	
Surrogate: 2-Fluorobiphenyl	"	*2.50*		*1.47*	"	*37.0-135*	*58.8*			
Surrogate: Nitrobenzene-d5	"	*2.50*		*2.04*	"	*48.0-140*	*81.6*			
Surrogate: p-Terphenyl-d14	"	*2.50*		*1.92*	"	*25.0-147*	*76.8*			

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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IT Corporation - Portland	Project:	Willbridge (Chevron)	Sampled: 11/21/99
P.O. Box 231269	Project Number:	B15-200.2A	Received: 11/23/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:47

Notes and Definitions

#	Note
1	Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
2	The reporting limit for this analyte was raised due to matrix interference.
3	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical - Portland

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
GX-120799-1 mw-11	P912160-01	Water	12/7/99
GX-120799-2 mw-10	P912160-02	Water	12/7/99
GX-120799-4 mw-8	P912160-04	Water	12/7/99
GX-120799-5 mw-13	P912160-05	Water	12/7/99
GX-120799-6 mw-32	P912160-06	Water	12/7/99
GX-120799-7 mw-31	P912160-07	Water	12/7/99
GX-120799-8 mw-26	P912160-08	Water	12/7/99
GX-120799-10 mw-23	P912160-10	Water	12/7/99
GX-120799-11 mw-22	P912160-11	Water	12/7/99
GX-120799-13 mw-21	P912160-13	Water	12/7/99
GX-120799-14 mw-36	P912160-14	Water	12/7/99
GX-120799-15 mw-33	P912160-15	Water	12/7/99
GX-120799-16 mw-40	P912160-16	Water	12/7/99
GX-120799-17 mw-37	P912160-17	Water	12/7/99
GX-120799-18 mw-15	P912160-18	Water	12/7/99
GX-120799-19 mw-15 Dup	P912160-19	Water	12/7/99

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-1			**P912160-01**				**Water**	
Benzene	1290345	12/13/99	12/13/99		60.0	**5560**	ug/l	
Toluene	"	"	"		60.0	**2140**	"	
Ethylbenzene	"	"	"		60.0	**1760**	"	
Xylenes (total)	"	"	"		120	**10400**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*102*	%	
GX-120799-2			**P912160-02**				**Water**	
Benzene	1290345	12/13/99	12/13/99		0.300	**1.47**	ug/l	
Toluene	"	"	"		0.300	**0.562**	"	
Ethylbenzene	"	"	"		0.300	**0.379**	"	
Xylenes (total)	"	"	"		0.600	**1.55**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*99.0*	%	
GX-120799-4			**P912160-04**				**Water**	
Benzene	1290375	12/14/99	12/14/99		0.300	**10.5**	ug/l	
Toluene	"	"	"		0.300	**3.36**	"	
Ethylbenzene	"	"	"		0.300	**38.4**	"	
Xylenes (total)	"	"	"		0.600	**55.9**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*100*	%	
GX-120799-5			**P912160-05**				**Water**	
Benzene	1290345	12/13/99	12/13/99		0.300	ND	ug/l	
Toluene	"	"	"		0.300	ND	"	
Ethylbenzene	"	"	"		0.300	ND	"	
Xylenes (total)	"	"	"		0.600	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*95.6*	%	
GX-120799-6			**P912160-06**				**Water**	
Benzene	1290345	12/13/99	12/13/99		0.300	**0.312**	ug/l	
Toluene	"	"	"		0.300	ND	"	
Ethylbenzene	"	"	"		0.300	ND	"	
Xylenes (total)	"	"	"		0.600	**1.03**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*94.0*	%	
GX-120799-7			**P912160-07**				**Water**	
Benzene	1290375	12/14/99	12/14/99		0.300	**0.371**	ug/l	
Toluene	"	"	"		0.300	**0.639**	"	
Ethylbenzene	"	"	"		0.300	**0.390**	"	

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-7 (continued)			**P912160-07**				**Water**	
Xylenes (total)	1290375	12/14/99	12/14/99		0.600	**0.793**	ug/l	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*92.0*	%	
GX-120799-8			**P912160-08**				**Water**	
Benzene	1290375	12/14/99	12/14/99		0.300	**0.680**	ug/l	
Toluene	"	"	"		0.300	**1.87**	"	
Ethylbenzene	"	"	"		0.300	**6.26**	"	
Xylenes (total)	"	"	"		0.600	**12.4**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*102*	%	
GX-120799-10			**P912160-10**				**Water**	
Benzene	1290375	12/14/99	12/14/99		0.300	**53.5**	ug/l	
Toluene	"	"	"		0.300	**7.88**	"	
Ethylbenzene	"	"	"		0.300	**80.1**	"	
Xylenes (total)	"	"	"		0.600	**67.2**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*108*	%	
GX-120799-11			**P912160-11**				**Water**	
Benzene	1290375	12/14/99	12/14/99		15.0	**1840**	ug/l	
Toluene	"	"	"		15.0	**1770**	"	
Ethylbenzene	"	"	"		15.0	**3920**	"	
Xylenes (total)	"	"	"		30.0	**10100**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*96.0*	%	
GX-120799-13			**P912160-13**				**Water**	
Benzene	1290345	12/13/99	12/13/99		0.300	**0.419**	ug/l	
Toluene	"	"	"		0.300	**0.789**	"	
Ethylbenzene	"	"	"		0.300	ND	"	
Xylenes (total)	"	"	"		0.600	**1.02**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*98.4*	%	
GX-120799-14			**P912160-14**				**Water**	
Benzene	1290375	12/14/99	12/14/99		0.300	ND	ug/l	
Toluene	"	"	"		0.300	ND	"	
Ethylbenzene	"	"	"		0.300	ND	"	
Xylenes (total)	"	"	"		0.600	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*80.6*	%	

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
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Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-15			**P912160-15**				**Water**	
Benzene	1290345	12/13/99	12/13/99		0.300	ND	ug/l	
Toluene	"	"	"		0.300	ND	"	
Ethylbenzene	"	"	"		0.300	ND	"	
Xylenes (total)	"	"	"		0.600	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*90.6*	*%*	
GX-120799-16			**P912160-16**				**Water**	
Benzene	1290345	12/13/99	12/13/99		0.300	ND	ug/l	
Toluene	"	"	"		0.300	ND	"	
Ethylbenzene	"	"	"		0.300	ND	"	
Xylenes (total)	"	"	"		0.600	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*90.8*	*%*	
GX-120799-17			**P912160-17**				**Water**	
Benzene	1290375	12/14/99	12/14/99		0.300	0.393	ug/l	
Toluene	"	"	"		0.300	ND	"	
Ethylbenzene	"	"	"		0.300	ND	"	
Xylenes (total)	"	"	"		0.600	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*93.2*	*%*	
GX-120799-18			**P912160-18**				**Water**	
Benzene	1290345	12/13/99	12/13/99		0.300	ND	ug/l	
Toluene	"	"	"		0.300	ND	"	
Ethylbenzene	"	"	"		0.300	ND	"	
Xylenes (total)	"	"	"		0.600	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*89.8*	*%*	
GX-120799-19			**P912160-19**				**Water**	
Benzene	1290345	12/13/99	12/13/99		0.300	ND	ug/l	
Toluene	"	"	"		0.300	ND	"	
Ethylbenzene	"	"	"		0.300	ND	"	
Xylenes (total)	"	"	"		0.600	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*88.0*	*%*	

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
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Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
GX-120799-1			**P912160-01**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.0555**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.104**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00520**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00961**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.0493**	"	
Selenium	"	"	"	EPA 6020	0.00100	**0.00220**	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0343**	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-2			**P912160-02**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.00445**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0695**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00258**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00536**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00277**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0117**	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-4			**P912160-04**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.00458**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0254**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.00131**	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00217**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00253**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00233**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.144**	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-5			**P912160-05**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.00263**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0627**	"	

North Creek Analytical - Portland

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
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Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
GX-120799-5 (continued)			**P912160-05**				**Water**	
Cadmium	1290605	12/21/99	12/23/99	EPA 6020	0.00100	ND	mg/l	
Chromium	"	"	"	EPA 6020	0.00100	**0.00285**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00650**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00308**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0134**	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-6			**P912160-06**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	ND	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.00577**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00166**	"	
Copper	"	"	"	EPA 6020	0.00200	ND	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	ND	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-7			**P912160-07**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.00113**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.00832**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00219**	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	ND	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-8			**P912160-08**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.0343**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0596**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	

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Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
GX-120799-8 (continued)			**P912160-08**				**Water**	
Copper	1290605	12/21/99	12/23/99	EPA 6020	0.00200	ND	mg/l	
Lead	"	"	"	EPA 6020	0.00100	**0.00227**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	ND	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-10			**P912160-10**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.00356**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0188**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	ND	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00169**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	ND	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-11			**P912160-11**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.0921**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.186**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00280**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00396**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.0116**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0148**	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-13			**P912160-13**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.00115**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.101**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.00209**	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00101**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00382**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00563**	"	

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
GX-120799-13 (continued)			**P912160-13**				**Water**	
Selenium	1290605	12/21/99	12/23/99	EPA 6020	0.00100	ND	mg/l	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0230**	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-14			**P912160-14**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.0179**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0937**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00562**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.0109**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00516**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0204**	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-15			**P912160-15**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	ND	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0376**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	ND	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	ND	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-16			**P912160-16**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.0128**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0730**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00201**	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
GX-120799-16 (continued)			**P912160-16**				**Water**	
Zinc	1290605	12/21/99	12/23/99	EPA 6020	0.00500	ND	mg/l	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-17			**P912160-17**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	**0.0168**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0338**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	ND	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	ND	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-18			**P912160-18**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	ND	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0687**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00350**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00432**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00210**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0651**	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1
GX-120799-19			**P912160-19**				**Water**	
Arsenic	1290605	12/21/99	12/23/99	EPA 6020	0.00100	ND	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0792**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00576**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00571**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00239**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0402**	"	
Mercury	1290439	12/15/99	12/16/99	EPA 7470A	0.000200	ND	"	1

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Dissolved Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
GX-120799-5			**P912160-05**				**Water**	
Arsenic	1290606	12/21/99	12/23/99	EPA 6020	0.00100	ND	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0243**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	**0.0474**	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	**0.00179**	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0121**	"	
Mercury	1290470	12/17/99	12/17/99	EPA 7470A	0.000200	ND	"	1
GX-120799-13			**P912160-13**				**Water**	
Arsenic	1290606	12/21/99	12/23/99	EPA 6020	0.00100	ND	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0560**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00633**	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.00976**	"	
Mercury	1290470	12/17/99	12/17/99	EPA 7470A	0.000200	ND	"	1
GX-120799-15			**P912160-15**				**Water**	
Arsenic	1290606	12/21/99	12/23/99	EPA 6020	0.00100	ND	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0314**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	**0.0121**	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.00538**	"	
Mercury	1290470	12/17/99	12/17/99	EPA 7470A	0.000200	ND	"	1

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-1			**P912160-01**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		50.0	ND	ug/l	2
Acenaphthylene	"	"	"		50.0	ND	"	2
Anthracene	"	"	12/17/99		0.500	ND	"	2
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	12/20/99		50.0	ND	"	2
Indeno (1,2,3-cd) pyrene	"	"	12/17/99		0.100	ND	"	
Naphthalene	"	"	12/20/99		50.0	697	"	2
Phenanthrene	"	"	12/17/99		0.500	ND	"	2
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/20/99*	*37.0-135*		*NR*	*%*	*3*
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*NR*	"	*3*
Surrogate: p-Terphenyl-d14	"	"	*12/17/99*	*25.0-147*		*33.1*	"	
GX-120799-2			**P912160-02**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		2.00	ND	"	2
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*58.1*	*%*	

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-2 (continued)			**P912160-02**				**Water**	
Surrogate: Nitrobenzene-d5	*1290301*	*12/14/99*	*12/20/99*	*48.0-140*		*59.7*	*%*	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*79.2*	"	
GX-120799-4			**P912160-04**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	**3.55**	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*62.3*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*70.3*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*74.6*	"	
GX-120799-5			**P912160-05**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-5 (continued)			**P912160-05**				**Water**	
Naphthalene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*73.3*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*89.0*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*86.4*	"	
GX-120799-6			**P912160-06**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*58.1*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*75.0*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*78.0*	"	
GX-120799-7			**P912160-07**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-7 (continued)			**P912160-07**				**Water**	
Dibenzo (a,h) anthracene	1290301	12/14/99	12/20/99		0.200	ND	ug/l	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.500	ND	"	2
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*53.0*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*89.0*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*55.1*	"	
GX-120799-8			**P912160-08**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		5.00	ND	ug/l	2
Acenaphthylene	"	"	"		5.00	ND	"	2
Anthracene	"	"	12/17/99		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	**0.221**	"	
Fluorene	"	"	12/20/99		5.00	ND	"	2
Indeno (1,2,3-cd) pyrene	"	"	12/17/99		0.100	ND	"	
Naphthalene	"	"	12/20/99		5.00	ND	"	2
Phenanthrene	"	"	12/17/99		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/20/99*	*37.0-135*		*NR*	%	*3*
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*NR*	"	*3*
Surrogate: p-Terphenyl-d14	"	"	*12/17/99*	*25.0-147*		*50.4*	"	
GX-120799-10			**P912160-10**				**Water**	**4**
Acenaphthene	1290301	12/14/99	12/17/99		1.00	ND	ug/l	
Acenaphthylene	"	"	"		1.00	ND	"	
Anthracene	"	"	"		1.00	ND	"	
Benzo (a) anthracene	"	"	"		1.00	ND	"	
Benzo (a) pyrene	"	"	"		1.00	ND	"	

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-10 (continued)			**P912160-10**				**Water**	**4**
Benzo (b) fluoranthene	1290301	12/14/99	12/17/99		1.00	ND	ug/l	
Benzo (ghi) perylene	"	"	"		1.00	ND	"	
Benzo (k) fluoranthene	"	"	"		1.00	ND	"	
Chrysene	"	"	"		1.00	ND	"	
Dibenzo (a,h) anthracene	"	"	"		2.00	ND	"	
Fluoranthene	"	"	"		1.00	ND	"	
Fluorene	"	"	"		1.00	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		1.00	ND	"	
Naphthalene	"	"	"		10.0	ND	"	2
Phenanthrene	"	"	"		1.00	ND	"	
Pyrene	"	"	"		1.00	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*63.1*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*75.8*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*54.2*	"	
GX-120799-11			**P912160-11**				**Water**	**4**
Acenaphthene	1290301	12/14/99	12/17/99		2.50	ND	ug/l	
Acenaphthylene	"	"	"		2.50	ND	"	
Anthracene	"	"	"		2.50	ND	"	
Benzo (a) anthracene	"	"	"		2.50	ND	"	
Benzo (a) pyrene	"	"	"		2.50	ND	"	
Benzo (b) fluoranthene	"	"	"		2.50	ND	"	
Benzo (ghi) perylene	"	"	"		2.50	ND	"	
Benzo (k) fluoranthene	"	"	"		2.50	ND	"	
Chrysene	"	"	"		2.50	ND	"	
Dibenzo (a,h) anthracene	"	"	"		5.00	ND	"	
Fluoranthene	"	"	"		2.50	ND	"	
Fluorene	"	"	"		2.50	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		2.50	ND	"	
Naphthalene	"	"	12/20/99		10.0	**306**	"	
Phenanthrene	"	"	12/17/99		2.50	ND	"	
Pyrene	"	"	"		2.50	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*NR*	%	*3*
Surrogate: Nitrobenzene-d5	"	"	*12/20/99*	*48.0-140*		*NR*	"	*3*
Surrogate: p-Terphenyl-d14	"	"	*12/17/99*	*25.0-147*		*NR*	"	*3*
GX-120799-13			**P912160-13**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-13 (continued)			**P912160-13**				**Water**	
Acenaphthylene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Anthracene	"	"	"		0.100	**0.118**	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*69.5*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*89.0*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*78.8*	"	
GX-120799-14			**P912160-14**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*66.9*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*81.8*	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-14 (continued)			**P912160-14**				**Water**	
Surrogate: p-Terphenyl-d14	*1290301*	*12/14/99*	*12/20/99*	*25.0-147*		*75.4*	*%*	
GX-120799-15			**P912160-15**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*66.9*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*76.7*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*85.6*	"	
GX-120799-16			**P912160-16**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	**0.104**	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.500	ND	"	2

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-16 (continued)			**P912160-16**				**Water**	
Phenanthrene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*72.0*	%	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*87.3*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*89.0*	"	
GX-120799-17			**P912160-17**				**Water**	
Acenaphthene	1290301	12/14/99	12/21/99		5.00	ND	ug/l	2
Acenaphthylene	"	"	"		5.00	ND	"	2
Anthracene	"	"	12/20/99		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	12/21/99		5.00	ND	"	2
Indeno (1,2,3-cd) pyrene	"	"	12/20/99		0.100	ND	"	
Naphthalene	"	"	12/21/99		5.00	ND	"	2
Phenanthrene	"	"	12/20/99		0.100	ND	"	
Pyrene	"	"	"		0.100	**0.121**	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/21/99*	*37.0-135*		*NR*	%	*3*
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*NR*	"	*3*
Surrogate: p-Terphenyl-d14	"	"	*12/20/99*	*25.0-147*		*59.3*	"	
GX-120799-18			**P912160-18**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
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Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GX-120799-18 (continued)			**P912160-18**				**Water**	
Fluoranthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*55.1*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*94.5*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*69.5*	"	
GX-120799-19			**P912160-19**				**Water**	
Acenaphthene	1290301	12/14/99	12/20/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*72.5*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*115*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*64.8*	"	

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Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

BTEX per EPA Method 8021B/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1290345	**Date Prepared: 12/13/99**					**Extraction Method: EPA 5030**				
Blank	**1290345-BLK1**									
Benzene	12/13/99			**ND**	ug/l	**0.300**				
Toluene	"			**ND**	"	**0.300**				
Ethylbenzene	"			**ND**	"	**0.300**				
Xylenes (total)	"			**ND**	"	**0.600**				
Surrogate: 4-BFB (PID)	"	*50.0*		*47.7*	"	*75.0-120*	*95.4*			
LCS	**1290345-BS2**									
Benzene	12/13/99	20.0		20.9	ug/l	70.0-130	104			
Toluene	"	20.0		20.2	"	70.0-130	101			
Ethylbenzene	"	20.0		21.0	"	70.0-130	105			
Xylenes (total)	"	60.0		60.4	"	70.0-130	101			
Surrogate: 4-BFB (PID)	"	*50.0*		*49.0*	"	*75.0-120*	*98.0*			
Matrix Spike	**1290345-MS1**		**P912160-02**							
Benzene	12/13/99	20.0	1.47	21.1	ug/l	70.0-130	**98.2**			
Toluene	"	20.0	0.562	19.4	"	70.0-130	**94.2**			
Ethylbenzene	"	20.0	0.379	19.4	"	70.0-130	**95.1**			
Xylenes (total)	"	60.0	1.55	57.9	"	70.0-130	**93.9**			
Surrogate: 4-BFB (PID)	"	*50.0*		*49.4*	"	*75.0-120*	*98.8*			
Matrix Spike Dup	**1290345-MSD1**		**P912160-02**							
Benzene	12/13/99	20.0	1.47	20.0	ug/l	70.0-130	**92.7**	15.0	**5.76**	
Toluene	"	20.0	0.562	18.2	"	70.0-130	**88.2**	15.0	**6.58**	
Ethylbenzene	"	20.0	0.379	18.2	"	70.0-130	**89.1**	15.0	**6.51**	
Xylenes (total)	"	60.0	1.55	54.3	"	70.0-130	**87.9**	15.0	**6.60**	
Surrogate: 4-BFB (PID)	"	*50.0*		*48.9*	"	*75.0-120*	*97.8*			
Batch: 1290375	**Date Prepared: 12/14/99**					**Extraction Method: EPA 5030**				
Blank	**1290375-BLK1**									
Benzene	12/14/99			**ND**	ug/l	**0.300**				
Toluene	"			**ND**	"	**0.300**				
Ethylbenzene	"			**ND**	"	**0.300**				
Xylenes (total)	"			**ND**	"	**0.600**				
Surrogate: 4-BFB (PID)	"	*50.0*		*42.7*	"	*75.0-120*	*85.4*			
LCS	**1290375-BS2**									
Benzene	12/14/99	20.0		20.0	ug/l	70.0-130	100			

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

BTEX per EPA Method 8021B/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS (continued)	**1290375-BS2**									
Toluene	12/14/99	20.0		19.7	ug/l	70.0-130	98.5			
Ethylbenzene	"	20.0		18.9	"	70.0-130	94.5			
Xylenes (total)	"	60.0		57.8	"	70.0-130	96.3			
Surrogate: 4-BFB (PID)	"	*50.0*		*51.2*	"	*75.0-120*	*102*			

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Total Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1290439	**Date Prepared: 12/15/99**				**Extraction Method: EPA 7470**					
Blank	**1290439-BLK1**									
Mercury	12/16/99			ND	mg/l	0.000200				1
LCS	**1290439-BS1**									
Mercury	12/16/99	0.00500		0.00561	mg/l	80.0-120	112			1
Duplicate	**1290439-DUP1**		**P912160-03**							
Mercury	12/16/99		ND	ND	mg/l			20.0		1
Matrix Spike	**1290439-MS1**		**P912160-03**							
Mercury	12/16/99	0.00500	ND	0.00508	mg/l	75.0-125	102			
Matrix Spike Dup	**1290439-MSD1**		**P912160-03**							
Mercury	12/16/99	0.00500	ND	0.00456	mg/l	75.0-125	91.2	20.0	11.2	
Batch: 1290605	**Date Prepared: 12/21/99**				**Extraction Method: EPA 200/3005**					
Blank	**1290605-BLK1**									
Arsenic	12/23/99			ND	mg/l	0.00100				
Barium	"			ND	"	0.00200				
Cadmium	"			ND	"	0.00100				
Chromium	"			ND	"	0.00100				
Copper	"			ND	"	0.00200				
Lead	"			ND	"	0.00100				
Selenium	"			ND	"	0.00100				
Silver	"			ND	"	0.00100				
Zinc	"			ND	"	0.00500				
LCS	**1290605-BS1**									
Arsenic	12/23/99	0.100		0.0992	mg/l	80.0-120	99.2			
Barium	"	0.100		0.0977	"	80.0-120	97.7			
Cadmium	"	0.100		0.103	"	80.0-120	103			
Chromium	"	0.100		0.0928	"	80.0-120	92.8			
Copper	"	0.100		0.0977	"	80.0-120	97.7			
Lead	"	0.100		0.107	"	80.0-120	107			
Selenium	"	0.100		0.104	"	80.0-120	104			
Silver	"	0.0500		0.0435	"	80.0-120	87.0			
Zinc	"	0.100		0.0988	"	80.0-120	98.8			

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Total Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate	**1290605-DUP1**		**P912160-01**							
Arsenic	12/23/99		0.0555	0.0559	mg/l			20.0	**0.718**	
Barium	"		0.104	0.102	"			20.0	**1.94**	
Cadmium	"		ND	ND	"			20.0		
Chromium	"		0.00520	0.00472	"			20.0	**9.68**	
Copper	"		0.00961	0.0101	"			20.0	**4.97**	
Lead	"		0.0493	0.0485	"			20.0	**1.64**	
Selenium	"		0.00220	0.00131	"			20.0	**50.7**	5
Silver	"		ND	ND	"			20.0		
Zinc	"		0.0343	0.0336	"			20.0	**2.06**	
Matrix Spike	**1290605-MS1**		**P912160-01**							
Arsenic	12/23/99	0.100	0.0555	0.163	mg/l	75.0-125	**108**			
Barium	"	0.100	0.104	0.190	"	75.0-125	**86.0**			
Cadmium	"	0.100	ND	0.0997	"	75.0-125	**99.7**			
Chromium	"	0.100	0.00520	0.0917	"	75.0-125	**86.5**			
Copper	"	0.100	0.00961	0.101	"	75.0-125	**91.4**			
Lead	"	0.100	0.0493	0.146	"	75.0-125	**96.7**			
Selenium	"	0.100	0.00220	0.101	"	75.0-125	**98.8**			
Silver	"	0.0500	ND	0.0425	"	75.0-125	**85.0**			
Zinc	"	0.100	0.0343	0.124	"	75.0-125	**89.7**			
Matrix Spike	**1290605-MS2**		**P912160-11**							
Arsenic	12/23/99	0.100	0.0921	0.208	mg/l	75.0-125	**116**			
Barium	"	0.100	0.186	0.280	"	75.0-125	**94.0**			
Cadmium	"	0.100	ND	0.100	"	75.0-125	**100**			
Chromium	"	0.100	0.00280	0.0894	"	75.0-125	**86.6**			
Copper	"	0.100	0.00396	0.0938	"	75.0-125	**89.8**			
Lead	"	0.100	0.0116	0.112	"	75.0-125	**100**			
Selenium	"	0.100	ND	0.0969	"	75.0-125	**96.9**			
Silver	"	0.0500	ND	0.0427	"	75.0-125	**85.4**			
Zinc	"	0.100	0.0148	0.103	"	75.0-125	**88.2**			

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Dissolved Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1290470	**Date Prepared: 12/17/99**					**Extraction Method: EPA 7470**				
Blank	**1290470-BLK1**									
Mercury	12/17/99			**ND**	mg/l	**0.000200**				1
LCS	**1290470-BS1**									
Mercury	12/17/99	0.000313		0.000258	mg/l	80.0-120	82.4			1
Duplicate	**1290470-DUP1**		**P912160-02**							
Mercury	12/17/99		ND	ND	mg/l			20.0		1
Matrix Spike	**1290470-MS1**		**P912160-02**							
Mercury	12/17/99	0.000313	ND	0.000255	mg/l	75.0-125	**81.5**			
Batch: 1290606	**Date Prepared: 12/21/99**					**Extraction Method: EPA 200/3005**				
Blank	**1290606-BLK1**									
Arsenic	12/23/99			**ND**	mg/l	**0.00100**				
Barium	"			**ND**	"	**0.00200**				
Cadmium	"			**ND**	"	**0.00100**				
Chromium	"			**ND**	"	**0.00100**				
Copper	"			**ND**	"	**0.00200**				
Lead	"			**ND**	"	**0.00100**				
Selenium	"			**ND**	"	**0.00100**				
Silver	"			**ND**	"	**0.00100**				
Zinc	"			**ND**	"	**0.00500**				
LCS	**1290606-BS1**									
Arsenic	12/23/99	0.100		0.0998	mg/l	80.0-120	99.8			
Barium	"	0.100		0.0941	"	80.0-120	94.1			
Cadmium	"	0.100		0.103	"	80.0-120	103			
Chromium	"	0.100		0.0926	"	80.0-120	92.6			
Copper	"	0.100		0.0988	"	80.0-120	98.8			
Lead	"	0.100		0.104	"	80.0-120	104			
Selenium	"	0.100		0.102	"	85.0-115	102			
Silver	"	0.0500		0.0434	"	80.0-120	86.8			
Zinc	"	0.100		0.0999	"	80.0-120	99.9			
Duplicate	**1290606-DUP1**		**P912157-01**							
Arsenic	12/23/99		0.00251	0.00224	mg/l			20.0	**11.4**	
Barium	"		0.0768	0.0791	"			20.0	**2.95**	

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Dissolved Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate (continued)	**1290606-DUP1**		**P912157-01**							
Cadmium	12/23/99		ND	ND	mg/l			20.0		
Chromium	"		ND	ND	"			20.0		
Copper	"		0.0304	0.0325	"			20.0	**6.68**	
Lead	"		ND	ND	"			20.0		
Selenium	"		0.00273	0.00191	"			20.0	**35.3**	5
Silver	"		ND	ND	"			20.0		
Zinc	"		ND	ND	"			20.0		
Matrix Spike	**1290606-MS1**		**P912157-01**							
Arsenic	12/23/99	0.100	0.00251	0.106	mg/l	75.0-125	**103**			
Barium	"	0.100	0.0768	0.169	"	75.0-125	**92.2**			
Cadmium	"	0.100	ND	0.0960	"	75.0-125	**96.0**			
Chromium	"	0.100	ND	0.111	"	75.0-125	**111**			
Copper	"	0.100	0.0304	0.135	"	75.0-125	**105**			
Lead	"	0.100	ND	0.0986	"	75.0-125	**98.6**			
Selenium	"	0.100	0.00273	0.102	"	75.0-125	**99.3**			
Silver	"	0.0500	ND	0.0417	"	75.0-125	**83.4**			
Zinc	"	0.100	ND	0.0952	"	75.0-125	**95.2**			

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Polynuclear Aromatic Compounds per EPA 8270M-SIM/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1290301	**Date Prepared: 12/14/99**					**Extraction Method: EPA 3510/600 Series**				
Blank	**1290301-BLK1**									
Acenaphthene	12/17/99			**ND**	ug/l	**0.100**				
Acenaphthylene	"			**ND**	"	**0.100**				
Anthracene	"			**ND**	"	**0.100**				
Benzo (a) anthracene	"			**ND**	"	**0.100**				
Benzo (a) pyrene	"			**ND**	"	**0.100**				
Benzo (b) fluoranthene	"			**ND**	"	**0.100**				
Benzo (ghi) perylene	"			**ND**	"	**0.100**				
Benzo (k) fluoranthene	"			**ND**	"	**0.100**				
Chrysene	"			**ND**	"	**0.100**				
Dibenzo (a,h) anthracene	"			**ND**	"	**0.200**				
Fluoranthene	"			**ND**	"	**0.100**				
Fluorene	"			**ND**	"	**0.100**				
Indeno (1,2,3-cd) pyrene	"			**ND**	"	**0.100**				
Naphthalene	"			**ND**	"	**0.100**				
Phenanthrene	"			**ND**	"	**0.100**				
Pyrene	"			**ND**	"	**0.100**				
Surrogate: 2-Fluorobiphenyl	"	*2.50*		*1.44*	"	*37.0-135*	*57.6*			
Surrogate: Nitrobenzene-d5	"	*2.50*		*1.85*	"	*48.0-140*	*74.0*			
Surrogate: p-Terphenyl-d14	"	*2.50*		*1.81*	"	*25.0-147*	*72.4*			
LCS	**1290301-BS1**									
Acenaphthene	12/22/99	1.00		0.585	ug/l	50.0-150	58.5			
Benzo (a) pyrene	"	1.00		0.526	"	50.0-150	52.6			
Pyrene	"	1.00		0.527	"	50.0-150	52.7			
Surrogate: 2-Fluorobiphenyl	"	*2.50*		*1.84*	"	*37.0-135*	*73.6*			
Surrogate: Nitrobenzene-d5	"	*2.50*		*1.54*	"	*48.0-140*	*61.6*			
Surrogate: p-Terphenyl-d14	"	*2.50*		*1.57*	"	*25.0-147*	*62.8*			
LCS Dup	**1290301-BSD1**									
Acenaphthene	12/22/99	1.00		0.685	ug/l	50.0-150	68.5	60.0	15.7	
Benzo (a) pyrene	"	1.00		0.670	"	50.0-150	67.0	60.0	24.1	
Pyrene	"	1.00		0.692	"	50.0-150	69.2	60.0	27.1	
Surrogate: 2-Fluorobiphenyl	"	*2.50*		*1.71*	"	*37.0-135*	*68.4*			
Surrogate: Nitrobenzene-d5	"	*2.50*		*2.07*	"	*48.0-140*	*82.8*			
Surrogate: p-Terphenyl-d14	"	*2.50*		*1.89*	"	*25.0-147*	*75.6*			

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IT Corporation - Portland	Project:	Willbridge (GATX)	Sampled: 12/7/99
P.O. Box 231269	Project Number:	B15-100.2A	Received: 12/8/99
Portland, OR 97224	Project Manager:	John Renda	Reported: 3/5/00 10:54

Notes and Definitions

#	Note
1	Analysis performed by EPA 1631.
2	The reporting limit for this analyte was raised due to matrix interference.
3	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
4	Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
5	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled:	11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received:	11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported:	3/5/00 10:33

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
TS-111699-1 B-4	P911340-01	Water	11/16/99
TS-111699-3 B-17	P911340-03	Water	11/16/99
TS-111699-4 B-18	P911340-04	Water	11/16/99
TS-111699-6 B-35	P911340-06	Water	11/16/99
TS-111699-7 B-36	P911340-07	Water	11/16/99
TS-111699-8 B-37	P911340-08	Water	11/16/99
TS-111699-10 U-2	P911340-10	Water	11/16/99
TS-111699-11 U-3	P911340-11	Water	11/16/99
TS-111699-12 U-4	P911340-12	Water	11/16/99
TS-111699-13 U-5	P911340-13	Water	11/16/99

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TS-111699-1			P911340-01				Water	
Benzene	1190639	11/22/99	11/22/99		0.300	**35.0**	ug/l	
Toluene	"	"	"		0.200	**8.14**	"	
Ethylbenzene	"	"	"		0.680	**15.4**	"	
Xylenes (total)	"	"	"		0.160	**36.1**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*NR*	%	*1*
TS-111699-3			P911340-03				Water	
Benzene	1190610	11/19/99	11/19/99		0.100	**547**	ug/l	
Toluene	"	"	"		0.200	**16.3**	"	
Ethylbenzene	"	"	"		0.300	**10.6**	"	
Xylenes (total)	"	"	"		0.300	**13.2**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*103*	%	
TS-111699-4			P911340-04				Water	
Benzene	1190639	11/22/99	11/22/99		0.300	**0.555**	ug/l	
Toluene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.680	ND	"	
Xylenes (total)	"	"	"		0.160	**22.7**	"	2
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*151*	%	*1*
TS-111699-6			P911340-06				Water	
Benzene	1190752	11/29/99	11/29/99		2.50	**169**	ug/l	
Toluene	"	"	"		2.50	**15.7**	"	
Ethylbenzene	"	"	"		2.50	**8.25**	"	
Xylenes (total)	"	"	"		5.00	**18.7**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*107*	%	
TS-111699-7			P911340-07				Water	
Benzene	1190671	11/23/99	11/23/99		0.500	**5.11**	ug/l	
Toluene	"	"	"		0.500	**0.959**	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*89.4*	%	
TS-111699-8			P911340-08				Water	
Benzene	1190671	11/23/99	11/23/99		0.500	ND	ug/l	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	

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**Refer to end of report for text of notes and definitions*

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TS-111699-8 (continued)			**P911340-08**				**Water**	
Xylenes (total)	1190671	11/23/99	11/23/99		1.00	ND	ug/l	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*93.2*	%	
TS-111699-10			**P911340-10**				**Water**	
Benzene	1190610	11/19/99	11/19/99		0.0100	ND	ug/l	
Toluene	"	"	"		0.0200	ND	"	
Ethylbenzene	"	"	"		0.0300	ND	"	
Xylenes (total)	"	"	"		0.0300	ND	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*97.0*	%	
TS-111699-11			**P911340-11**				**Water**	
Benzene	1190610	11/19/99	11/19/99		0.0100	**0.490**	ug/l	
Toluene	"	"	"		0.0200	**1.97**	"	
Ethylbenzene	"	"	"		0.0300	**2.60**	"	
Xylenes (total)	"	"	"		0.0300	**4.30**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*103*	%	
TS-111699-12			**P911340-12**				**Water**	
Benzene	1190639	11/22/99	11/22/99		0.300	**20.6**	ug/l	
Toluene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.680	**1.61**	"	
Xylenes (total)	"	"	"		0.160	**6.93**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*144*	%	*3*
TS-111699-13			**P911340-13**				**Water**	
Benzene	1190610	11/19/99	11/19/99		0.0100	**0.382**	ug/l	
Toluene	"	"	"		0.0200	**0.398**	"	
Ethylbenzene	"	"	"		0.0300	**0.139**	"	
Xylenes (total)	"	"	"		0.0300	**1.05**	"	
Surrogate: 4-BFB (PID)	"	"	"	*75.0-120*		*98.4*	%	

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
TS-111699-1			**P911340-01**				**Water**	
Arsenic	1190782	11/29/99	12/9/99	EPA 6020	0.00100	**0.0317**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0759**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00119**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00490**	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.00787**	"	
Mercury	1190680	11/24/99	11/24/99	EPA 7470A	0.000200	ND	"	
TS-111699-3			**P911340-03**				**Water**	
Arsenic	1190782	11/29/99	12/9/99	EPA 6020	0.00100	**0.0451**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.208**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.0209**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.0387**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.0255**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0562**	"	
Mercury	1190680	11/24/99	11/24/99	EPA 7470A	0.000200	ND	"	
TS-111699-4			**P911340-04**				**Water**	
Arsenic	1190782	11/29/99	12/9/99	EPA 6020	0.00100	**0.00917**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.105**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00362**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00744**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00172**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0188**	"	
Mercury	1190680	11/24/99	11/24/99	EPA 7470A	0.000200	ND	"	
TS-111699-6			**P911340-06**				**Water**	
Arsenic	1190782	11/29/99	12/7/99	EPA 6020	0.00100	**0.0390**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.267**	"	

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**Refer to end of report for text of notes and definitions*

Crystal Burkholder, Project Manager

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Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
TS-111699-6 (continued)			**P911340-06**				**Water**	
Cadmium	1190782	11/29/99	12/7/99	EPA 6020	0.00100	ND	mg/l	
Chromium	"	"	"	EPA 6020	0.00100	**0.0347**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.0473**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.0376**	"	
Selenium	"	"	12/9/99	EPA 6020	0.00100	ND	"	
Silver	"	"	12/7/99	EPA 6020	0.00100	ND	"	
Zinc	"	"	12/9/99	EPA 6020	0.00500	**0.129**	"	
Mercury	1190680	11/24/99	11/24/99	EPA 7470A	0.000200	ND	"	
TS-111699-7			**P911340-07**				**Water**	
Arsenic	1190782	11/29/99	12/9/99	EPA 6020	0.00100	**0.00422**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0468**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00152**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00378**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00183**	"	
Selenium	"	"	"	EPA 6020	0.00100	**0.0103**	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0100**	"	
Mercury	1190680	11/24/99	11/24/99	EPA 7470A	0.000200	ND	"	
TS-111699-8			**P911340-08**				**Water**	
Arsenic	1190782	11/29/99	12/14/99	EPA 6020	0.0100	**0.592**	mg/l	
Barium	"	"	12/9/99	EPA 6020	0.00200	**0.0419**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	ND	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	**0.00150**	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	ND	"	
Mercury	1190680	11/24/99	11/24/99	EPA 7470A	0.000200	ND	"	
TS-111699-10			**P911340-10**				**Water**	
Arsenic	1190782	11/29/99	12/9/99	EPA 6020	0.00100	**0.0174**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0351**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00119**	"	

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Crystal Burkholder, Project Manager

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Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
TS-111699-10 (continued)			**P911340-10**				**Water**	
Copper	1190782	11/29/99	12/9/99	EPA 6020	0.00200	**0.00496**	mg/l	
Lead	"	"	"	EPA 6020	0.00100	**0.00122**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0130**	"	
Mercury	1190680	11/24/99	11/24/99	EPA 7470A	0.000200	ND	"	
TS-111699-11			**P911340-11**				**Water**	
Arsenic	1190782	11/29/99	12/9/99	EPA 6020	0.00100	**0.0418**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0990**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00375**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00445**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00835**	"	
Selenium	"	"	"	EPA 6020	0.00100	**0.00133**	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0242**	"	
Mercury	1190680	11/24/99	11/24/99	EPA 7470A	0.000200	ND	"	
TS-111699-12			**P911340-12**				**Water**	
Arsenic	1190782	11/29/99	12/9/99	EPA 6020	0.00100	**0.0193**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.114**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.00393**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.0108**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00402**	"	
Selenium	"	"	"	EPA 6020	0.00100	**0.00126**	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.0213**	"	
Mercury	1190680	11/24/99	11/24/99	EPA 7470A	0.000200	ND	"	
TS-111699-13			**P911340-13**				**Water**	
Arsenic	1190782	11/29/99	12/9/99	EPA 6020	0.00100	**0.0101**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.177**	"	
Cadmium	"	"	"	EPA 6020	0.00100	**0.00214**	"	
Chromium	"	"	"	EPA 6020	0.00100	**0.0153**	"	
Copper	"	"	"	EPA 6020	0.00200	**0.0628**	"	
Lead	"	"	"	EPA 6020	0.00100	**0.0298**	"	

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Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
TS-111699-13 (continued)			**P911340-13**				**Water**	
Selenium	1190782	11/29/99	12/9/99	EPA 6020	0.00100	ND	mg/l	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	12/14/99	EPA 6020	0.0500	**4.10**	"	
Mercury	1190680	11/24/99	11/24/99	EPA 7470A	0.000200	ND	"	

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P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Dissolved Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
TS-111699-3			**P911340-03**				**Water**	
Arsenic	1190727	11/24/99	12/9/99	EPA 6020	0.00100	**0.00450**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0339**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	ND	"	
Lead	"	"	"	EPA 6020	0.00100	**0.00230**	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	ND	"	
Mercury	1190658	11/22/99	11/23/99	EPA 7470A	0.000200	ND	"	
TS-111699-11			**P911340-11**				**Water**	
Arsenic	1190727	11/24/99	12/9/99	EPA 6020	0.00100	**0.00190**	mg/l	
Barium	"	"	"	EPA 6020	0.00200	**0.0268**	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00200	**0.00220**	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Selenium	"	"	"	EPA 6020	0.00100	**0.00120**	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00500	**0.00880**	"	
Mercury	1190658	11/22/99	11/23/99	EPA 7470A	0.000200	ND	"	

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TS-111699-1			**P911340-01**				**Water**	
Acenaphthene	1190573	11/18/99	12/6/99		20.0	ND	ug/l	4
Acenaphthylene	"	"	"		20.0	ND	"	4
Anthracene	"	"	12/9/99		1.00	**1.60**	"	
Benzo (a) anthracene	"	"	"		1.00	ND	"	
Benzo (a) pyrene	"	"	"		1.00	ND	"	
Benzo (b) fluoranthene	"	"	"		1.00	ND	"	
Benzo (ghi) perylene	"	"	"		1.00	ND	"	
Benzo (k) fluoranthene	"	"	"		1.00	ND	"	
Chrysene	"	"	"		1.00	ND	"	
Dibenzo (a,h) anthracene	"	"	"		2.00	ND	"	
Fluoranthene	"	"	"		1.00	**1.42**	"	
Fluorene	"	"	12/6/99		20.0	ND	"	4
Indeno (1,2,3-cd) pyrene	"	"	12/9/99		1.00	ND	"	
Naphthalene	"	"	12/6/99		20.0	ND	"	4
Phenanthrene	"	"	12/9/99		1.00	**15.7**	"	
Pyrene	"	"	"		1.00	**1.42**	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/6/99*	*37.0-135*		*NR*	%	*5*
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*NR*	"	*5*
Surrogate: p-Terphenyl-d14	"	"	*12/9/99*	*25.0-147*		*41.2*	"	
TS-111699-3			**P911340-03**				**Water**	**4**
Acenaphthene	1190573	11/18/99	12/6/99		50.0	ND	ug/l	
Acenaphthylene	"	"	"		10.0	ND	"	
Anthracene	"	"	"		10.0	ND	"	
Benzo (a) anthracene	"	"	12/2/99		0.500	ND	"	
Benzo (a) pyrene	"	"	"		0.500	ND	"	
Benzo (b) fluoranthene	"	"	"		0.500	ND	"	
Benzo (ghi) perylene	"	"	"		0.500	ND	"	
Benzo (k) fluoranthene	"	"	"		0.500	ND	"	
Chrysene	"	"	"		0.500	ND	"	
Dibenzo (a,h) anthracene	"	"	"		1.00	ND	"	
Fluoranthene	"	"	"		0.500	ND	"	
Fluorene	"	"	12/6/99		10.0	**11.9**	"	
Indeno (1,2,3-cd) pyrene	"	"	12/2/99		0.500	ND	"	
Naphthalene	"	"	12/6/99		10.0	ND	"	
Phenanthrene	"	"	12/2/99		0.500	**8.07**	"	
Pyrene	"	"	"		0.500	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/6/99*	*37.0-135*		*NR*	%	*5*

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**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TS-111699-3 (continued)			**P911340-03**				**Water**	**4**
Surrogate: Nitrobenzene-d5	*1190573*	*11/18/99*	*12/6/99*	*48.0-140*		*NR*	*%*	*5*
Surrogate: p-Terphenyl-d14	"	"	*12/2/99*	*25.0-147*		*57.2*	"	
TS-111699-4			**P911340-04**				**Water**	**4**
Acenaphthene	1190573	11/18/99	12/6/99		50.0	ND	ug/l	
Acenaphthylene	"	"	"		5.00	ND	"	
Anthracene	"	"	"		5.00	ND	"	
Benzo (a) anthracene	"	"	12/3/99		1.00	ND	"	
Benzo (a) pyrene	"	"	"		1.00	ND	"	
Benzo (b) fluoranthene	"	"	"		1.00	ND	"	
Benzo (ghi) perylene	"	"	"		1.00	ND	"	
Benzo (k) fluoranthene	"	"	"		1.00	ND	"	
Chrysene	"	"	"		1.00	ND	"	
Dibenzo (a,h) anthracene	"	"	"		2.00	ND	"	
Fluoranthene	"	"	"		1.00	ND	"	
Fluorene	"	"	12/6/99		25.0	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	12/3/99		1.00	ND	"	
Naphthalene	"	"	12/6/99		5.00	ND	"	
Phenanthrene	"	"	12/3/99		1.00	**2.74**	"	
Pyrene	"	"	"		1.00	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/6/99*	*37.0-135*		*NR*	*%*	*5*
Surrogate: Nitrobenzene-d5	"	"	*12/3/99*	*48.0-140*		*82.4*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*50.8*	"	
TS-111699-6			**P911340-06**				**Water**	**4**
Acenaphthene	1190573	11/18/99	12/6/99		200	ND	ug/l	
Acenaphthylene	"	"	"		20.0	ND	"	
Anthracene	"	"	"		20.0	ND	"	
Benzo (a) anthracene	"	"	12/2/99		1.00	**3.87**	"	
Benzo (a) pyrene	"	"	"		1.00	ND	"	
Benzo (b) fluoranthene	"	"	"		1.00	ND	"	
Benzo (ghi) perylene	"	"	"		1.00	ND	"	
Benzo (k) fluoranthene	"	"	"		1.00	ND	"	
Chrysene	"	"	"		1.00	**3.56**	"	
Dibenzo (a,h) anthracene	"	"	"		2.00	ND	"	
Fluoranthene	"	"	"		1.00	**24.7**	"	
Fluorene	"	"	12/6/99		20.0	**50.0**	"	
Indeno (1,2,3-cd) pyrene	"	"	12/2/99		1.00	ND	"	

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TS-111699-6 (continued)			**P911340-06**				**Water**	**4**
Naphthalene	1190573	11/18/99	12/6/99		20.0	ND	ug/l	
Phenanthrene	"	"	12/2/99		1.00	**91.7**	"	
Pyrene	"	"	"		1.00	**15.7**	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/6/99*	*37.0-135*		*NR*	*%*	*5*
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*NR*	"	*5*
Surrogate: p-Terphenyl-d14	"	"	*12/2/99*	*25.0-147*		*48.3*	"	
TS-111699-7			**P911340-07**				**Water**	
Acenaphthene	1190573	11/18/99	12/6/99		2.50	ND	ug/l	4
Acenaphthylene	"	"	"		2.50	ND	"	4
Anthracene	"	"	12/3/99		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	12/6/99		2.50	ND	"	4
Indeno (1,2,3-cd) pyrene	"	"	12/3/99		0.100	ND	"	
Naphthalene	"	"	12/6/99		2.50	ND	"	4
Phenanthrene	"	"	"		2.50	ND	"	4
Pyrene	"	"	"		2.50	ND	"	4
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*127*	*%*	*6*
Surrogate: Nitrobenzene-d5	"	"	*12/3/99*	*48.0-140*		*70.8*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*65.0*	"	
TS-111699-8			**P911340-08**				**Water**	
Acenaphthene	1190573	11/18/99	12/6/99		0.500	ND	ug/l	4
Acenaphthylene	"	"	"		0.500	ND	"	4
Anthracene	"	"	12/2/99		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TS-111699-8 (continued)			**P911340-08**				**Water**	
Dibenzo (a,h) anthracene	1190573	11/18/99	12/2/99		0.200	ND	ug/l	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	12/6/99		0.500	ND	"	4
Indeno (1,2,3-cd) pyrene	"	"	12/2/99		0.100	ND	"	
Naphthalene	"	"	12/6/99		0.500	ND	"	4
Phenanthrene	"	"	12/2/99		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/6/99*	*37.0-135*		*129*	*%*	*6*
Surrogate: Nitrobenzene-d5	"	"	*12/2/99*	*48.0-140*		*69.5*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*69.9*	"	
TS-111699-10			**P911340-10**				**Water**	
Acenaphthene	1190573	11/18/99	12/2/99		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	*37.0-135*		*40.4*	*%*	
Surrogate: Nitrobenzene-d5	"	"	"	*48.0-140*		*65.1*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*61.3*	"	
TS-111699-11			**P911340-11**				**Water**	
Acenaphthene	1190573	11/18/99	12/6/99		0.500	ND	ug/l	4
Acenaphthylene	"	"	"		0.500	ND	"	4
Anthracene	"	"	12/2/99		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TS-111699-11 (continued)			**P911340-11**				**Water**	
Benzo (b) fluoranthene	1190573	11/18/99	12/2/99		0.100	ND	ug/l	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.200	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	12/6/99		0.500	ND	"	4
Indeno (1,2,3-cd) pyrene	"	"	12/2/99		0.100	ND	"	
Naphthalene	"	"	12/6/99		2.50	ND	"	4
Phenanthrene	"	"	12/2/99		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/6/99*	*37.0-135*		*131*	%	*6*
Surrogate: Nitrobenzene-d5	"	"	*12/2/99*	*48.0-140*		*65.7*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*66.1*	"	
TS-111699-12			**P911340-12**				**Water**	**4**
Acenaphthene	1190573	11/18/99	12/6/99		50.0	ND	ug/l	
Acenaphthylene	"	"	"		5.00	ND	"	
Anthracene	"	"	12/2/99		1.00	ND	"	
Benzo (a) anthracene	"	"	"		1.00	ND	"	
Benzo (a) pyrene	"	"	"		1.00	ND	"	
Benzo (b) fluoranthene	"	"	"		1.00	ND	"	
Benzo (ghi) perylene	"	"	"		1.00	ND	"	
Benzo (k) fluoranthene	"	"	"		1.00	ND	"	
Chrysene	"	"	"		1.00	ND	"	
Dibenzo (a,h) anthracene	"	"	"		2.00	ND	"	
Fluoranthene	"	"	"		1.00	ND	"	
Fluorene	"	"	12/6/99		5.00	**7.92**	"	
Indeno (1,2,3-cd) pyrene	"	"	12/2/99		1.00	ND	"	
Naphthalene	"	"	12/6/99		5.00	ND	"	
Phenanthrene	"	"	12/2/99		1.00	**7.42**	"	
Pyrene	"	"	"		1.00	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/6/99*	*37.0-135*		*NR*	%	*5*
Surrogate: Nitrobenzene-d5	"	"	*12/2/99*	*48.0-140*		*86.9*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*40.4*	"	
TS-111699-13			**P911340-13**				**Water**	**4**
Acenaphthene	1190573	11/18/99	12/6/99		10.0	ND	ug/l	

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Crystal Burkholder, Project Manager

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Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
TS-111699-13 (continued)			**P911340-13**				**Water**	**4**
Acenaphthylene	1190573	11/18/99	12/6/99		2.00	ND	ug/l	
Anthracene	"	"	12/3/99		0.200	ND	"	
Benzo (a) anthracene	"	"	"		0.200	ND	"	
Benzo (a) pyrene	"	"	"		0.200	ND	"	
Benzo (b) fluoranthene	"	"	"		0.200	ND	"	
Benzo (ghi) perylene	"	"	"		0.200	ND	"	
Benzo (k) fluoranthene	"	"	"		0.200	ND	"	
Chrysene	"	"	"		0.200	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.400	ND	"	
Fluoranthene	"	"	"		0.200	ND	"	
Fluorene	"	"	12/6/99		2.00	**2.00**	"	
Indeno (1,2,3-cd) pyrene	"	"	12/3/99		0.200	ND	"	
Naphthalene	"	"	12/6/99		2.00	ND	"	
Phenanthrene	"	"	12/3/99		0.200	**0.900**	"	
Pyrene	"	"	"		0.200	ND	"	
Surrogate: 2-Fluorobiphenyl	"	"	*12/6/99*	*37.0-135*		*114*	*%*	*6*
Surrogate: Nitrobenzene-d5	"	"	*12/3/99*	*48.0-140*		*59.3*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*25.0-147*		*68.2*	"	

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

BTEX per EPA Method 8021B/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190610	**Date Prepared: 11/19/99**					**Extraction Method: EPA 5030**				
Blank	**1190610-BLK1**									
Benzene	11/19/99			**ND**	ug/l	**0.0100**				
Toluene	"			**ND**	"	**0.0200**				
Ethylbenzene	"			**ND**	"	**0.0300**				
Xylenes (total)	"			**ND**	"	**0.0300**				
Surrogate: 4-BFB (PID)	"	*50.0*		*48.7*	"	*75.0-120*	*97.4*			
LCS	**1190610-BS2**									
Benzene	11/19/99	20.0		21.0	ug/l	67.0-130	105			
Toluene	"	20.0		20.2	"	75.0-126	101			
Ethylbenzene	"	20.0		19.0	"	76.0-124	95.0			
Xylenes (total)	"	60.0		58.7	"	75.0-126	97.8			
Surrogate: 4-BFB (PID)	"	*50.0*		*51.2*	"	*75.0-120*	*102*			
Matrix Spike	**1190610-MS1**		**P911340-13**							
Benzene	11/19/99	20.0	0.382	22.8	ug/l	67.0-130	**112**			
Toluene	"	20.0	0.398	21.4	"	75.0-126	**105**			
Ethylbenzene	"	20.0	0.139	20.0	"	76.0-124	**99.3**			
Xylenes (total)	"	60.0	1.05	60.4	"	75.0-126	**98.9**			
Surrogate: 4-BFB (PID)	"	*50.0*		*52.0*	"	*75.0-120*	*104*			
Matrix Spike Dup	**1190610-MSD1**		**P911340-13**							
Benzene	11/19/99	20.0	0.382	21.7	ug/l	67.0-130	**107**	13.0	**4.57**	
Toluene	"	20.0	0.398	20.5	"	75.0-126	**101**	13.0	**3.88**	
Ethylbenzene	"	20.0	0.139	19.2	"	76.0-124	**95.3**	15.0	**4.11**	
Xylenes (total)	"	60.0	1.05	59.1	"	75.0-126	**96.7**	13.0	**2.25**	
Surrogate: 4-BFB (PID)	"	*50.0*		*50.5*	"	*75.0-120*	*101*			
Batch: 1190639	**Date Prepared: 11/22/99**					**Extraction Method: EPA 5030**				
Blank	**1190639-BLK1**									
Benzene	11/22/99			**ND**	ug/l	**0.300**				
Toluene	"			**ND**	"	**0.200**				
Ethylbenzene	"			**ND**	"	**0.680**				
Xylenes (total)	"			**ND**	"	**0.160**				
Surrogate: 4-BFB (PID)	"	*50.0*		*48.3*	"	*75.0-120*	*96.6*			
LCS	**1190639-BS2**									
Benzene	11/22/99	20.0		18.0	ug/l	67.0-130	90.0			

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

BTEX per EPA Method 8021B/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS (continued)	**1190639-BS2**									
Toluene	11/22/99	20.0		18.2	ug/l	75.0-126	91.0			
Ethylbenzene	"	20.0		17.9	"	76.0-124	89.5			
Xylenes (total)	"	60.0		53.5	"	75.0-126	89.2			
Surrogate: 4-BFB (PID)	"	*50.0*		*48.7*	"	*75.0-120*	*97.4*			
Batch: 1190671	**Date Prepared: 11/23/99**					**Extraction Method: EPA 5030**				
Blank	**1190671-BLK1**									
Benzene	11/23/99			**ND**	ug/l	**0.150**				
Toluene	"			**ND**	"	**0.270**				
Ethylbenzene	"			**ND**	"	**0.120**				
Xylenes (total)	"			**ND**	"	**0.140**				
Surrogate: 4-BFB (PID)	"	*50.0*		*46.6*	"	*75.0-120*	*93.2*			
LCS	**1190671-BS2**									
Benzene	11/23/99	20.0		18.2	ug/l	67.0-130	91.0			
Toluene	"	20.0		18.5	"	75.0-126	92.5			
Ethylbenzene	"	20.0		19.1	"	76.0-124	95.5			
Xylenes (total)	"	60.0		56.4	"	75.0-126	94.0			
Surrogate: 4-BFB (PID)	"	*50.0*		*46.6*	"	*75.0-120*	*93.2*			
Batch: 1190752	**Date Prepared: 11/29/99**					**Extraction Method: EPA 5030**				
Blank	**1190752-BLK1**									
Benzene	11/29/99			**ND**	ug/l	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**1.00**				
Surrogate: 4-BFB (PID)	"	*50.0*		*49.0*	"	*75.0-120*	*98.0*			
LCS	**1190752-BS2**									
Benzene	11/29/99	20.0		18.9	ug/l	67.0-130	94.5			
Toluene	"	20.0		18.2	"	75.0-126	91.0			
Ethylbenzene	"	20.0		17.3	"	76.0-124	86.5			
Xylenes (total)	"	60.0		52.5	"	75.0-126	87.5			
Surrogate: 4-BFB (PID)	"	*50.0*		*47.1*	"	*75.0-120*	*94.2*			
Batch: 1190791	**Date Prepared: 11/30/99**					**Extraction Method: EPA 5030**				
Blank	**1190791-BLK1**									
Benzene	11/30/99			**ND**	ug/l	**0.500**				

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

BTEX per EPA Method 8021B/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)	**1190791-BLK1**									
Toluene	11/30/99			**ND**	ug/l	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**1.00**				
Surrogate: 4-BFB (PID)	"	*50.0*		*46.4*	"	*75.0-120*	*92.8*			
LCS	**1190791-BS2**									
Benzene	11/30/99	20.0		17.4	ug/l	67.0-130	87.0			
Toluene	"	20.0		17.2	"	75.0-126	86.0			
Ethylbenzene	"	20.0		17.8	"	76.0-124	89.0			
Xylenes (total)	"	60.0		53.1	"	75.0-126	88.5			
Surrogate: 4-BFB (PID)	"	*50.0*		*47.5*	"	*75.0-120*	*95.0*			

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Total Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190680	**Date Prepared: 11/24/99**					**Extraction Method: EPA 7470**				
Blank	**1190680-BLK1**									
Mercury	11/24/99			**ND**	mg/l	**0.000200**				
LCS	**1190680-BS1**									
Mercury	11/24/99	0.00500		0.00509	mg/l	80.0-120	102			
Duplicate	**1190680-DUP1**		**P911340-07**							
Mercury	11/24/99		ND	ND	mg/l			20.0		
Matrix Spike	**1190680-MS1**		**P911340-07**							
Mercury	11/24/99	0.00500	ND	0.00507	mg/l	75.0-125	**101**			
Matrix Spike	**1190680-MS2**		**P911361-01**							
Mercury	11/24/99	0.00500	ND	0.00477	mg/l	75.0-125	**95.4**			
Batch: 1190782	**Date Prepared: 11/29/99**					**Extraction Method: EPA 200/3005**				
Blank	**1190782-BLK1**									
Arsenic	12/7/99			**ND**	mg/l	**0.00100**				
Barium	"			**ND**	"	**0.00200**				
Cadmium	"			**ND**	"	**0.00100**				
Chromium	"			**ND**	"	**0.00100**				
Copper	"			**ND**	"	**0.00200**				
Lead	"			**ND**	"	**0.00100**				
Selenium	12/9/99			**ND**	"	**0.00100**				
Silver	12/7/99			**ND**	"	**0.00100**				
Zinc	12/9/99			**ND**	"	**0.00500**				
LCS	**1190782-BS1**									
Arsenic	12/7/99	0.100		0.102	mg/l	80.0-120	102			
Barium	"	0.100		0.104	"	80.0-120	104			
Cadmium	"	0.100		0.104	"	80.0-120	104			
Chromium	"	0.100		0.101	"	80.0-120	101			
Copper	"	0.100		0.101	"	80.0-120	101			
Lead	"	0.100		0.112	"	80.0-120	112			
Selenium	"	0.100		0.0968	"	80.0-120	96.8			
Silver	"	0.0500		0.0450	"	80.0-120	90.0			
Zinc	12/9/99	0.100		0.0954	"	80.0-120	95.4			

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Total Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate	**1190782-DUP1**		**P911492-01**							
Arsenic	12/7/99		0.00405	0.00167	mg/l			20.0	**83.2**	7
Barium	"		ND	ND	"			20.0		
Cadmium	"		ND	ND	"			20.0		
Chromium	"		ND	ND	"			20.0		
Copper	"		0.0118	0.0120	"			20.0	**1.68**	
Lead	"		ND	ND	"			20.0		
Selenium	"		0.0103	ND	"			20.0		7
Silver	"		ND	ND	"			20.0		
Zinc	"		ND	ND	"			20.0		
Matrix Spike	**1190782-MS1**		**P911492-01**							
Arsenic	12/7/99	0.100	0.00405	0.0953	mg/l	75.0-125	**91.2**			
Barium	"	0.100	ND	0.0941	"	75.0-125	**94.1**			
Cadmium	"	0.100	ND	0.0877	"	75.0-125	**87.7**			
Chromium	"	0.100	ND	0.0972	"	75.0-125	**97.2**			
Copper	"	0.100	0.0118	0.106	"	75.0-125	**94.2**			
Lead	"	0.100	ND	0.0923	"	75.0-125	**92.3**			
Selenium	"	0.100	0.0103	0.0936	"	75.0-125	**83.3**			
Silver	"	0.0500	ND	0.0396	"	75.0-125	**79.2**			
Zinc	"	0.100	ND	0.0841	"	75.0-125	**84.1**			
Matrix Spike	**1190782-MS2**		**P911340-06**							
Arsenic	12/7/99	0.100	0.0390	0.125	mg/l	75.0-125	**86.0**			
Barium	"	0.100	0.267	0.343	"	75.0-125	**76.0**			
Cadmium	"	0.100	ND	0.0949	"	75.0-125	**94.9**			
Chromium	"	0.100	0.0347	0.132	"	75.0-125	**97.3**			
Copper	"	0.100	0.0473	0.143	"	75.0-125	**95.7**			
Lead	"	0.100	0.0376	0.126	"	75.0-125	**88.4**			
Selenium	"	0.100	ND	0.0926	"	75.0-125	**92.6**			
Silver	"	0.0500	ND	0.0424	"	75.0-125	**84.8**			
Zinc	12/9/99	0.100	0.129	0.216	"	75.0-125	**87.0**			

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Dissolved Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190658	**Date Prepared: 11/22/99**					**Extraction Method: EPA 7470**				
Blank	**1190658-BLK1**									
Mercury	11/23/99			**ND**	mg/l	**0.000200**				
LCS	**1190658-BS1**									
Mercury	11/23/99	0.00500		0.00498	mg/l	80.0-120	99.6			
Duplicate	**1190658-DUP1**		**P911132-06**							
Mercury	11/23/99		ND	ND	mg/l			20.0		
Matrix Spike	**1190658-MS1**		**P911132-06**							
Mercury	11/23/99	0.00500	ND	0.00506	mg/l	75.0-125	**101**			
Matrix Spike	**1190658-MS2**		**P911340-11**							
Mercury	11/23/99	0.00500	ND	0.00482	mg/l	75.0-125	**96.4**			
Batch: 1190727	**Date Prepared: 11/24/99**					**Extraction Method: EPA 200/3005**				
Blank	**1190727-BLK1**									
Arsenic	12/9/99			**ND**	mg/l	**0.00100**				
Barium	"			**ND**	"	**0.00200**				
Cadmium	"			**ND**	"	**0.00100**				
Chromium	"			**ND**	"	**0.00100**				
Copper	"			**ND**	"	**0.00200**				
Lead	"			**ND**	"	**0.00100**				
Selenium	"			**ND**	"	**0.00100**				
Silver	"			**ND**	"	**0.00100**				
Zinc	"			**ND**	"	**0.00500**				
LCS	**1190727-BS1**									
Arsenic	12/9/99	0.100		0.104	mg/l	80.0-120	104			
Barium	"	0.100		0.100	"	80.0-120	100			
Cadmium	"	0.100		0.108	"	80.0-120	108			
Chromium	"	0.100		0.102	"	80.0-120	102			
Copper	"	0.100		0.103	"	80.0-120	103			
Lead	"	0.100		0.106	"	80.0-120	106			
Selenium	"	0.100		0.107	"	85.0-115	107			
Silver	"	0.0500		0.0447	"	80.0-120	89.4			
Zinc	"	0.100		0.107	"	80.0-120	107			

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IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Dissolved Metals per EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate	**1190727-DUP1**		**P911132-03**							
Arsenic	12/9/99		0.321	0.323	mg/l			20.0	**0.621**	
Barium	"		0.701	0.697	"			20.0	**0.572**	
Cadmium	"		ND	ND	"			20.0		
Chromium	"		ND	ND	"			20.0		
Copper	"		0.00340	0.00360	"			20.0	**5.71**	
Lead	"		ND	ND	"			20.0		
Selenium	"		0.00510	0.00480	"			20.0	**6.06**	
Silver	"		ND	ND	"			20.0		
Zinc	"		ND	ND	"			20.0		
Matrix Spike	**1190727-MS1**		**P911132-03**							
Arsenic	12/9/99	0.100	0.321	0.438	mg/l	75.0-125	**117**			
Barium	"	0.100	0.701	0.780	"	75.0-125	**79.0**			
Cadmium	"	0.100	ND	0.0902	"	75.0-125	**90.2**			
Chromium	"	0.100	ND	0.0976	"	75.0-125	**97.6**			
Copper	"	0.100	0.00340	0.0936	"	75.0-125	**90.2**			
Lead	"	0.100	ND	0.0917	"	75.0-125	**91.7**			
Selenium	"	0.100	0.00510	0.0983	"	75.0-125	**93.2**			
Silver	"	0.0500	ND	0.0396	"	75.0-125	**79.2**			
Zinc	"	0.100	ND	0.0801	"	75.0-125	**80.1**			

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**Refer to end of report for text of notes and definitions.*

Crystal Burkholder, Project Manager

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Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

IT Corporation - Portland	Project:	Willbridge (TOSCO)	Sampled: 11/16/99
P.O. Box 231269	Project Number:	B15-300.2A	Received: 11/17/99
Portland, OR 97224	Project Manager:	David Weymann	Reported: 3/5/00 10:33

Polynuclear Aromatic Compounds per EPA 8270M-SIM/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1190573	**Date Prepared: 11/18/99**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1190573-BLK1**									
Acenaphthene	12/6/99			**ND**	ug/l	**0.100**				
Acenaphthylene	"			**ND**	"	**0.100**				
Anthracene	"			**ND**	"	**0.100**				
Benzo (a) anthracene	"			**ND**	"	**0.100**				
Benzo (a) pyrene	"			**ND**	"	**0.100**				
Benzo (b) fluoranthene	"			**ND**	"	**0.100**				
Benzo (ghi) perylene	"			**ND**	"	**0.100**				
Benzo (k) fluoranthene	"			**ND**	"	**0.100**				
Chrysene	"			**ND**	"	**0.100**				
Dibenzo (a,h) anthracene	"			**ND**	"	**0.200**				
Fluoranthene	"			**ND**	"	**0.100**				
Fluorene	"			**ND**	"	**0.100**				
Indeno (1,2,3-cd) pyrene	"			**ND**	"	**0.100**				
Naphthalene	"			**ND**	"	**0.100**				
Phenanthrene	"			**ND**	"	**0.100**				
Pyrene	"			**ND**	"	**0.100**				
Surrogate: 2-Fluorobiphenyl	"	*2.50*		*3.27*	"	*37.0-135*	*131*			*6*
Surrogate: Nitrobenzene-d5	"	*2.50*		*1.93*	"	*48.0-140*	*77.2*			
Surrogate: p-Terphenyl-d14	"	*2.50*		*1.66*	"	*25.0-147*	*66.4*			
LCS	**1190573-BS1**									**8**
Acenaphthene	12/9/99	1.00		0.652	ug/l	50.0-150	65.2			
Benzo (a) pyrene	"	1.00		0.564	"	50.0-150	56.4			
Pyrene	"	1.00		0.541	"	50.0-150	54.1			
Surrogate: 2-Fluorobiphenyl	"	*2.50*		*1.65*	"	*37.0-135*	*66.0*			
Surrogate: Nitrobenzene-d5	"	*2.50*		*1.80*	"	*48.0-140*	*72.0*			
Surrogate: p-Terphenyl-d14	"	*2.50*		*1.57*	"	*25.0-147*	*62.8*			

North Creek Analytical - Portland

**Refer to end of report for text of notes and definitions*

Crystal Burkholder, Project Manager

COP0015159

www.ncalabs.com

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Notes and Definitions

#	Note
1	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
2	Result could not be accurately quantitated due to coeluting organic compounds.
3	Surrogate recovery is outside control limits due to matrix interference.
4	Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
5	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
6	Estimated concentration. Daily calibration check standard recovery for this analyte was 131%. Results are flagged when the standard recovery exceeds 130% for any compound.
7	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
8	No data available for LCS Duplicate due to an extraction error.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical - Portland

Crystal Burkholder, Project Manager

COP0015160

APC 0922

CORRESPONDENCE

TOSCO

June 16, 2000

TO: S. M. CADDELL

FROM: J. W. SHERMAN

PORTLAND TERMINAL KEROSENE RELEASE

OVERVIEW

On June 15 at 1305 hours, a ¾" sample port gate valve was found open on a kerosene line which runs from tanks 2982 and 3412 to a refined load rack. The valve is approximately 3' downstream of product pump G-163 and is on a line that is charged to +/- 50 psi when diesel or kerosene is loaded. When the open valve was discovered, the kerosene pump was running and product was being discharged through the valve into a containment basin at a rate of 120 gpm. A local pump stop switch was activated which shut down the pump and stopped the discharge. The valve was then closed. All product was contained within the terminal and no product migrated off site. A total of 6538 gallons of product were discharged through the valve. 2688 gallons have been accounted for. 3850 gallons are unaccounted.

SYSTEM BACKGROUND

The Portland Terminal load rack uses one load arm at each load spot for diesel, kerosene or a blend of the two products. Loading is managed by a Smith Meter Accuload II RBM. The system is designed to lay up the load arm in kerosene at the end of each compartment. This requires the kerosene pump to start and recirculate against a closed control valve each time diesel #2 is loaded. When the diesel totalizer reaches the last 10 gallons to be loaded in a compartment, the diesel control valve closes and the kerosene control valve opens. The line is then laid up in kerosene. This type of design and operation is customary on load racks loading multiple products through one arm. Smith Meter worked with Tosco several times, the latest occasion was last year, to attempt to limit the pump start to just prior to the line lay up. They have been unable to accomplish

this. Consequently, the pump for any product being used in a line lay up runs whenever a product sharing the common load arm is loaded.

PRODUCT FLOW DURING THE RELEASE

Under normal operating conditions the kerosene pump pushes against a closed control valve until the final 10 gallons of a compartment. With the sample port valve open, the line was no longer tight and product was discharged to a containment basin when the pump was running. The product drained through the tank farm subsurface process water system to lift station #7, adjacent to oil water separator 004. The lift station has an automatic double diaphragm pump that transfers any process water/product to process separator 003 for skimming, recovery and transfer to a slops tank. During the release of the kerosene the pneumatic pump system failed. Product backed up in the subsurface drainage system and overflowed at both the pump basin and lift station.

RATE OF RELEASE

The 120 gpm flow rate through the gate valve was calculated by Alpha Engineering using the line hydraulics, the G-163 pump curve and a software program, Pipeflow. The rate is based on the pump pushing against the closed control valve. Had the control valve been open and a truck loading kerosene, the discharge rate would have been 100 gpm. No kerosene was loaded other than line lay ups. With no pump running the discharge rate was calculated to be 17 gpm.

Based on load time data, BOL's, load rates, the estimated amount of released product, a pump discharge rate of 120 gpm and a gravity discharge rate of 17 gpm, product probably began being released through the valve at around 1130 hours. The release was found at 1305 hours. Terminal personnel were within 15 feet of the pump at midnight and within 50 feet of the pump at 0400 during a clock round. At 0815 and 1115 hours personnel were within 100' and in direct line of site of the pump bay. No system failures were noticed at those times.

RESPONSE

Terminal personnel discovered the release at 1305 hours. Our OSRO was notified at 1315. Agency notifications also began at 1315. Notification to management was at 1327 hours. Terminal cleanup began at 1335 hours. The OSRO management team arrived at 1345 hours with the response crew arriving at 1555 hours. Cleanup continued until 2100 hours on June 15. The cleanup resumed at 0700 hours on June 16.

Tosco Refining Company
A Division of Tosco Corporation
Portland Terminal
5528 Northwest Doane Avenue
Portland, Oregon 97210

TOSCO

ADC 0922
NOV CORRESP.

July 12, 2000

Mr. Loren Garner
State On-Scene Coordinator
Oregon Department of Environmental Quality
2020 SW 4th Avenue, Ste. 400
Portland, OR 97201-5884

Re: Written Report for Pump G-163 Kerosene Spill
Tosco Refining Company Portland Terminal

Dear Mr. Garner:

In response to your correspondence of June 15, 2000 and in compliance of OAR 340-108-040, please find the enclosed written report concerning the kerosene spill experienced at the Tosco Portland Terminal on June 15, 2000. The report includes the completed form provided in your June 15 correspondence as well as a summary of how the incident occurred and the response actions taken to date. Copies of the supplemental information requested in the report form are attached to the report

If you have any questions or require additional information, please feel free to contact me at 248-1538 or Martin Cramer at 248-1517.

Sincerely,

for

John Sherman
Terminal Superintendent

Enclosures

cc: M. Cramer

File: M.Cramer - Portland/OilSpill/Spills/LGDEQrptltr

SPILL/RELEASE REPORT

1 - GENERAL INFORMATION OERS No. 00-1357

a. Company/Individual Name: TOSCO REFINING COMPANY

b. Address: 5528 NW DOANE AVE.
PORTLAND, OR 97210

c. Company Contact Person: JOHN SHERMAN

d. Phone Number(s): (503) 248-1538

e. Specific on-site location of the release (and address if different from above):
TANK FARM NO. 2 ADJACENT TO TANK 2982
(SAME ADDRESS AS ABOVE)

Please provide a map of the site showing area(s) where the release occurred, any sample collection locations, location of roads/ditches/surface water bodies, etc.

2 - RELEASE INFORMATION

a. Date/Time Release started: 6-15-2000/UNKNOWN Date/Time stopped: 6-15-2000 @ 1305

b. Release was reported to (specify Date/Time/Name of Person contacted where applicable):

ODEQ 6-15 @ 1345 HOURS; CONTACTED TINA AND MARIA

OERS 6-15 @ 1405 HOURS; ELAINA; # 2000-1357

NRC 6-15 @ 1405 HOURS; THOMAS; # 532-254

Other (describe): USCG @ 1412 HOURS, CPO SMITH / MULTNOMAH COUNTY @ 1415 HOURS - MARIA/

c. Person(s) reporting release: STEVEN NELSON

d. Name, quantity and physical state (gas, liquid, solid or semi-solid) of material(s) released:
KEROSENE, 6,538 GALS, LIQUID

Please attach copies of material safety data sheets (MSDS) for released material(s).

e. The release affected: X Air ___ Groundwater ___ Surface Water X Soil ___ Sediment

f. Name and distance to nearest surface water body(s), even if unaffected (include locations of creeks, streams, rivers and ditches that discharge to surface water on maps):
WILLAMETTE RIVER - APPROX. 1,000 FT N.E. OF SPILL LOCATION
Has the release reached the surface water identified above?: ___ Yes X No
Could the release potentially reach the surface water identified above? ___ Yes X No
Explain: ONLY PATHWAY TO RIVER IS VIA STORM WATER COLLECTION/TREATMENT SYSTEM WHICH WAS CLOSED OFF AT TIME OF SPILL

g. Depth to nearest aquifer/groundwater: 13 FT.
Is nearest aquifer/groundwater potable (drinkable)? ___ Yes X No
Has the release reached the nearest aquifer/groundwater? ___ Yes ? No
Explain: HAVE NOT CONFIRMED SPILL DID NOT REACH GROUNDWATER BUT SOIL SAMPLE ANALYTICAL RESULTS INDICATE LOWER EXTENT OF PENETRATION IS APPROX. 12 FT.

h. Release or potential release to the air occurred? X Yes ___ No

Explain: RELEASE TO AIR LIMITED DUE TO RELATIVELY LOW VOLATILITY OF KEROSENE BUT SOME VOLATILIZATION MUST HAVE OCCURRED

i. Was there a threat to public safety? ___ Yes X No

j. Is there potential for future releases? ___ Yes X No

Explain: SAMPLING VALVE APPARENTLY VIBRATED OPEN AND CAP WAS INADVERTENTLY LEFT OFF SAMPLE PORT. ALL SAMPLE PORTS WERE CHECKED FOR CAPS AND VALVE IS

k. Describe other effects/impacts from release (emergency evacuation, fish kills, etc.): BEING TESTED TO DETERMINE IF PRONE TO VIBRATING OPEN. IF SO, ALL VALVES OF THIS TYPE WILL BE REPLACED. LOCKS ARE ALSO BEING INSTALLED ON ALL SAMPLE VALVES.

None

l. Describe how the release occurred. Include details such as the release source, cause, contributing weather factors, activities occurring prior to or during the release, dates and times of various activities, first responders involved in containment activities, etc.:

SEE ATTACHED WRITE-UP

3 - SITE INFORMATION

a. Adjacent land uses include (check all that apply and depict on site maps):
___ Residential X Commercial ___ Light Industrial X Heavy Industrial
___ Agricultural ___ Other (describe): _____

b. What is the population density surrounding the site: MINIMAL - PRIMARILY INDUSTRIAL

c. Is the site and/or release area secured by fencing or other means? X Yes ___ No

d. Soil types (check all that apply): ___ alluvial ___ bedrock ___ clay X sandy
X silt ___ silty loam ___ artificial surface (cement/asphalt/etc.)

e. Describe site topography: RELATIVELY FLAT WITHIN TANK FARM WITH LOCALIZED GRADING TOWARDS STORM WATER CATCH BASINS AND PIPING TRENCHES.

h. Release or potential release to the air occurred? X Yes ___ No
Explain: RELEASE TO AIR LIMITED DUE TO RELATIVELY LOW VOLATILITY OF KEROSENE BUT SOME VOLATILIZATION MUST HAVE OCCURRED

i. Was there a threat to public safety? ___ Yes X No

j. Is there potential for future releases? ___ Yes X No
Explain: SAMPLING VALVE APPARENTLY VIBRATED OPEN AND CAP WAS INADVERTENTLY LEFT OFF SAMPLE PORT. ALL SAMPLE PORTS WERE CHECKED FOR CAPS AND VALVE IS BEING TESTED TO DETERMINE IF PRONE TO VIBRATING OPEN. IF SO, ALL VALVES OF THAT TYPE WILL BE REPLACED. LOCKS ARE ALSO BEING INSTALLED ON ALL SAMPLE VALVES.

k. Describe other effects/impacts from release (emergency evacuation, fish kills, etc.): NONE

l. Describe how the release occurred. Include details such as the release source, cause, contributing weather factors, activities occurring prior to or during the release, dates and times of various activities, first responders involved in containment activities, etc.:

SEE ATTACHED WRITE-UP

3 - SITE INFORMATION

a. Adjacent land uses include (check all that apply and depict on site maps):
___ Residential X Commercial ___ Light Industrial X Heavy Industrial
___ Agricultural ___ Other (describe): _____

b. What is the population density surrounding the site: MINIMAL - PRIMARILY INDUSTRIAL

c. Is the site and/or release area secured by fencing or other means? X Yes ___ No

d. Soil types (check all that apply): ___ alluvial ___ bedrock ___ clay X sandy
X silt ___ silty loam ___ artificial surface (cement/asphalt/etc.)

e. Describe site topography: RELATIVELY FLAT WITHIN TANK FARM WITH LOCALIZED GRADING TOWARDS STORM WATER CATCH BASINS AND PIPING TRENCHES.

4 - CLEANUP INFORMATION

a. Was site cleanup performed? X Yes ___ No
If No, explain: _____

b. Who performed the site cleanup?
Company Name: COWLITZ CLEAN SWEEP
Address: 9420 NW ST. HELENS
PORTLAND, OR 97231
Cleanup Supervisor: SCOTT GILFILLAN
Phone Number(s): (360) 957-2018

c. Has all contamination been removed from the site? ___ Yes X No
If No, explain: TOP 2 FT OF SOIL REMOVED FROM SPILL AREA AND STOCKPILED ONSITE. WILL LIKELY REMOVE ANOTHER 2 FT OR SO AND TRANSPORT TO TPS FOR TREATMENT / DISPOSAL

d. Estimated volume of contaminated soil removed: 60 YDS^3

e. Estimated volume of contaminated soil left in place: 400 YDS^3

f. Was a hazardous waste determination made for cleanup materials? ___ Yes X No

g. Based on the determination, are the cleanup materials hazardous wastes?
___ Yes X No If Yes, list all waste codes: _____

h. Was contaminated soil or water disposed of at an off-site location? ___ Yes X No
If yes, attach copies of receipts/manifests/etc., and provide the following information:
Facility Name: _____
Address: _____
_____
Facility Contact: _____
Phone Number(s): _____

i. Is contaminated soil or water being stored and/or treated on-site? X Yes ___ No
If yes, please describe the material(s), storage and/or treatment area, and methods utilized (attach additional sheets if necessary):
EXCAVATED MATERIAL IS STOCKPILED IN TANK FARM NO. 3 PENDING REMOVAL OF ADDITIONAL SOILS AND ARRANGEMENTS FOR TRANSPORT TO TPS FOR THERMAL DESORPTION. SOILS ARE PLACED ON, AND COVERED BY PLASTIC SHEETING

j. Describe cleanup activities including what actions were taken, dates and times actions were initiated and completed, volumes of contaminated materials that were removed, etc. (attach additional sheets or contractor reports if necessary or more convenient):
SEE ATTACHED WRITE-UP

5 - SAMPLING INFORMATION

Attach copies of all sample data and indicate locations of sample collection on maps.

a. Were samples of contaminated soil collected? _X_ Yes ____ No ____ N/A
b. Were samples of contaminated water collected? ____ Yes _X_ No ____ N/A
c. Were samples collected to show that all contamination had been removed?
____ Yes _X_ No ____ N/A
d. Describe sampling activities, results and discuss rationale for sampling methods:

SEE ADDENDUM WRITE-UP

6 - SPILL REPORT CHECKLIST

To ensure that you have gathered all the information requested by the Department in this Spill/Release Report, please complete the following checklist:

_✓_ Map(s) of the site showing buildings, roads, surface water bodies, ditches, waterways, point of the release, extent of contamination, areas of excavation and sample collection locations attached.

_✓_ Material Safety Data Sheet (MSDS) for released material(s) attached.

_✓_ Sampling data/analytical results attached.

_N/A_ Receipts/manifests (if any) for disposal of cleanup materials attached.

_N/A_ Contractor reports (if any) attached.

SPILL/RELEASE REPORT – SUPPLEMENTAL INFORMATION
TOSCO PORTLAND TERMINAL PUMP G-163 KEROSENE RELEASE

2 – Release Information

2.I. Release Description

The release occurred apparently as the result of a sampling valve on the discharge side of Pump G-163 vibrating open and allowing kerosene to be discharged on to the ground. The pump supplies the truck loading rack with kerosene. Consequently, kerosene was discharged primarily when the pump was active although it is assumed some draindown leakage also occurred between pumping periods. The pump is adjacent to Tank 2982 (kerosene tank) in Tank Farm No. 2 along Doane Avenue.

The release was discovered at 1305 hrs on June 15, 2000 by John Sherman, the Terminal Superintendent, during a tour of the tank farm. Truck loading was temporarily terminated while the valve was closed. The valve is actually fitted to a redundant sampling port which is rarely if ever used and, as a result, did not have a cap screwed on the end of the port as is standard practice at the terminal. A kerosene sample was last pulled approximately one week before the release but reportedly from the other sampling port. A Terminal Operator was in the near vicinity of Pump G-163 as late as 1115 hrs that morning and did not see, smell, or hear anything unusual. That would suggest the release occurred over an approximately 1.75 hour period.

The pump area is equipped with a concrete containment pad that drains to the terminal process water system to capture leaks and small spills and did collect a large portion of the release. However, the sampling port faces down and is situated above some piping resulting in some of the flow being deflected by the piping or splashing on to the soil outside containment pad. The kerosene then flowed into an adjacent pipeway where it was contained.

The containment pad itself drains to a lift station at the north end of the tank farm (adjacent to a storm water separator) where a pump operating on a float activated switch transfers collected liquids to the process water separator in Tank Farm No. 1. The lift station pump apparently operated early on in the incident and transferred much of the released kerosene to the process separator before stopping. The lift station then overflowed into the adjacent pipeway where the kerosene was contained. It is uncertain why the lift station pump stopped working but we think the float switch was set for the specific gravity of water and therefore, would not necessarily be activated by the kerosene.

Based on the amount of kerosene in Tank 2982 at 12:00 am that morning, the post-release volume in the tank, and the quantity loaded into trucks during the interim period, the release volume was estimated to be 6,538 gals. Approximately 2,688 gals were recovered primarily from the process separator but also includes 50 to 100 gals. from kerosene pooled on the ground surface. The remaining 3,850 gals. Is unaccounted for but assumed to be spilled on the ground surface.

COP0015169

4 – Cleanup Information

4.j. Description of Cleanup Activities

Following termination of the release and assessment of the situation, Tosco contracted Cowlitz Clean Sweep (CCS) to respond to the spill. CCS arrived at 1355 hrs on June 15 and began recovering the surface soils in the spill areas at 1555 hrs. Due to the limited access to the areas from above ground piping in the tank farm as well as above ground piping within the pipeway, the soil was recovered using Supersucker vacuum trucks staged at the closest access points and long flexible hoses stretching to the spill area. Soils with the heaviest apparent impact were removed that evening with considerably more soils removed the following day. Between 1 to 2 ft of soil was removed from the impacted areas around the pump and lift station that totaled approximately 60 cu. yds. The recovered soils are temporarily stockpiled in the southern corner of Tank Farm No. 3 and placed on, and covered by, plastic sheeting. The impacted soil will be sent to TPS for treatment by thermal desorption.

Tosco is currently evaluating the practicality of removing the remaining impacted soils. The analytical results for the soil samples taken suggest the kerosene has penetrated to a depth of 12 ft below ground surface or more in the pump area and greater than 5 ft in the lift station/separator area. The issue is complicated by a number of factors including the presence of pre-existing contamination particularly in the lift station area as well as the presence of pipe supports in the pipeways above both spill areas and the pump containment pad, the separator, and product storage tanks whose structural integrity could be jeopardized by the removal of large amounts of soil. We expect the feasibility evaluation to be completed within the next week.

5 – Sampling Information

5.d. Description of Samping Activities

Soil samples were collected the evening of June 15 by CCS using a shovel to dig a hole and hand trowel to collect soil at various depths within one hole for each spill area. The holes were located at the apparent low spot within each area to provide worst case conditions. Due to the sampling method, we could only reach a maximum depth of approximately 7 ft in the pump area and it appeared kerosene penetration stopped at around 3 to 4 ft in the lift station area. The intent of the sampling was to attempt to determine the depth of penetration and to differentiate between the kerosene spill and pre-existing contamination.

The samples (PA-01 through –07 in the pump area and SA-01 through –05 in the lift station/separator area) were submitted to North Creek Analytical in Beaverton on June 16th for NWTPH-Dx (diesel and heavy oil ranges) analyses and fingerprinting on a 24 hr turnaround basis. The draft results were not received until the afternoon of June 20th and indicated that fresh kerosene was the sole or primary contaminant in all samples. Kerosene concentrations decreased sharply at a depth of a few feet in the pump area but generally remained consistent in the 20,000 to 30,000 mg/kg range down to the 7ft sampling depth. The lift station area samples also demonstrated a sharp decline in concentrations from 65,600 mg/kg in the upper few feet to about 60 mg/kg at a depth of

2.5 ft. Copies of the analytical reports are attached and the results are summarized in the attached table.

In an effort to better delineate the vertical and horizontal extent of impacted soils, GeoEngineers was retained to conduct additional sampling activities. Four hand auger borings were completed in each spill area to varying depths with samples taken every foot or two and field screened for apparent presence of hydrocarbons. Generally, two samples from each boring were selected for laboratory analyses with the first sample representing the heaviest apparent contamination and the second the apparent lower extent of contamination. Due to the presence of pre-existing contamination, the lower extent was, in some cases, determined qualitatively in the field by a change from a sharp kerosene odor to a different or older petroleum odor. The samples were submitted to NCA for both NWTPH-Dx and NWTPH-Gx (gasoline) and BTEX on a 48 hr turnaround basis. The analysis for gasoline and BTEX was done to assist in the differentiation between the kerosene release and pre-existing contamination.

The analytical results for the samples collected by GeoEngineers as well as fingerprinting evaluations done by the laboratory suggest significant concentrations of petroleum hydrocarbons are present at depths up to 12.5 ft (547 mg/kg) in the pump area and 5 ft (3,370 mg/kg in the separator/lift station area. Higher hydrocarbon concentrations were noted at greater depths in the separator/lift station area but the lab indicated it was historic contamination. Copies of the analytical reports are attached and the results are summarized in the attached table.

COP0015171

Kerosene Spill Soil Sample Results
(all results in mg/kg)

Area/ Sample No.	Sample Depth (ft)	Heavy Oil	Diesel/ Kerosene	Gasoline	Xylenes	Ethyl Benzene	Toluene	Benzene	Notes
Pump Area – Initial Samples									
PA-01	0.08	NT	169,000	NT	NT	NT	NT	NT	Matches source oil
PA-02	0.42	NT	34,100	NT	NT	NT	NT	NT	Matches source oil
PA-03	0.83	NT	28,200	NT	NT	NT	NT	NT	Matches source oil
PA-04	1.17	NT	16,500	NT	NT	NT	NT	NT	Matches source oil
PA-05	1.58	NT	24,400	NT	NT	NT	NT	NT	Matches source oil
PA-06	2.5	NT	24,600	NT	NT	NT	NT	NT	Matches source oil
PA-07	4.33	NT	20,300	NT	NT	NT	NT	NT	Matches source oil
Pump Area – Supplemental Samples									
PA-1-4.5	4.5	ND	13,500	4,340	53.2	ND	ND	ND	Matches source oil
PA-1-11.0	11.0	ND	229	167	0.601	ND	ND	ND	No match – weathered
PA-2-4.0	4.0	ND	15,900	4,680	56.4	ND	ND	ND	Matches source oil
PA-2-12.5	12.5	ND	547	308	1.63	0.262	ND	ND	Matches source oil
PA-3-2.5	2.5	ND	1,070	146	1.04	0.17	ND	ND	Matches source oil
PA-4-3.0	3.0	ND	ND	3.90	0.0532	ND	ND	ND	Matches source oil
Separator/Lift Station Area – Initial Samples									
SA-01	0.08	NT	65,600	NT	NT	NT	NT	NT	Matches source oil
SA-02	0.33	NT	27,700	NT	NT	NT	NT	NT	Matches source oil
SA-03	1.08	NT	112,000	NT	NT	NT	NT	NT	Matches source oil
SA-04	1.58	NT	3,840	NT	NT	NT	NT	NT	Matches source oil
SA-05	2.5	NT	58.9	NT	NT	NT	NT	NT	Matches source oil
Separator/Lift Station Area – Supplemental Samples									
SA-1-2.0	2.0	ND	3,560	986	10.3	1.83	ND	ND	Matches source oil
SA-1-7.0	7.0	ND	3,350	6,290	490	70.4	18	ND	No match – contains gasoline
SA-2-2.5	2.5	ND	2,110	856	8.35	1.24	ND	ND	Matches source oil
SA-2-6.0	6.0	ND	346	340	4.72	0.823	ND	ND	No match – contains gasoline
SA-3-1.5	1.5	ND	15,000	3,620	58.6	4.51	2.54	ND	Matches source oil
SA-3-5.0	5.0	ND	3,370	896	9.43	2.22	0.845	ND	Matches source oil
SA-4-1.5	1.5	ND	360	175	1.03	ND	ND	ND	Matches source oil
SA-4-5.5	5.5	ND	143	187	2.78	0.475	ND	ND	No match

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471

July 13, 2000

Marty Cramer
Tosco Refining Company
5528 NW Doane Avenue
Portland, OR 97210

ROC 0922
AGENCY CORRESP.

Re: Tosco Kerosene Spill
OERS No. 00-1357

Dear Mr. Cramer:

On June 15, 2000, the Department of Environmental Quality (DEQ) began coordinating with you concerning the spill of kerosene near pump G-163 at your Portland Ternimal facility at 5528 NW Doane Avenue in Portland, Oregon. Your written report indicates that you have recovered free product, removed some contaminated soils, and conducted additional investigation activities. The incident does not meet current cleanup levels.

Due to the nature of the remaining contamination, this spill file has been closed and the site is being referred to the existing project for this property within our Cleanup Program for further action. You will receive a final invoice for our oversight costs associated with this spill file.

Jill Kiernan or our Cleanup Program has been contacted concerning this incident and will coordinate on additional actions at this site. Please work with Jill to resolve the contamination concerns associated with this release. She can be reached at (503) 229-6900.

If you have any questions about these matters, please contact me at (503) 229-5614.

Sincerely,

Loren G. Garner

Loren G. Garner
State On-Scene Coordinator
Spill Management Program

cc: Jill Kiernan, NWR

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Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696
TTY (503) 229-6993

July 27, 2000

Marty Kramer
Tosco
P.O. Box 76
Portland, OR 97207

AOC 0922
AGENCY CORRESP.

Re: Petroleum Release
OERS No. 00-1724

Dear Mr. Kramer:

On July 25, 2000, the Department of Environmental Quality (DEQ) received a report of a release of a petroleum sheen from a stormwater outfall located at your facilities boundary. Subsequently it was determined the source of sheen was petroleum-contaminated groundwater that was entering the storm sewer through cracks in the joints of the piping. Therefore, you are requested to take and/or continue all containment and cleanup actions possible to prevent the spread of the spill to public waters, groundwater or soils beyond the original spill site.

In accordance with Oregon Administrative Rules (OAR) 340-108-040 (copy attached), you are required to submit a written report describing the spill. I have enclosed a spill report outline as a guideline so that all information that is necessary for the documentation and review of your spill report is received. We ask you to submit this information no later than August 17, 2000. Please submit the report to:

Spill OSC, DEQ, 2020 SW 4th, #400, Portland, Oregon, 97201-5884.

Responsible parties are required to pay costs incurred by DEQ for oversight of the investigation and cleanup of the spill or release (Oregon Revised Statutes 465.255). DEQ oversight costs include direct and indirect costs. Direct costs include site-specific expenses and legal costs. Indirect costs are those general management and support costs of the DEQ allocable to oversight of this cleanup and not charged as direct, site-specific costs.

If you have any questions about this request, please contact Mike Greenburg at (503) 229-5153.

Enclosures: OAR 340-108
Spill Report Outline

DEQ-1

Tosco Refining Company
A Division of Tosco Corporation
Portland Terminal
6528 Northwest Doane Avenue
Portland, Oregon 97210

TOSCO

AOC 0922
ACV CORRESP.

August 16, 2000

Via Certified Mail #Z 266 018 295

Mr. Mike Greenburg
Acting State On-Scene Coordinator
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204-1390

Re: Written Report for July 24, 2000 Outfall Sheen Event
Tosco Refining Company Portland Terminal

Dear Mr. Greenburg:

In response to your correspondence of July 27, 2000 and in compliance of OAR 340-108-040, please find the enclosed written report concerning the sheen event experienced at the City of Portland Storm Sewer Outfall No. 22 on July 24, 2000. The outfall is adjacent to the Tosco Portland Terminal marine dock. The report includes the completed form provided in your July 27 correspondence as well as a summary of how the incident occurred and the response actions taken to date. Copies of the supplemental information requested in the report form are attached to the report

If you have any questions or require additional information, please feel free to contact me at 248-1517.

Sincerely,

Martin Cramer
Project Manager, Remediation

Enclosures

cc: J. Sherman, Tosco
G. O'Regan, Chevron

File: M.Cramer - Portland/OilSpill/Spills/MGDEQrptltr

SPILL/RELEASE REPORT

1 - GENERAL INFORMATION OERS No. 00-1724

a. Company/Individual Name: TOSCO REFINING COMPANY

b. Address: 5528 NW DOANE AVE.
PORTLAND, OR 97210

c. Company Contact Person: MARTY CRAMER

d. Phone Number(s): (503) 248-15

e. Specific on-site location of the release (and address if different from above):
CITY OF PORTLAND STORM SEWER OUTFALL #22 ADJACENT TO THE TOSCO DOCK

Please provide a map of the site showing area(s) where the release occurred, any sample collection locations, location of roads/ditches/surface water bodies, etc.

2 - RELEASE INFORMATION - SEE ATTACHED

a. Date/Time Release started: 7/24/00 - 1000 HRS Date/Time stopped: 8/7/00 - 1600 HRS

b. Release was reported to (specify Date/Time/Name of Person contacted where applicable):
ODEQ 7/24/00 / ~1600 HRS / MIKE GRAINGER
OERS N/A
NRC N/A
Other (describe): USCG PORTLAND MSO 7/24/00 - 1300 HRS

c. Person(s) reporting release: MARTY CRAMER

d. Name, quantity and physical state (gas, liquid, solid or semi-solid) of material(s) released:
MIXTURE OF DIESEL AND GASOLINE, UNKNOWN QUANTITY (SHEEN), LIQUID STATE

Please attach copies of material safety data sheets (MSDS) for released material(s).

e. The release affected: ___ Air ___ Groundwater X Surface Water ___ Soil X Sediment

f. Name and distance to nearest surface water body(s), even if unaffected (include locations of creeks, streams, rivers and ditches that discharge to surface water on maps):
WILLAMETTE RIVER - 0 FT
Has the release reached the surface water identified above?: X Yes ___ No
Could the release potentially reach the surface water identified above? ___ Yes ___ No
Explain: N/A

g. Depth to nearest aquifer/groundwater: N/A
Is nearest aquifer/groundwater potable (drinkable)? ___ Yes X No
Has the release reached the nearest aquifer/groundwater? X Yes ___ No
Explain: PRODUCT ORIGINATED FROM HISTORICAL SPILLS THAT REACHED GROUNDWATER AND ENTERED STORM SEWER THROUGH LEAKING JOINT

h. Release or potential release to the air occurred? X Yes ___ No

Explain: THERE WAS A HYDROCARBON ODOR AT ONSITE SUGGESTING A RELEASE TO AIR BUT MATERIAL IS PRIMARILY OILY THUS RELEASE WAS MINIMAL

i. Was there a threat to public safety? ___ Yes X No

j. Is there potential for future releases? X Yes ___ No

Explain: SUBSURFACE PRODUCT EXISTS IN VICINITY OF STORM SEWER AND COULD ENTER PIPE IF A NEARBY JOINT FAILS AGAIN

k. Describe other effects/impacts from release (emergency evacuation, fish kills, etc.):

NONE NOTED

l. Describe how the release occurred. Include details such as the release source, cause, contributing weather factors, activities occurring prior to or during the release, dates and times of various activities, first responders involved in containment activities, etc.:

SEE ATTACHED

3 - SITE INFORMATION

a. Adjacent land uses include (check all that apply and depict on site maps):
___ Residential ___ Commercial X Light Industrial X Heavy Industrial
___ Agricultural ___ Other (describe): _____

b. What is the population density surrounding the site: MINIMAL - PRIMARILY INDUSTRIAL

c. Is the site and/or release area secured by fencing or other means? X Yes ___ No

d. Soil types (check all that apply): ___ alluvial ___ bedrock ___ clay X sandy
___ silt ___ silty loam ___ artificial surface (cement/asphalt/etc.)

e. Describe site topography: MODERATE SLOPE BACKSHORE AND LOW SLOPE SANDY SHORELINE

4 - CLEANUP INFORMATION

a. Was site cleanup performed? ___ Yes _X_ No

If No, explain: Tosco & Chevron are responsible for incident - Removal of contaminated Beach sediments in vicinity of outfall will be conducted once all permits obtained

b. Who performed the site cleanup?

Company Name: _____

Address: _____

_____

Cleanup Supervisor: _____

Phone Number(s): _____

c. Has all contamination been removed from the site? ___ Yes _X_ No

If No, explain: See 4a Above

_____

d. Estimated volume of contaminated soil removed: _____

e. Estimated volume of contaminated soil left in place: 50 yds^3

f. Was a hazardous waste determination made for cleanup materials? ___ Yes _X_ No

g. Based on the determination, are the cleanup materials hazardous wastes?

___ Yes _X_ No If Yes, list all waste codes: _____

h. Was contaminated soil or water disposed of at an off-site location? ___ Yes _X_ No

If yes, attach copies of receipts/manifests/etc., and provide the following information:

Facility Name: _____

Address: _____

_____

Facility Contact: _____

Phone Number(s): _____

i. Is contaminated soil or water being stored and/or treated on-site? ___ Yes _X_ No

If yes, please describe the material(s), storage and/or treatment area, and methods utilized (attach additional sheets if necessary):

_____

_____

_____

_____

j. Describe cleanup activities including what actions were taken, dates and times actions were initiated and completed, volumes of contaminated materials that were removed, etc. (attach additional sheets or contractor reports if necessary or more convenient):

See Attached

_____

_____

_____

_____

5 - SAMPLING INFORMATION

Attach copies of all sample data and indicate locations of sample collection on maps.

a. Were samples of contaminated soil collected? ____Yes __X__No ____N/A
b. Were samples of contaminated water collected? ____Yes __X__No ____N/A
c. Were samples collected to show that all contamination had been removed?
____Yes __X__No ____N/A
d. Describe sampling activities, results and discuss rationale for sampling methods:

SEE ATTACHED

6 - SPILL REPORT CHECKLIST

To ensure that you have gathered all the information requested by the Department in this Spill/Release Report, please complete the following checklist:

__X__ Map(s) of the site showing buildings, roads, surface water bodies, ditches, waterways, point of the release, extent of contamination, areas of excavation and sample collection locations attached.

__X__ Material Safety Data Sheet (MSDS) for released material(s) attached.

__N/A__ Sampling data/analytical results attached.

__N/A__ Receipts/manifests (if any) for disposal of cleanup materials attached.

__N/A__ Contractor reports (if any) attached.

SPILL/RELEASE REPORT – SUPPLEMENTAL INFORMATION
CITY OF PORTLAND STORM SEWER OUTFALL NO. 22 SHEENING EVENT

Background

Tosco/Unocal, Chevron, and GATX/Shell are currently involved in a RI/FS process to remediate the subsurface contamination in the area under a consent order issued by DEQ. Under the consent order Tosco/Unocal and Chevron are responsible for contamination in the vicinity of the storm sewer. There have been past sheening events similar to this one that were determined to come from leaking joints in the sewer pipe allowing groundwater and minor amounts of product to enter the pipe and reach the river. The leaking joints were subsequently grouted up from the inside and later pressure grouted around the outside to minimize the chances of subsequent leakage. This sheening event was associated with a new leaking joint and not the ones that were repaired previously.

2 – Release Information

2.a. Release Date/Time

A sheen was noted by Tosco operators within the boomed area around on the outfall approximately 1000 hrs on 7/24/00. Because the storm sewer outfall drains a large area with multiple potential sources, Tosco personnel spent several hours inspecting the sewer at several manholes in an attempt to determine the source. Although there was no way to definitively determine the source, by mid-afternoon on the 24th it appeared the sheen was coming from subsurface contamination in the proximity of the storm sewer near the river. Tosco then notified the Coast Guard and DEQ that there was a sheen entering the river that could be associated the historical spills at the facility.

Pro Pipe, Gelco and Cowlitz Clean Sweep (CCS) were then contacted to determine availability of personnel or video equipment to inspect the inside of the pipe to confirm if the sheen was originating from a leaking joint. CCS was the only one that could respond quickly and the source of the sheen was confirmed to be a leaking joint on the morning of 7/26/00. DEQ and the Coast Guard were subsequently updated on the situation and Gelco was retained to pressure grout the joint but could not respond until 8/8/00.

2.l. Release Description

The sheen occurred as the result of hydrocarbon product in the vicinity of the storm sewer entering the sewer pipe through a leaking joint and migrating to the Willamette River. The sewer is a 60-inch diameter reinforced concrete pipe with joints approximately every 8 feet. The leaking joint allowed groundwater to enter the pipe creating a depression on the water table and movement of groundwater towards the joint. Product floating on the water table in the vicinity is also drawn to the leaking joint and enters the pipe along with the groundwater.

Based on past studies in the area, the product consists of a highly weathered mixture of diesel fuel/stove oil, gasoline, and minor amounts of other products that resulted from historical leaks and spills from the Tosco/Unocal and Chevron facilities. The product entered the river as a sheen that was largely contained by the booms permanently

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placed around the outfall. The booms are mandated by the consent order and have been in place since the mid- to late-1980s.

4 – Cleanup Information

4.j. Description of Cleanup Activities

After consultation with the Portland BES, a pumping system was installed at the outfall on 7/25/00 to recover water and sheen emanating from the outfall and transferring it to the Tosco Terminal's process water treatment system that discharges to the municipal sanitary sewer system. Sorbent pads, sweeps, and boom were placed within the boomed area to recover as much of the oil as possible and Cowlitz Clean Sweep was called to the site to recover the pads and redeploy additional sorbents. The pumping operation was discontinued on 7/28/00 due to fluctuating river levels periodically rising above the invert of the outfall and burying the pump intake in sand. Due to the warm, sunny weather, however, the sheen volatilized rapidly during the day.

On the morning of 8/8/00, Gelco arrived onsite to pressure grout the leaking joint and stop the infiltration of groundwater and product. The grouting operation was completed by mid-afternoon of that day and successfully repaired the leaking joint. Tosco/Unocal and Chevron are currently evaluating options for creating a permanent solution to the potential for future joints to begin leaking. No other joints were observed to be leaking during the inspection or repair of the sewer.

Tosco/Unocal and Chevron are also planning on removing the upper foot or two of beach sediments in the vicinity of the outfall that were impacted by the sheen event and will also be cleaning the oil stain from the interior of the pipe. KHM Environmental Management has been retained to facilitate the sediment removal and pipe cleaning and is currently in the process of obtaining permits for sediment removal. We are anticipating another 3 to 4 weeks before the permits are issued.

5 – Sampling Information

5.d. Description of Sampling Activities

No samples were taken during this sheen event although beach sediment samples were taken during a previous sheening event which indicated significant contamination was limited to the immediate vicinity of the outfall. The results of the sampling activities were summarized in a report dated February 20, 1999 submitted to Loren Garner of DEQ. No sediment removal was conducted following the sampling as it is likely that much of the contamination detected was related to historical sheening events and was incorporated into the RI/FS process for the Willbridge Facilities consent order. As mentioned above, sediment removal will occur this time once the permitting process is complete.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Conventional Gasoline
Product Code: Multiple
Synonyms: Conventional Premium 92 Octane
Conventional Regular - All Grades - 7.0, 7.8, 9.0, 11.5, 13.5, 15.0
Conventional Regular 88 Octane
Conventional Unleaded 87, 89, 91, 92 Octane
Generic Name: Unleaded Gasoline

Responsible Party: Tosco Corporation
1700 East Putnam Avenue
Old Greenwich, CT 06870

Help Desk 8am - 4pm Pacific Time, Mon-Fri: 1-800-762-0942

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800)424-9300
Others: (703)527-3887 (collect)

California Poison Control System: (800)356-3129

Health Hazards: May be harmful or fatal if swallowed. Aspiration hazard. Possible cancer hazard based on animal data. Vapor harmful. Causes skin irritation. Use ventilation adequate to keep exposure below recommended limits, if any. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards: Extremely flammable liquid and vapor. Vapor can cause flash fire. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

- Physical Form: Liquid
- Appearance: Clear to amber
- Odor: Gasoline

NFPA HAZARD CLASS:
Health: 1 (Slight)
Flammability: 3 (High)
Reactivity: 0 (Least)

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2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% Weight	EXPOSURE GUIDELINE		
		Limits	Agency	Type
Gasoline	88-100	300 ppm	ACGIH	TWA
CAS# None		500 ppm	ACGIH	STEL
Xylenes	1-14	100 ppm	ACGIH	TWA
CAS# 1330-20-7		150 ppm	ACGIH	STEL
		100 ppm	OSHA	TWA
		900 ppm	NIOSH IDLH	
Toluene	1-9	50 ppm	ACGIH	TWA-SKIN
CAS# 108-88-3		200 ppm	OSHA	TWA
		300 ppm	OSHA	CEIL
		500 ppm	NIOSH IDLH	
		500 ppm peak; once per 8-hr shift	OSHA	10 min.
1,2,4-Trimethyl Benzene	1-5	25 ppm (Mixed Isomers)	ACGIH	TWA
CAS# 95-63-6				
Benzene	0.4-5	0.5 ppm	ACGIH	TWA-SKIN
CAS# 71-43-2		2.5 ppm	ACGIH	STEL-SKIN
		1 ppm	OSHA	TWA
		5 ppm	OSHA	STEL
		500 ppm	NIOSH IDLH	
Ethyl Benzene	1-5	100 ppm	ACGIH	TWA
CAS# 100-41-4		125 ppm	ACGIH	STEL
		100 ppm	OSHA	TWA
		800 ppm	NIOSH IDLH	
n-Hexane	0-4	50 ppm	ACGIH	TWA-SKIN
CAS# 110-54-3		500 ppm	OSHA	TWA
		1100 ppm	NIOSH IDLH	
Cyclohexane	0-2	300 ppm	ACGIH	TWA
CAS# 110-82-7		300 ppm	OSHA	TWA
		1300 ppm	NIOSH IDLH	

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Contains benzene. If exposure concentrations exceed the 0.5 ppm

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action level, OSHA requirements for personal protective equipment, exposure monitoring, and training may apply (29CFR1910.1028). Also see Section 4.

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Skin irritant. Contact may cause redness, itching, burning, and skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not acutely toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): Low to moderate degree of toxicity by inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include nausea, vomiting, flushing, transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue), blurred vision, tremors, respiratory failure, unconsciousness, convulsions and death.

Cancer: Possible cancer hazard (see Sections 11 and 14).

Target Organs: Inadequate evidence available for this material. See Section 11 for target-organ toxicity information of individual components, if any.

Developmental: No harm to the fetus was observed in laboratory animal studies.

Other Comments: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as Solvent or Painters' Syndrome). Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal.

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Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and respiratory (asthma-like) disorders.

Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect (see Section 4 - Note to Physicians).

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek medical attention.

Inhalation (Breathing): If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Note To Physicians: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of this material (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous

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appearing external wound. Often these injuries require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury.

Federal regulations (29 CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point: -49°F/-45°C
OSHA Flammability Class: Flammable Liquid
LEL%: 1.4 / UEL%: 7.6
Autoignition Temperature: 833°F/444°C

Unusual Fire & Explosion Hazards: This material is extremely flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT,

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a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Extremely flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate

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fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

Portable Containers:
Static electricity may ignite gasoline vapors when filling portable containers. To avoid static buildup do not use a nozzle lock open device. Use only approved containers for the

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storage of gasoline. Place the container on the ground before filling. Keep the nozzle in contact with the container during filling.

Do not fill any portable container in or on a vehicle or marine craft.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

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Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Flash Point: -49°F / -45°C
Flammable/Explosive Limits (%): LEL: 1.4 / UEL: 7.6
Autoignition Temperature: 833°F / 444°C
Appearance: Clear to amber
Physical State: Liquid
Odor: Gasoline
pH: Not applicable
Vapor Pressure (mm Hg): 350-760 @ 100°F
Vapor Density (air=1): >1
Boiling Point/Range: 80-440°F / 26-227°C
Freezing/Melting Point: No Data
Solubility in Water: Negligible
Specific Gravity: 0.72-0.75 @ 60°F
Percent Volatile: 100 vol.%
Evaporation Rate (nBuAc=1): >1
Bulk Density: 6.17 lbs/gal

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of storage and handling. Extremely flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Incompatible Materials: Contact with strong oxidizing agents such as chlorine, dichromates, or permanganates can cause fire or explosion.

Hazardous Decomposition Products: The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. See Section 11 for additional information on hazards of engine exhaust, if any.

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Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Gasoline (CAS# None)

Carcinogenicity: Two year inhalation studies of wholly vaporized unleaded gasoline produced increased incidences of kidney tumors in male rats and liver tumors in female mice. Follow-up studies suggest that occurrence of the kidney tumors may be linked to alpha-2-u-globulin nephropathy, and most likely unique to the male rat. Epidemiology data collected from a study of more than 18,000 petroleum marketing and distribution workers showed no increased risk of leukemia, multiple myeloma, or kidney cancer from gasoline exposure. Unleaded gasoline has been identified as a possible carcinogen by IARC.

Because solvent extracts of gasoline exhaust particulates caused skin cancer in laboratory animals, IARC has categorized gasoline engine exhaust as a possible human cancer hazard.

Target Organ(s): A two year inhalation study of wholly vaporized unleaded gasoline produced nephropathy in male rats, characterized by the accumulation of alpha-2-u- globulin in epithelial cells of the proximal tubules, and necrosis and hyperplasia of surrounding cells. Follow-up studies have demonstrated that these changes are unique to the male rat. Although prolonged exposure to n-hexane, a component of gasoline, has resulted in adverse male reproductive effects in experimental animal studies, no adverse male reproductive effects were found in studies conducted with gasoline.

Developmental: No evidence of developmental toxicity was found in pregnant laboratory animals (rats and mice) exposed to up to 9,000 ppm vapor of unleaded gasoline via inhalation.

Xylenes (CAS# 1330-20-7)

Target Organ(s): A six week inhalation study with xylene produced hearing loss in rats.

Developmental: Both mixed xylenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences of delayed ossification, skeletal variations and resorptions.

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Toluene (CAS# 108-88-3)

Target Organ(s): Epidemiology studies suggest that chronic occupational overexposure to toluene may damage color vision. Subchronic and chronic inhalation studies with toluene produced kidney and liver damage, hearing loss and central nervous system (brain) damage in laboratory animals. Intentional misuse by deliberate inhalation of high concentrations of toluene has been shown to cause liver, kidney, and central nervous system damage, including hearing loss and visual disturbances.

Developmental: Exposure to toluene during pregnancy has demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased fetal body weight and increased skeletal variations in both inhalation and oral studies.

Benzene (CAS# 71-43-2)

Carcinogenicity: Benzene is an animal carcinogen and is known to produce leukemia (a form of cancer) in humans. Benzene has been identified as a human carcinogen by NTP, IARC and OSHA.

Target Organ(s): Prolonged or repeated exposures to benzene vapors has been linked to bone marrow toxicity which can result in blood disorders such as leukopenia, thrombocytopenia, and aplastic anemia. All of these diseases can be fatal.

Developmental: Exposure to benzene during pregnancy demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased body weight and increased skeletal variations in rodents. Alterations in hematopoeisis have been observed in the fetuses and offspring of pregnant mice.

Mutagenicity: Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells, and DNA damage in mammalian cells in vitro.

Ethyl Benzene (CAS# 100-41-4)

Carcinogenicity: Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has not been listed as a carcinogen by NTP, IARC, or OSHA.

Target Organ(s): In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild

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damage to the kidney (tubular hyperplasia), liver (eosinophilio foci, hypertrophy, necrosis), thyroid (hyperplasia) and pituitary (hyperplasia).

n-Hexane (CAS# 110-54-3)

Target Organ(s): Excessive exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and paresthesias of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone. Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) has resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

12. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

13. TRANSPORT INFORMATION

DOT Proper Shipping Name / Technical Name: Gasoline
Hazard Class or Division: 3
ID #: UN1203

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Packing Group: II

14. REGULATORY INFORMATION

This material contains the following chemicals subject to the reporting requirements of **SARA** 313 and 40 CFR 372:

COMPONENT	CAS NUMBER	WEIGHT %
Xylenes	1330-20-7	1-14
Toluene	108-88-3	1-9
1,2,4-Trimethyl Benzene	95-63-6	1-5
Benzene	71-43-2	0.4-5
Ethyl Benzene	100-41-4	1-5
n-Hexane	110-54-3	0-4
Cyclohexane	110-82-7	0-2

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of **California Proposition 65** (CA Health & Safety Code Section 25249.5):

COMPONENT	EFFECT
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant
Unleaded Gasoline (wholly vaporized)	Cancer

Unleaded gasoline has been identified as a carcinogen by IARC. For carcinogenicity information on individual components, see Section 11.

EPA (CERCLA) Reportable Quantity: --None--

15. DOCUMENTARY INFORMATION

Issue Date: 07/10/00
Previous Issue Date: 03/29/99
Product Code: Multiple
Previous Product Code: Multiple

16. DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information presented in this Material Safety Data Sheet is

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based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: No. 2 Diesel Fuel
Product Code: Multiple
Synonyms: CARB Diesel TF3
CARB Diesel
CARB Diesel 10%
Diesel Fuel Oil
EPA Low Sulfur Diesel Fuel
EPA Low Sulfur Diesel Fuel - Dyed
EPA Off Road High Sulfur Diesel - Dyed
Fuel Oil No. 2 - CAS # 68476-30-2
No. 2 Diesel Fuel Oil
No. 2 Fuel Oil - Non Hiway - Dyed
No. 2 High Sulfur Diesel - Dyed
No. 2 Low Sulfur Diesel - Dyed
No. 2 Low Sulfur Diesel - Undyed

Responsible Party: Tosco Corporation
1700 East Putnam Avenue
Old Greenwich, CT 06870

Help Desk 8am - 4pm Pacific Time, Mon-Fri: 1-800-762-0942

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800)424-9300
Others: (703)527-3887 (collect)

California Poison Control
System: (800)356-3129

Health Hazards: Causes severe skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards: Flammable liquid and vapor. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

▶ Physical Form: Liquid

- Appearance: Straw-colored to dyed red
- Odor: Characteristic petroleum

NFPA HAZARD CLASS: Health: 0 (Least)
Flammability: 2 (Moderate)
Reactivity: 0 (Least)

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% Volume	EXPOSURE GUIDELINE		
		Limits	Agency	Type
Diesel Fuel No. 2 CAS# 68476-34-6	100	100* mg/m3	ACGIH	TWA-SKIN
Naphthalene CAS# 91-20-3	<1	10 ppm	ACGIH	TWA
		15 ppm	ACGIH	STEL
		10 ppm	OSHA	TWA
		250 ppm	NIOSH IDLH	

Tosco Low Sulfur No. 2 Diesel meets the specifications of 40 CFR 60.41 for low sulfur diesel fuel.

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

*Proposed ACGIH (1999)

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Severe skin irritant. Contact may cause redness, itching, burning, and severe skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not acutely toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): No information available. Studies by other exposure routes suggest a low degree of toxicity by

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inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract, nausea, diarrhea and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Cancer: Possible skin cancer hazard (see Sections 11 and 14).

Target Organs: There is limited evidence from animal studies that overexposure may cause injury to the kidney (see Section 11).

Developmental: Inadequate data available for this material.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and kidney disorders.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Immediately remove contaminated shoes, clothing, and constrictive jewelry and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or

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unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point: >125°F/>52°C
OSHA Flammability Class: Combustible liquid
LEL%: 0.3 / UEL%: 10.0
Autoignition Temperature: 500°F/260°C

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

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Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with

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an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn when skin contact is possible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Flash Point: >125°F / >52°C
Flammable/Explosive Limits (%): LEL: 0.3 / UEL: 10.0
Autoignition Temperature: 500°F / 260°C
Appearance: Straw-colored to dyed red
Physical State: Liquid
Odor: Characteristic petroleum
pH: Not applicable
Vapor Pressure (mm Hg): 0.40
Vapor Density (air=1): >3

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Boiling Point/Range: 320-700°F / 160-371°C
Freezing/Melting Point: No Data
Solubility in Water: Negligible
Specific Gravity: 0.81-0.88 @60°F
Percent Volatile: Negligible
Evaporation Rate (nBuAc=1): <1
Viscosity: 32.6-40.0 SUS @100°F
Bulk Density: 7.08 lbs/gal

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of storage and handling. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Incompatible Materials: Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc.

Hazardous Decomposition Products: The use of hydrocarbon fuels in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. ACGIH has included a TLV of 0.05 mg/m3 TWA for diesel exhaust particulate on its 1999 Notice of Intended Changes. See Section 11 for additional information on hazards of engine exhaust.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Diesel Fuel No. 2 (CAS# 68476-34-6)

Carcinogenicity: Chronic dermal application of certain middle distillate streams contained in diesel fuel No. 2 resulted in an increased incidence of skin tumors in mice. This material has not been identified as a carcinogen by NTP, IARC, or OSHA. Diesel exhaust is a probable cancer hazard based on tests with laboratory animals.

Target Organ(s): Limited evidence of renal impairment has been noted from a few case reports involving excessive exposure to

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diesel fuel No. 2.

Naphthalene (CAS# 91-20-3)

Carcinogenicity: Female mice exposed via inhalation to naphthalene developed alveolar adenomas. This effect was not seen in male mice. It has not been identified as a carcinogen by NTP, IARC or OSHA.

12. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

13. TRANSPORT INFORMATION

DOT Proper Shipping Name / Technical Name: Diesel Fuel
Hazard Class or Division: 3
ID #: NA1993
Packing Group: III

14. REGULATORY INFORMATION

This material contains the following chemicals subject to the reporting requirements of **SARA** 313 and 40 CFR 372:

COMPONENT	CAS NUMBER	WEIGHT %
-- None known --		

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Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of **California Proposition 65** (CA Health & Safety Code Section 25249.5):

COMPONENT	EFFECT
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant

Diesel engine exhaust, while not a component of this material, is on the Proposition 65 list of chemicals known to the State of California to cause cancer.

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any. Diesel exhaust is a probable cancer hazard based on tests in laboratory animals. It has been identified as a carcinogen by IARC.

EPA (CERCLA) Reportable Quantity: --None--

15. DOCUMENTARY INFORMATION

Issue Date: 07/10/00
Previous Issue Date: 04/03/00
Product Code: Multiple
Previous Product Code: Multiple

16. DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product

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for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

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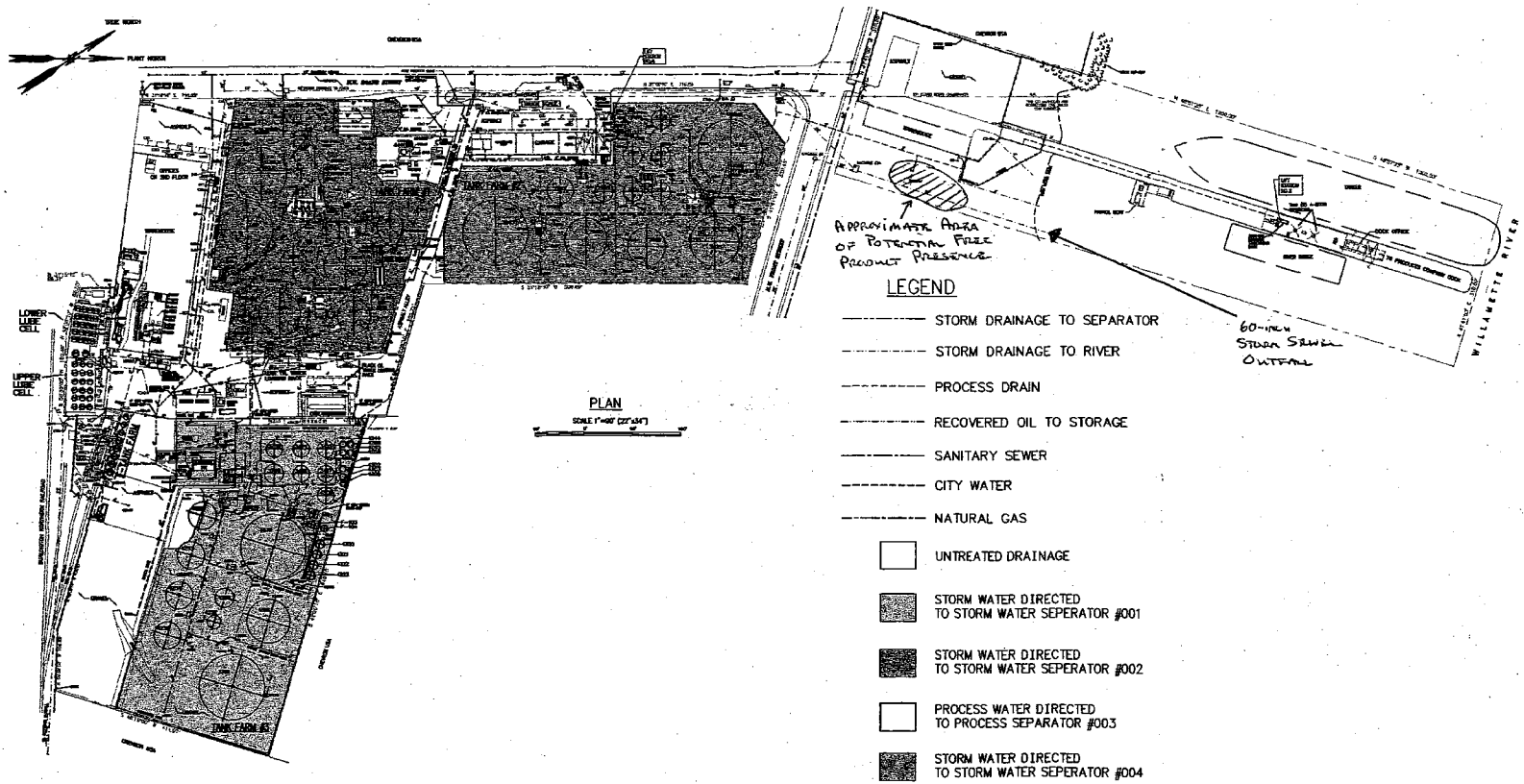

DRAWING NO.	REFERENCE DRAWINGS
0608-C-7020	DOCK FACILITIES GENERAL ARRANGEMENT
0608-C-7021	TANK FARM NO.1 GENERAL ARRANGEMENT
0608-C-7022	TANK FARM NO.2 GENERAL ARRANGEMENT
0608-C-7023	TANK FARM NO.3 GENERAL ARRANGEMENT

REV. NO.	DATE	REVISED	DRAWN BY	CKD. BY
A	03/06/97	FOR REVIEW AND COMMENT	DAB	MK
B	03/26/97	GENERAL UPDATE	DAB	MK
C	07/24/97	REVISE STORM DRAINAGE LEGEND	DAB	MK

TOSCO
Tosco Northwest Company
A Division of Tosco Corporation
5528 NW Doane St.
Portland, Oregon 97210

ALPHA ENGINEERS and CONSTRUCTORS, INC.
12 SW 5th AVE, SUITE 204, PORTLAND, OR. 97209 Tel:(503)227-3317/Fax:(503)227-3344

DRAWN BY	D.ABYNUN
CHKD BY	MK
APPD BY	KJP
SCALE	AS SHOWN
DATE	03/16/97

PORTLAND TERMINAL
PORTLAND, OREGON
DRAINAGE AREAS
SITE PLAN

DRAWING NO.	SHEET	REV.
0608-C-7010	1 OF 1	C

COP0015207

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

MIKE GREEN BURG
OR DEPT. OF ENV. QUALITY
811 SW SIXTH AVE
PORTLAND, OR 97204-1390

4a. Article Number

Z 266 018 295

4b. Service Type

☒ Registered ☐ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

8/17/00

5. Received By: *(Print Name)*

COOK

6. Signature: *(Addressee or Agent)*

X

8. Addressee's Address *(Only if requested and fee is paid)*

PS Form **3811,** December 1994 102595-98-B-0229 Domestic Return Receipt

Thank you for using Return Receipt Service.

COP0015208

UNITED STATES POSTAL SERVICE

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Print your name, address, and ZIP Code in this box •

MARTY CRAMER
TOSCO REFINING CO.
P.O. BOX 76
PORTLAND, OR 97207

COP0015209

Z 266 018 295

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail *(See reverse)*

Sent to Mike Greenberg ORQ	
Street & Number 811 SW 6th Ave	
Post Office, State, & ZIP Code Portland, OR	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995

Sherman, John:

From: Dang, John:
Sent: Wednesday, August 23, 2000 3:32 PM
To: Cramer, Marty:; Sherman, John:
Subject: Excavation of contaminated soil at Portland Terminal

ADC 0922
CORRESPONDENCE

Marty, John:

I discussed the issue of excavating the contaminated soil out from around the tank, pump foundation, and pipe supports with a civil engineer at SPEC Services. His recommendation was to stay about 6-7 feet away from the tank with the digging. Ideally, with the sandy soil, the excavation would be sloped 1.5 to 1 away from the tank to prevent sloughing off of the edges of the excavation. The backfill should be compacted to 90% in 8-12" lifts for the areas inside this zone (if previous excavation is inside this zone) to 2-3 feet minimum outside of this zone.

Regarding the pipe supports and pump pad, he recommended staying 2-3 feet away from them with the excavation. You may also want to consider compacting the soil around the supports/pump pad. The soil most likely won't need to be compacted to 90% but should be tamped down vs. loose.

Marty, when we met a couple weeks ago, you mentioned you only needed to excavate an additional 2 feet. This should be ok if the above guidelines are followed.

John C. Dang
Tosco Refining Company
Distribution West
Central Engineering, Technical Services
Phone: (562) 906-7587
Fax: (562) 906-7581

SPILL/RELEASE REPORT – SUPPLEMENTAL INFORMATION
TOSCO PORTLAND TERMINAL PUMP G-163 KEROSENE RELEASE

2 – Release Information

2.I. Release Description

The release occurred apparently as the result of a sampling valve on the discharge side of Pump G-163 vibrating open and allowing kerosene to be discharged on to the ground. The pump supplies the truck loading rack with kerosene. Consequently, kerosene was discharged primarily when the pump was active although it is assumed some draindown leakage also occurred between pumping periods. The pump is adjacent to Tank 2982 (kerosene tank) in Tank Farm No. 2 along Doane Avenue.

The release was discovered at 1305 hrs on June 15, 2000 by John Sherman, the Terminal Superintendent, during a tour of the tank farm. Truck loading was temporarily terminated while the valve was closed. The valve is actually fitted to a redundant sampling port which is rarely if ever used and, as a result, did not have a cap screwed on the end of the port as is standard practice at the terminal. A kerosene sample was last pulled approximately one week before the release but reportedly from the other sampling port. A Terminal Operator was in the near vicinity of Pump G-163 as late as 1115 hrs that morning and did not see, smell, or hear anything unusual. That would suggest the release occurred over an approximately 1.75 hour period.

The pump area is equipped with a concrete containment pad that drains to the terminal process water system to capture leaks and small spills and did collect a large portion of the release. However, the sampling port faces down and is situated above some piping resulting in some of the flow being deflected by the piping or splashing on to the soil outside containment pad. The kerosene then flowed into an adjacent pipeway where it was contained.

The containment pad itself drains to a lift station at the north end of the tank farm (adjacent to a storm water separator) where a pump operating on a float activated switch transfers collected liquids to the process water separator in Tank Farm No. 1. The lift station pump apparently operated early on in the incident and transferred much of the released kerosene to the process separator before stopping. The lift station then overflowed into the adjacent pipeway where the kerosene was contained. It is uncertain why the lift station pump stopped working but we think the float switch was set for the specific gravity of water and therefore, would not necessarily be activated by the kerosene.

Based on the amount of kerosene in Tank 2982 at 12:00 am that morning, the post-release volume in the tank, and the quantity loaded into trucks during the interim period, the release volume was estimated to be 6,538 gals. Approximately 2,688 gals were recovered primarily from the process separator but also includes 50 to 100 gals. from kerosene pooled on the ground surface. The remaining 3,850 gals. Is unaccounted for but assumed to be spilled on the ground surface.

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4 – Cleanup Information

4.j. Description of Cleanup Activities

Following termination of the release and assessment of the situation, Tosco contracted Cowlitz Clean Sweep (CCS) to respond to the spill. CCS arrived at 1355 hrs on June 15 and began recovering the surface soils in the spill areas at 1555 hrs. Due to the limited access to the areas from above ground piping in the tank farm as well as above ground piping within the pipeway, the soil was recovered using Supersucker vacuum trucks staged at the closest access points and long flexible hoses stretching to the spill area. Soils with the heaviest apparent impact were removed that evening with considerably more soils removed the following day. Between 1 to 2 ft of soil was removed from the impacted areas around the pump and lift station that totaled approximately 60 cu. yds. The recovered soils are temporarily stockpiled in the southern corner of Tank Farm No. 3 and placed on, and covered by, plastic sheeting. The impacted soil will be sent to TPS for treatment by thermal desorption.

Tosco is currently evaluating the practicality of removing the remaining impacted soils. The analytical results for the soil samples taken suggest the kerosene has penetrated to a depth of 12 ft below ground surface or more in the pump area and greater than 5 ft in the lift station/separator area. The issue is complicated by a number of factors including the presence of pre-existing contamination particularly in the lift station area as well as the presence of pipe supports in the pipeways above both spill areas and the pump containment pad, the separator, and product storage tanks whose structural integrity could be jeopardized by the removal of large amounts of soil. We expect the feasibility evaluation to be completed within the next week.

5 – Sampling Information

5.d. Description of Samping Activities

Soil samples were collected the evening of June 15 by CCS using a shovel to dig a hole and hand trowel to collect soil at various depths within one hole for each spill area. The holes were located at the apparent low spot within each area to provide worst case conditions. Due to the sampling method, we could only reach a maximum depth of approximately 7 ft in the pump area and it appeared kerosene penetration stopped at around 3 to 4 ft in the lift station area. The intent of the sampling was to attempt to determine the depth of penetration and to differentiate between the kerosene spill and pre-existing contamination.

The samples (PA-01 through –07 in the pump area and SA-01 through –05 in the lift station/separator area) were submitted to North Creek Analytical in Beaverton on June 16th for NWTPH-Dx (diesel and heavy oil ranges) analyses and fingerprinting on a 24 hr turnaround basis. The draft results were not received until the afternoon of June 20th and indicated that fresh kerosene was the sole or primary contaminant in all samples. Kerosene concentrations decreased sharply at a depth of a few feet in the pump area but generally remained consistent in the 20,000 to 30,000 mg/kg range down to the 7ft sampling depth. The lift station area samples also demonstrated a sharp decline in concentrations from 65,600 mg/kg in the upper few feet to about 60 mg/kg at a depth of

2.5 ft. Copies of the analytical reports are attached and the results are summarized in the attached table. .

In an effort to better delineate the vertical and horizontal extent of impacted soils, GeoEngineers was retained to conduct additional sampling activities. Four hand auger borings were completed in each spill area to varying depths with samples taken every foot or two and field screened for apparent presence of hydrocarbons. Generally, two samples from each boring were selected for laboratory analyses with the first sample representing the heaviest apparent contamination and the second the apparent lower extent of contamination. Due to the presence of pre-existing contamination, the lower extent was, in some cases, determined qualitatively in the field by a change from a sharp kerosene odor to a different or older petroleum odor. The samples were submitted to NCA for both NWTPH-Dx and NWTPH-Gx (gasoline) and BTEX on a 48 hr turnaround basis. The analysis for gasoline and BTEX was done to assist in the differentiation between the kerosene release and pre-existing contamination.

The analytical results for the samples collected by GeoEngineers as well as fingerprinting evaluations done by the laboratory suggest significant concentrations of petroleum hydrocarbons are present at depths up to 12.5 ft (547 mg/kg) in the pump area and 5 ft (3,370 mg/kg in the separator/lift station area. Higher hydrocarbon concentrations were noted at greater depths in the separator/lift station area but the lab indicated it was historic contamination. Copies of the analytical reports are attached and the results are summarized in the attached table.

Kerosene Spill Soil Sample Results
(all results in mg/kg)

Area/ Sample No.	Sample Depth (ft)	Heavy Oil	Diesel/ Kerosene	Gasoline	Xylenes	Ethyl Benzene	Toluene	Benzene	Notes
Pump Area – Initial Samples									
PA-01	0.08	NT	169,000	NT	NT	NT	NT	NT	Matches source oil
PA-02	0.42	NT	34,100	NT	NT	NT	NT	NT	Matches source oil
PA-03	0.83	NT	28,200	NT	NT	NT	NT	NT	Matches source oil
PA-04	1.17	NT	16,500	NT	NT	NT	NT	NT	Matches source oil
PA-05	1.58	NT	24,400	NT	NT	NT	NT	NT	Matches source oil
PA-06	2.5	NT	24,600	NT	NT	NT	NT	NT	Matches source oil
PA-07	4.33	NT	20,300	NT	NT	NT	NT	NT	Matches source oil
Pump Area – Supplemental Samples									
PA-1-4.5	4.5	ND	13,500	4,340	53.2	ND	ND	ND	Matches source oil
PA-1-11.0	11.0	ND	229	167	0.601	ND	ND	ND	No match – weathered
PA-2-4.0	4.0	ND	15,900	4,680	56.4	ND	ND	ND	Matches source oil
PA-2-12.5	12.5	ND	547	308	1.63	0.262	ND	ND	Matches source oil
PA-3-2.5	2.5	ND	1,070	146	1.04	0.17	ND	ND	Matches source oil
PA-4-3.0	3.0	ND	ND	3.90	0.0532	ND	ND	ND	Matches source oil
Separator/Lift Station Area – Initial Samples									
SA-01	0.08	NT	65,600	NT	NT	NT	NT	NT	Matches source oil
SA-02	0.33	NT	27,700	NT	NT	NT	NT	NT	Matches source oil
SA-03	1.08	NT	112,000	NT	NT	NT	NT	NT	Matches source oil
SA-04	1.58	NT	3,840	NT	NT	NT	NT	NT	Matches source oil
SA-05	2.5	NT	58.9	NT	NT	NT	NT	NT	Matches source oil
Separator/Lift Station Area – Supplemental Samples									
SA-1-2.0	2.0	ND	3,560	986	10.3	1.83	ND	ND	Matches source oil
SA-1-7.0	7.0	ND	3,350	6,290	490	70.4	18	ND	No match – contains gasoline
SA-2-2.5	2.5	ND	2,110	856	8.35	1.24	ND	ND	Matches source oil
SA-2-6.0	6.0	ND	346	340	4.72	0.823	ND	ND	No match – contains gasoline
SA-3-1.5	1.5	ND	15,000	3,620	58.6	4.51	2.54	ND	Matches source oil
SA-3-5.0	5.0	ND	3,370	896	9.43	2.22	0.845	ND	Matches source oil
SA-4-1.5	1.5	ND	360	175	1.03	ND	ND	ND	Matches source oil
SA-4-5.5	5.5	ND	143	187	2.78	0.475	ND	ND	No match

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A Member of The IT Group

August 25, 2000
Project B15099.2A

Ms. Jill Kiernan, P.E.
Waste Management and Cleanup
Oregon Department of Environmental Quality
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97204

Re: Second Quarter (April – June 2000) Report
RI/FS Interim Action
Willbridge Bulk Fuel Facilities
Portland, Oregon
Consent Order WMCSR-NWR-94-06

Dear Ms. Kiernan:

IT Corporation is pleased to present the Second Quarter 2000 progress report for the remedial investigation/feasibility study (RI/FS) work being performed at the Chevron, GATX, and Tosco terminals which compose the Willbridge Bulk Fuel Facilities (Willbridge Facility) in Portland, Oregon (Figure 1). This letter presents a summary of the following:

- Second Quarter 2000 sampling, test results, and other data generated between April and June 2000.

This progress report fulfills the requirement of Section 7F of Oregon Department of Environmental Quality (DEQ) Consent Order WMCSR-NWR-94-06.

ACTIVITIES PERFORMED DURING SECOND QUARTER 2000

The following work was performed during April through June 2000:

- Performed quarterly groundwater sampling at the Chevron, GATX, and Tosco terminals. The groundwater sampling procedure is presented as Attachment A.
- Performed monthly separate-phase hydrocarbon (SPH) removal from wells located on the Chevron, GATX, and Tosco terminals.

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SECOND QUARTER 2000 MONITORING ANALYSIS

Interim action monitoring activities performed during the fourth quarter included depth to groundwater and SPH thickness measurements for all wells, and groundwater sampling from selected wells.

Hydrogeological Analysis

Depth to groundwater measurements were performed in May 2000. Measurements were corrected for SPH where encountered. A groundwater table contour map using the May 2000 data is shown on Figure 2. The May 2000 groundwater elevation data are presented in Table 1. Water elevation and SPH recovery data for May 2000 and historic water elevation measurements are presented in Table 5.

During the second quarter (April to June 2000), water table elevations in the vicinity of the river decreased less than 1 foot compared to the first quarter 2000 levels, while water table elevations in upgradient facility wells decreased up to 2 feet.

The direction of groundwater flow, inferred from the elevation contours, is generally toward the river, with a localized groundwater mound in the GATX south tank farm.

Hydrological Analysis

The Willamette River stage (measured at the Morrison Bridge river gauge and converted to City of Portland datum) ranged from a quarterly high of 14.09 feet on April 24, 2000 to a low of 7.10 feet on June 27, 2000. The river stage averaged approximately 9.65 feet between May 22 and 31, 2000, the dates of the second quarter groundwater monitoring event. Precipitation and river stage data are shown on Figure 4.

Groundwater Analytical Results

Pursuant with the January 16, 1997 meeting with Jill Kiernan of the DEQ, groundwater samples were collected from selected facility monitoring wells May 22 and 31, 2000. The samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds by EPA Method 8021B, polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270M-SIM, and total and dissolved RCRA Metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, and silver) by EPA 6000/7000 Series Methods. The groundwater sampling protocol is presented as Attachment A.

The May 2000 BTEX results are presented in Table 2. The May 2000 PAH results are presented in Table 3. The May 2000 metals results are presented in Tables 4A and 4B.

Certified analytical results for the May 2000 sampling event are presented as Attachment A. Samples were not collected from wells containing SPH.

Separate-Phase Hydrocarbon Analysis

Apparent SPH thicknesses were measured at selected wells on a monthly basis (Table 1). A map illustrating the distribution of SPH for May 2000 is shown on Figure 3.

The May 2000 SPH measurements generally indicate SPH thicknesses similar to previous quarter measurements in the riverfront area wells (Table 5). North of Front Avenue, SPH was measured in Tosco wells B-40, U-5A, and EX-39. No SPH was detected in wells at the Chevron tank farm. SPH thicknesses were measured in wells MW-7, MW-19, and MW-24 within the GATX terminal.

SEPARATE-PHASE HYDROCARBON RECOVERY

Monthly manual recovery of SPH at the facility was initiated in early February 1997. Approximately 630.2 gallons of SPH have been removed to date by manual recovery methods. Approximately 26.5 gallons were manually recovered during April through June 2000. If a well has historically had a measurable amount of SPH, it was gauged during the first month of the quarter. SPH was either manually pumped from the well or a hydrocarbon absorbent sock was installed to remove SPH. Although a well may not have contained SPH during the "Willbridge wide" quarterly gauging event, it is possible that the well did contain SPH during one of the other monthly gauging events and a measurable quantity of SPH may have been removed and summarized in Table 1.

Seep and Sheen Monitoring

Containment booms currently encompass the shoreline between the Chevron and Tosco docks, and from the south edge of the Tosco dock to the southern property line (beyond the new Doane Avenue storm sewer outfall). Additionally, secondary containment booms are located inside of the first boom around the new Doane Avenue outfall pipe. Terminal personnel monitor seeps and sheen events; significant sheens are reported to IT for further evaluation.

PROBLEMS ENCOUNTERED DURING SECOND QUARTER 2000

No problems were encountered during the Second Quarter 2000.

ACTIVITIES SCHEDULED FOR THIRD QUARTER 2000 (JULY 2000 – SEPTEMBER 2000)

The following actions are scheduled for Third Quarter 2000:

- Monthly SPH removal from identified wells.
- Gauging of water level elevations and SPH in all facility wells during the second quarter sampling event, scheduled for August 2000.

IT Corporation appreciates the opportunity to be of service. If you have any questions regarding this letter, please call.

Sincerely,

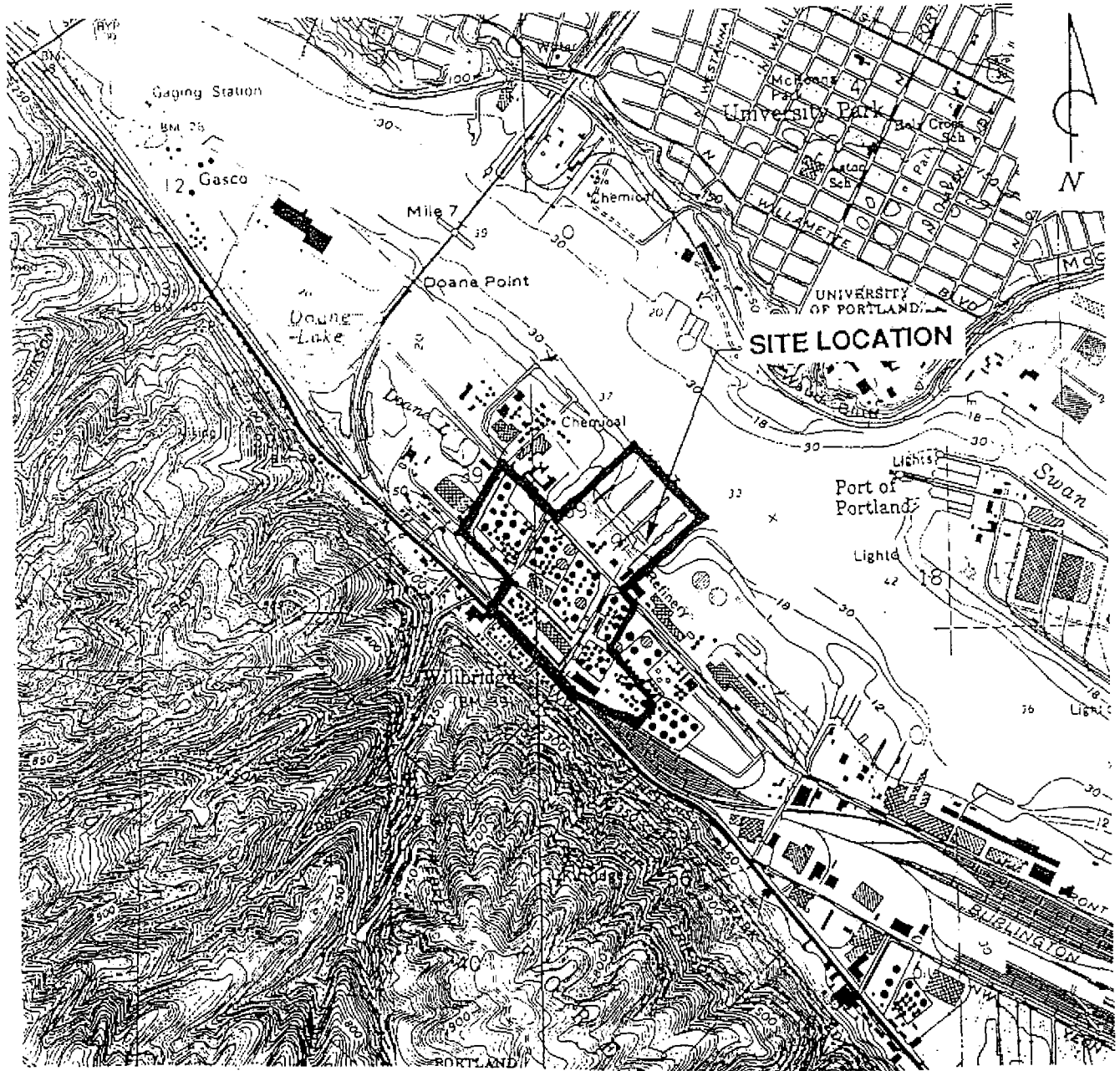
IT CORPORATION

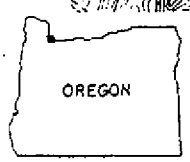
John J. Renda
Staff Geologist

Richard S. Reis, P.E.
Project Director

Attachments: Figure 1- Site Location Map
Figure 2 - Groundwater Elevation Contour Map (May 2000)
Figure 3 - Separate-Phase Hydrocarbon Map (May 2000)
Figure 4 - Precipitation and River Stage Hydrograph (Second Quarter 2000)
Table 1 - Groundwater Elevation Data and SPH Recovery Data (May 2000)
Table 2 - Groundwater Analytical Results (BTEX May 1999 through May 2000)
Table 3 - Groundwater Analytical Results (PAHs May 1999 through May 2000)
Table 4A - Groundwater Analytical Results (Total Metals May 1999 through May 2000)
Table 4B - Groundwater Analytical Results (Dissolved Metals May 1999 through May 2000)
Table 5 - Groundwater Elevation and SPH Recovery Data (March 1995 to June 2000)
Attachment A - Sampling Protocol, Certified Analytical Reports and Chain-of-Custody Documentation

cc: Mr. Eric Conard, GATX Terminals Corporation
Mr. Marty Cramer, Tosco Distribution Company
Mr. Frank Fossati, Shell Oil Products Company
Mr. Gerald O'Regan, Chevron Products Company





QUADRANGLE LOCATION

REFERENCES:

USGS 7.5 MIN TOPOGRAPHIC MAP
TITLED: PORTLAND, OREG-WASH
DATED: 1961 PHOTOREVISED: 1970-1977
TITLED: LINNTON, OREGON
DATED: 1990

SCALE IN FEET

2000 0 2000

the i group	WILLBRIDGE FACILITY Portland, Oregon	FIGURE: 1
	SITE LOCATION MAP	PROJECT: 1115-099.2A

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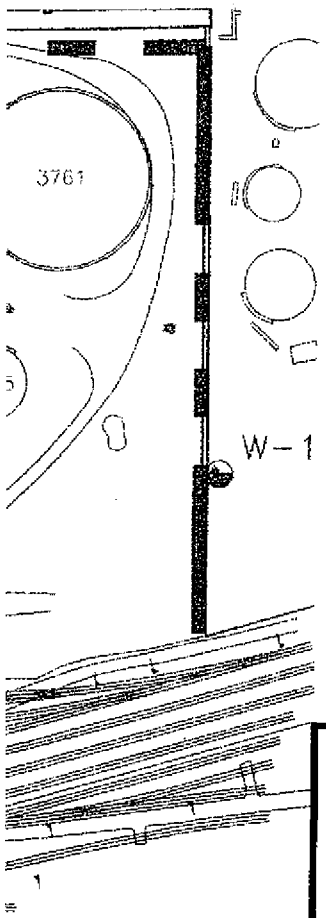

FORMER UST LOCATIONS

SCALE

0 130 260 FEET

IT CORPORATION

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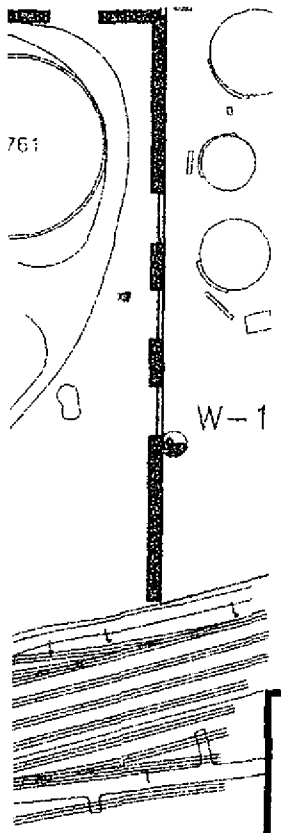
FIGURE 2

SECOND QUARTER 2000 GROUNDWATER ELEVATION CONTOUR MAP MAY, 2000

WILLBRIDGE FACILITY
PORTLAND, OREGON

COP0015221



SCALE

0 130 260 FEET

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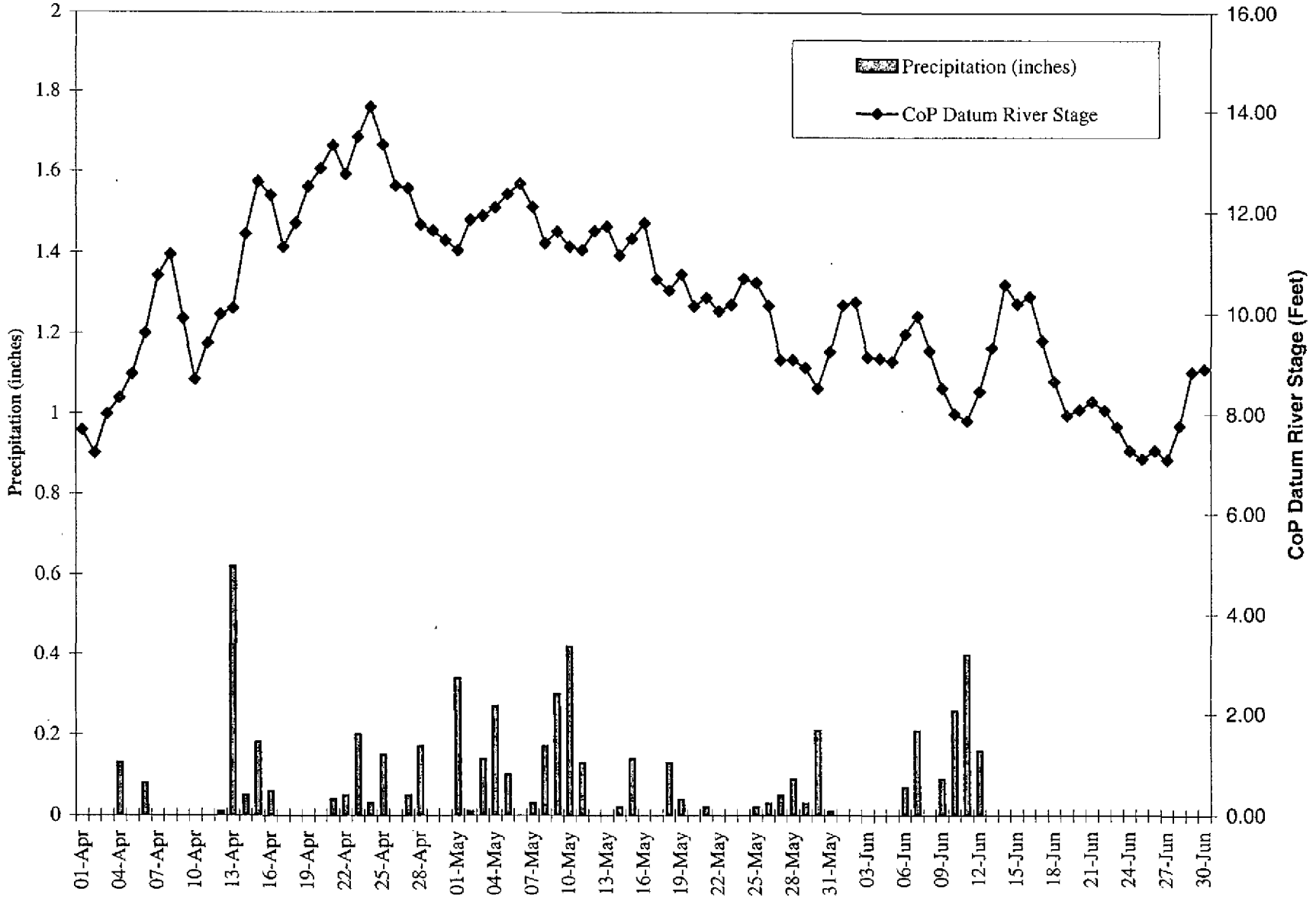
FIGURE 3
SECOND QUARTER 2000
SEPARATE PHASE HYDROCARBON THICKNESS
MAY, 2000

WILLBRIDGE FACILITY
PORTLAND, OREGON

Figure 4

Precipitation and River Stage Hydrograph
Second Quarter 2000
Willbridge Facility



J:/Remed/Jobs/Willbridge/1115099/2a/CLMT2Q00.xls/Chart2Q00

07/26/2000

COP0015223

Table 1
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-7	35.73	05/22/2000	NP		18.60	17.13	
B-9	35.57	05/22/2000	NP		16.90	18.67	
B-10	34.76	05/22/2000	NP		15.67	19.09	
B-11	34.96	05/22/2000	NP		15.41	19.55	
B-12	35.14	05/22/2000	NP		15.85	19.29	
B-13	34.76	05/22/2000	NP		15.86	18.90	
B-14	36.59	05/22/2000	NP		17.69	18.90	
B-15	35.55	05/22/2000	NP		16.88	18.67	
B-19	34.17	05/22/2000	NP		16.34	17.83	
B-20	33.32	05/22/2000	NP		16.93	16.39	
B-21	34.79	05/22/2000	NP		16.57	18.22	
B-24	34.70	05/22/2000	NP		15.83	18.87	
B-26	35.3	05/22/2000	NP		15.96	19.34	
B-28	35.26	05/22/2000	NP		14.34	20.92	
B-29	37.7	05/22/2000	NP		15.43	22.27	
B-30	35.39	05/22/2000	NP		15.85	19.54	
B-32	34.23	05/22/2000	NP		16.84	17.39	
B-33	35.90	05/22/2000	NP		16.41	19.49	
CR-1	22.08	05/22/2000	NP		3.26	18.82	
CR-3	34.32	05/22/2000	NP		16.57	17.75	
CR-4	37.14	05/22/2000	NP		5.63	31.51	
CR-6	35.61	05/22/2000	NP		12.20	23.41	
CR-7	35.57	05/22/2000	NP		10.09	25.48	0.50
CR-8	33.14	05/22/2000	NP		6.23	26.91	

COP0015224

Table 1
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-9	35.72	05/22/2000	NP		3.78	31.94	
CR-10	35.57	05/22/2000	NP		4.95	30.62	
CR-11	34.43	05/22/2000	NP		2.04	32.39	
EX-1	34.15	05/22/2000	NP		15.86	18.29	

COP0015225

Table 1
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-1	35.43	05/22/2000	NP		4.72	30.71	
MW-2	35.77	05/22/2000	NP		6.74	29.03	
MW-3	36.02	05/22/2000	NP		8.04	27.98	
MW-4	36.39	05/22/2000	NP		7.54	28.85	
MW-5	33.52	05/22/2000	NP		6.64	26.88	
MW-6	33.34	05/22/2000	NP		4.70	28.64	
MW-7	34.12	05/22/2000	8.92	1.03	9.95	23.29	11.00
MW-8	33.95	05/22/2000	NP		8.00	25.95	
MW-9	36.53	05/22/2000	NP		10.24	26.29	
MW-10	35.82	05/22/2000	NP		5.59	30.23	
MW-11	36.47	05/22/2000	NP		3.11	33.36	
MW-12	35.95	05/22/2000	NP		6.57	29.38	
MW-13	37.89	05/22/2000	NP		5.03	32.86	
MW-14	36.28	05/22/2000	NP		4.50	31.78	
MW-15	37.5	05/22/2000	NP		5.80	31.70	
MW-16	34.93	05/22/2000	NP		4.98	29.95	
MW-17	36.05	05/22/2000	NP		4.70	31.35	
MW-18	33.76	05/22/2000	NP		2.15	31.61	
MW-19	33.39	05/22/2000	4.59	0.03	4.62	28.74	
MW-20	34.76	05/22/2000	NP		10.23	24.53	
MW-21	34.33	05/22/2000	NP		1.62	32.71	
MW-22	35.65	05/22/2000	NP		4.28	31.37	
MW-23	36.06	05/22/2000	NP		5.63	30.43	
MW-24	35.15	05/22/2000	5.21	0.13	5.34	29.70	2.00

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Table 1
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-25	34.73	05/22/2000	NP		11.66	23.07	
MW-26	34.78	05/22/2000	NP		11.10	23.68	
MW-27	35.69	05/22/2000	NP		4.91	30.78	
MW-28	34.39	05/22/2000	NP		5.44	28.95	1.00
MW-29	35.77	05/22/2000	NP		13.49	22.28	
MW-30	36.39	05/22/2000	NP		5.37	31.02	
MW-31	35.66	05/22/2000	NP		6.66	29.00	
MW-32	37.01	05/22/2000	NP		4.83	32.18	
MW-33		05/22/2000	NP		20.15		
MW-34	39.67	05/22/2000	NP		19.75	19.92	
MW-35	33.39	05/22/2000	NP		3.21	30.18	
MW-36	34.88	05/22/2000	NP		14.62	20.26	
MW-37	34.86	05/22/2000	NP		15.27	19.59	
MW-38	37.5	05/22/2000	NP		6.17	31.33	
MW-39	35.02	05/22/2000	NP		13.56	21.46	
MW-40	33.65	05/22/2000	NP		14.28	19.37	

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Table 1
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Tosco				
B-1	34.68	05/22/2000	NP		17.05	17.63	
B-2	35.35	05/22/2000	NP		17.06	18.29	
B-3	34.81	05/22/2000	NP		18.36	16.45	
B-4	34.70	05/22/2000	NP		17.80	16.90	0.50
B-5	34.83	05/22/2000	NP		16.63	18.20	
B-6	35.49	05/22/2000	NP		16.95	18.54	
B-16	35.82	05/22/2000	NP		17.27	18.55	
B-17	35.61	05/22/2000	NP		17.20	18.41	
B-18	35.49	05/22/2000	NP		18.66	16.83	
B-22	35.83	05/22/2000	NP		18.00	17.83	
B-25	35.78	05/22/2000	NP		17.67	18.11	
B-27	35.74	05/22/2000	NP		17.76	17.98	
B-35	33.56	05/22/2000	NP		16.00	17.56	
B-36	31.02	05/22/2000	NP		14.64	16.38	
B-37	35.83	05/22/2000	NP		19.05	16.78	
B-40	34.7	05/22/2000	17.48	0.80	18.28	15.74	5.50
B-41	34.63	05/22/2000	NP		18.89	15.74	
DW-1	35.93	05/22/2000	NP		18.94	16.99	
DW-2	36.05	05/22/2000	NP		19.03	17.02	
EX-39	33.09	05/22/2000	17.29	0.06	17.35	15.69	5.00
IF-1		05/22/2000	NP		19.59		
IF-2		05/22/2000	NP		19.63		
IT-E	36.07	05/22/2000	NP		19.03	17.04	
IT-W	35.99	05/22/2000	NP		17.75	18.24	

Table 1
Groundwater Elevation and SPH Recovery Data

Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
OF-1		05/22/2000	NP		18.78		
OF-2		05/22/2000	NP		18.92		
P-1	18.24	05/22/2000	NP		6.89	11.35	
P-2	17.85	05/22/2000	NP		4.66	13.19	
RES-N	38.58	05/22/2000	NP		21.01	17.57	
RES-O	36.03	05/22/2000	NP		17.29	18.74	
U-2	35.02	05/22/2000	NP		15.41	19.61	
U-3	35.25	05/22/2000	NP		13.55	21.70	
U-4	34.46	05/22/2000	NP		16.03	18.43	
U-5	34.13	05/22/2000	NP		18.03	16.10	
U-5A	33.77	05/22/2000	6.99	0.01	7.00	26.76	1.00
					Total SPH Recovered this Quarter:		26.50

Notes:
SPH = Separate Phase Hydrocarbon
NP = No product observed this gauging date
NA = Not available
NM = Not measured
* = Groundwater elevation is corrected for the presence of SPH using:
GWE=TOC-(DTW-(SPH thickness x Specific gravity of SPH))
Specific Gravity of SPH set to 0.85 g/cc
** = SPH recovered represents total product recovered for entire quarter

Wells Surveyed Dec. 1998:

B-1	B-12	B-35	U-5
B-3	B-17	B-36	IT-E
B-4	B-18	B-37	MW-27
B-6	B-20	B-40	MW-31
B-8	B-21	B-41	
B-9	B-25	DW-1	
B-10	B-28	P-1	
B-11	B-30	P-2	

COP0015229

Table 2
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
			Chevron			
B-7		08/26/1999	0.285	1.49	0.272	0.44
B-7		11/18/1999	0.559	0.323	0.484	0.291
B-7		02/18/2000	ND	ND	20.1	44.8
B-7		05/23/2000	ND	1.41	0.678	1.22
B-7	Dupl	05/23/2000	ND	1.06	0.691	ND
B-9		11/21/1999	1.02	ND	0.748	ND
B-9		05/23/2000	ND	0.737	0.535	ND
B-10		08/30/1999	4.63	11.9	2.93	14.9
B-10		11/18/1999	6.31	4.37	3.68	8.49
B-10		02/18/2000	3.85	8.78	4.42	14.7
B-10	Dupl	02/18/2000	3.72	7.8	4.1	13.8
B-10		05/23/2000	1.2	4.14	2.93	6.53
B-11		08/27/1999	9.16	0.382	3.7	3.2
B-11		11/18/1999	12.6	2.34	4.65	11.8
B-11		02/18/2000	29.2	4.36	6.14	14.1
B-11		05/23/2000	7.45	1.42	4.95	8.52
B-14		08/26/1999	170	89.8	12.3	17
B-14		11/18/1999	135	60.1	23	21.3
B-14		02/18/2000	119	80	18.1	38
B-14		05/23/2000	125	69.2	15.9	30.7
B-28		08/27/1999	ND	ND	ND	ND
B-28		11/18/1999	ND	0.34	ND	0.708
B-28		02/18/2000	0.754	0.545	0.368	0.986
B-28		05/23/2000	ND	ND	ND	ND
B-30		08/27/1999	55.1	0.385	3.32	4.85
B-30		11/18/1999	16.2	ND	2.06	3.7
B-30		02/18/2000	38.9	2.44	5.29	10.3
B-30		05/23/2000	18.8	0.682	2.53	4.57
CR-8		08/27/1999	ND	ND	ND	ND
CR-8		11/18/1999	3.33	1.95	3.75	2.97
CR-8		02/18/2000	0.314	3.82	0.673	6.55

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Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
				Chevron		
CR-8		05/23/2000	ND	ND	ND	ND
CR-9		08/27/1999	ND	ND	ND	ND
CR-9		11/18/1999	ND	ND	ND	ND
CR-9		02/18/2000	ND	ND	ND	ND
CR-9		05/23/2000	ND	ND	ND	ND
CR-11		08/30/1999	69.8	1.49	1.43	3.39
CR-11		11/18/1999	36.6	2.57	5.32	1.07
CR-11	Dupl	11/18/1999	37.9	2.35	3.9	1.11
CR-11		02/18/2000	81	4.41	4.95	6.17
CR-11		05/23/2000	40.2	2.54	1.95	ND

COP0015231

Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
			GATX		
MW-8	09/02/1999	22.6	52	16.2	97.1
MW-8	12/07/1999	10.5	38.4	3.36	55.9
MW-8	02/16/2000	9.79	7.97	2.51	12.1
MW-8	05/31/2000	16.6	3.05	3.85	10.2
MW-10	09/02/1999	1.22	ND	ND	ND
MW-10	12/07/1999	1.47	0.379	0.562	1.55
MW-10	02/16/2000	6.6	0.996	2.33	3.33
MW-10	05/31/2000	6.78	ND	0.794	1.02
MW-11	09/02/1999	3200	2280	1120	7510
MW-11	12/07/1999	5560	1760	2140	10400
MW-11	02/16/2000	5260	2580	2360	11200
MW-11	05/31/2000	4120	2720	1460	9290
MW-13	09/02/1999	ND	ND	ND	ND
MW-13	12/07/1999	ND	ND	ND	ND
MW-13	02/16/2000	ND	ND	0.392	0.903
MW-13	05/31/2000	ND	ND	ND	ND
MW-15	09/02/1999	ND	ND	ND	ND
MW-15	12/07/1999	ND	ND	ND	ND
MW-15 Dupl	12/07/1999	ND	ND	ND	ND
MW-15	02/17/2000	2.89	0.442	0.493	1.15
MW-15	05/30/2000	ND	ND	ND	ND
MW-21	09/01/1999	ND	ND	ND	ND
MW-21	12/07/1999	0.419	ND	0.789	1.02
MW-21	02/17/2000	ND	0.997	1.21	3.36
MW-21	05/30/2000	ND	ND	ND	ND
MW-22	09/01/1999	1990	4630	1770	10600
MW-22	12/07/1999	1840	3920	1770	10100
MW-22	02/17/2000	2060	4720	2060	13200
MW-22	05/30/2000	2140	4240	1560	9150
MW-23	12/07/1999	53.5	80.1	7.88	67.2
MW-26	09/01/1999	ND	10.6	9.09	6.34

Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
				GATX		
MW-26		12/07/1999	0.68	6.26	1.87	12.4
MW-26		02/17/2000	1.04	11.9	3.11	17.1
MW-26	Dupl	02/17/2000	1.31	18.6	4.01	26.2
MW-26		05/30/2000	ND	7.4	7.11	9.62
MW-28		09/01/1999	1.41	3.21	0.872	2.11
MW-28		02/16/2000	1.29	8.26	3.13	14.7
MW-31		09/01/1999	ND	ND	ND	ND
MW-31		12/07/1999	0.371	0.39	0.639	0.793
MW-31		02/16/2000	0.579	0.481	0.629	1.51
MW-31		05/30/2000	ND	ND	ND	ND
MW-32		09/01/1999	ND	ND	ND	ND
MW-32		12/07/1999	0.312	ND	ND	1.03
MW-32		02/16/2000	ND	0.379	0.608	1.31
MW-32		05/30/2000	ND	ND	ND	ND
MW-33		09/02/1999	ND	ND	ND	ND
MW-33		12/07/1999	ND	ND	ND	ND
MW-33		02/16/2000	ND	0.589	0.718	1.21
MW-33		05/30/2000	ND	ND	ND	ND
MW-36		09/02/1999	0.487	ND	ND	ND
MW-36		12/07/1999	ND	ND	ND	ND
MW-36		02/16/2000	0.322	1.32	2.36	6.29
MW-36		05/31/2000	ND	ND	ND	ND
MW-37		09/02/1999	1640	ND	ND	ND
MW-37		12/07/1999	0.393	ND	ND	ND
MW-37		02/16/2000	1.06	0.492	0.456	1.78
MW-37		05/30/2000	33	ND	0.957	2.1
MW-37	Dupl	05/30/2000	31.4	0.768	0.755	1.72
MW-40		09/02/1999	ND	ND	ND	ND
MW-40		12/07/1999	ND	ND	ND	ND
MW-40		02/16/2000	ND	0.492	0.424	0.759
MW-40		05/30/2000	ND	ND	ND	ND

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Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
			Tosco			
B-4		11/16/1999	35	15.4	8.14	36.1
B-4		05/26/2000	82.3	4	12.7	14.8
B-4	Dupl	05/26/2000	74.8	2.77	10.7	10.3
B-17		11/16/1999	547	10.6	16.3	13.2
B-17		02/17/2000	274	15.4	24	37.7
B-17		05/26/2000	434	49.9	44.4	158
B-18		11/16/1999	0.555	ND	ND	22.7
B-18		02/17/2000	ND	3.46	1.04	6.13
B-18		05/26/2000	ND	ND	ND	ND
B-22		05/26/2000	0.508	0.543	0.522	2.17
B-35		11/16/1999	169	8.25	15.7	18.7
B-35		02/17/2000	31.6	11	13.5	27.4
B-35		05/26/2000	194	12.5	16.3	39.8
B-36		11/16/1999	5.11	ND	0.959	ND
B-36		02/17/2000	0.925	0.762	1.16	3.16
B-36		05/26/2000	ND	0.502	0.82	ND
B-37		11/16/1999	ND	ND	ND	ND
B-37		02/17/2000	0.342	0.795	1.06	1.97
B-37	Dupl	02/17/2000	ND	0.63	0.517	1.18
B-37		05/26/2000	ND	ND	ND	ND
U-2		11/16/1999	ND	ND	ND	ND
U-2		02/17/2000	3.13	3.59	1.93	3.43
U-2		05/26/2000	0.885	ND	1.45	ND
U-3		11/16/1999	0.49	2.6	1.97	4.3
U-3		02/17/2000	0.355	0.952	0.993	3.17
U-3		05/26/2000	1.5	1.01	0.954	2.39
U-4		11/16/1999	20.6	1.61	ND	6.93
U-4		05/26/2000	62.3	ND	ND	ND
U-5		11/16/1999	0.382	0.139	0.398	1.05
U-5		02/17/2000	3.86	0.501	0.654	2.54

Table 2 (cont)
Groundwater Analytical Results - BTEX

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
			Tosco		
U-5	05/26/2000	3.49	ND	ND	ND

Notes:
ppb = Parts per billion
ND = Not detected
BTEX by EPA 8020 Method

COP0015235

Table 3
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a) anthracene (ppb)	Benzo(b) fluoranthene (ppb)	Benzo(k) fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a) pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd) pyrene (ppb)	Benzo-(ghi) perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
Chevron																	
B-7	08/26/1999	3.02	ND	10.4	ND	0.542	ND	7.51	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-7	11/18/1999	ND	ND	19.6	ND	1.74	ND	26.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-7	02/18/2000	5.22	ND	16.3	ND	ND	0.726	17.6	ND	ND	ND	0.528	0.962	ND	ND	ND	ND
B-7	05/23/2000	ND	ND	17.2	ND	ND	ND	13.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-7 Dup	05/23/2000	ND	ND	20.9	ND	ND	ND	15.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-9	11/21/1999	ND	ND	8.74	ND	ND	ND	1.81	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-9	05/23/2000	ND	ND	7.43	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-10	08/30/1999	3.79	ND	13.2	ND	1.39	0.798	17.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-10	11/18/1999	ND	ND	14.8	ND	1.43	ND	11.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-10	02/18/2000	3.58	ND	11.8	ND	ND	0.632	12.9	0.067	ND	ND	0.14	0.513	ND	ND	ND	ND
B-10 Dup	02/18/2000	4.83	ND	15.9	ND	2.9	1.95	23.4	0.547	0.66	ND	0.689	1.85	ND	ND	ND	ND
B-10	05/23/2000	ND	ND	11.9	ND	ND	ND	12.7	ND	ND	ND	0.101	0.818	ND	ND	ND	ND
B-11	08/27/1999	0.882	ND	1.58	ND	0.128	0.1	1.25	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-11	11/18/1999	ND	ND	1.25	ND	ND	ND	0.97	ND	ND	ND	ND	0.121	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
								Chevron									
B-11	02/18/2000	1.75	ND	2.15	ND	ND	ND	1.53	ND	0.547	ND	ND	0.764	ND	ND	ND	ND
B-11	05/23/2000	ND	ND	ND	ND	ND	ND	0.891	ND	ND	ND	ND	0.169	ND	ND	ND	ND
B-14	08/26/1999	1	ND	1.49	5.05	0.222	0.55	1.52	ND	ND	ND	ND	0.63	ND	ND	ND	ND
B-14	11/18/1999	1.4	ND	2.11	12.4	0.179	0.41	1.53	ND	ND	ND	ND	0.48	ND	ND	ND	ND
B-14	02/18/2000	1.08	ND	1.84	7	0.222	0.561	1.9	0.1	ND	ND	0.104	0.582	ND	ND	ND	ND
B-14	05/23/2000	ND	ND	ND	ND	0.185	0.467	1.36	ND	ND	ND	ND	0.621	ND	ND	ND	ND
B-24	11/18/1999	ND	ND	16.3	ND	2.64	2.74	17.6	ND	ND	ND	ND	4.15	ND	ND	ND	ND
B-28	08/27/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-28	11/18/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-28	02/18/2000	ND	ND	ND	0.109	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-28	05/23/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-30	08/27/1999	ND	ND	ND	ND	ND	0.0589	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-30	11/18/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-30	02/18/2000	0.121	ND	0.177	ND	ND	0.113	0.175	ND	ND	ND	ND	0.202	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
								Chevron									
B-30	05/23/2000	ND	ND	ND	ND	ND	ND	0.105	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-4	11/18/1999	0.488	ND	0.494	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-8	08/27/1999	ND	0.176	ND	ND	0.0711	0.254	ND	0.0617	0.245	0.129	0.21	0.379	0.385	ND	0.324	0.515
CR-8	11/18/1999	ND	ND	0.0887	ND	0.238	0.0613	ND	ND	ND	ND	0.0575	0.29	ND	ND	ND	ND
CR-8	02/18/2000	ND	0.749	ND	ND	0.264	1.34	0.125	0.981	1.6	1.3	1.28	1.97	2.47	0.342	1.96	2.92
CR-8	05/23/2000	ND	ND	ND	ND	0.233	0.27	ND	0.232	0.46	0.331	0.326	0.458	0.61	ND	0.613	0.981
CR-9	08/27/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-9	11/18/1999	ND	ND	ND	ND	0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0528
CR-9	02/18/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-9	05/23/2000	ND	ND	ND	ND	0.115	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-11	08/30/1999	2.75	ND	5.42	ND	0.534	ND	4.28	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-11	11/18/1999	ND	ND	0.524	ND	0.0733	ND	0.167	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-11 Dup	11/18/1999	ND	ND	ND	ND	0.0896	ND	0.202	ND	ND	ND	ND	ND	ND	ND	ND	ND
CR-11	02/18/2000	0.333	ND	0.982	ND	ND	ND	0.327	ND	ND	ND	ND	ND	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
Chevron																	
CR-11	05/23/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a) anthracene (ppb)	Benzo(b) fluoranthene (ppb)	Benzo(k) fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a) pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd) pyrene (ppb)	Benzo-(ghi) perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
								GATX									
MW-8	09/02/1999	2.29	ND	0.981	ND	ND	0.991	1.08	ND	ND	ND	ND	0.623	ND	ND	ND	ND
MW-8	12/07/1999	0.0528	ND	ND	3.55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-8	02/16/2000	ND	ND	ND	1.66	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-8	05/31/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	09/02/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.115	ND	ND	ND	0.0689
MW-10	12/07/1999	0.0613	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	02/16/2000	0.113	ND	ND	ND	ND	ND	0.0759	ND	ND	ND	ND	0.0845	ND	ND	ND	ND
MW-10	05/31/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	09/02/1999	ND	ND	ND	393	0.0755	ND	0.184	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	12/07/1999	ND	ND	ND	697	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	02/16/2000	ND	ND	0.66	410	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	05/31/2000	ND	ND	ND	555	0.159	ND	0.256	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	09/02/1999	ND	ND	ND	0.201	0.0509	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	12/07/1999	ND	ND	ND	ND	0.0689	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a) anthracene (ppb)	Benzo(b) fluoranthene (ppb)	Benzo(k) fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a) pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd) pyrene (ppb)	Benzo-(ghi) perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
								GATX									
MW-13	02/16/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	05/31/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	09/02/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	12/07/1999	ND	ND	ND	0.0604	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15 Dup	12/07/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	02/17/2000	0.118	ND	0.0743	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	05/30/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-21	09/01/1999	ND	ND	ND	ND	0.0619	0.0543	ND	ND	ND	ND	0.0552	0.0505	ND	ND	ND	0.0514
MW-21	12/07/1999	ND	ND	ND	0.0651	0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-21	02/17/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-21	05/30/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	09/01/1999	ND	ND	ND	347	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	12/07/1999	ND	ND	ND	306	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	02/17/2000	ND	ND	1.23	356	ND	ND	1.09	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	05/30/2000	ND	ND	ND	345	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
							GATX										
MW-23	12/07/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-26	09/01/1999	ND	ND	0.913	ND	ND	0.825	0.816	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-26	12/07/1999	ND	ND	ND	ND	ND	0.221	ND	ND	ND	ND	ND	0.084	ND	ND	ND	ND
MW-26	02/17/2000	2.05	ND	1.7	2.69	ND	1.19	2.27	ND	ND	ND	ND	1.05	ND	ND	ND	ND
MW-26 Dup	02/17/2000	1.78	ND	1.43	2.24	ND	0.99	1.74	ND	ND	ND	ND	0.714	ND	ND	ND	ND
MW-26	05/30/2000	ND	ND	1.84	ND	ND	ND	1.84	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-28	09/01/1999	ND	ND	11.8	ND	ND	ND	8.03	0.673	ND	ND	2.08	3.38	ND	ND	ND	ND
MW-28	02/16/2000	2.68	ND	6.69	ND	ND	0.792	8.54	ND	ND	ND	1	2.71	ND	ND	ND	ND
MW-31	09/01/1999	ND	ND	1.31	ND	ND	ND	0.935	ND	ND	ND	0.0757	0.38	ND	ND	ND	ND
MW-31	12/07/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-31	02/16/2000	ND	ND	0.988	ND	ND	ND	0.457	ND	ND	ND	ND	0.0887	ND	ND	ND	ND
MW-31	05/30/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-32	09/01/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
								GATX									
MW-32	12/07/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-32	02/16/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-32	05/30/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-33	09/02/1999	ND	ND	ND	0.0528	ND	ND	ND	ND	ND	ND	ND	0.0528	ND	ND	ND	ND
MW-33	12/07/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-33	02/16/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-33	05/30/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-36	09/02/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.113	ND	ND	ND	ND
MW-36	12/07/1999	0.0519	ND	ND	ND	ND	0.0509	0.0585	ND	ND	ND	ND	0.0547	ND	ND	ND	ND
MW-36	02/16/2000	0.143	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-36	05/31/2000	0.228	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-37	09/02/1999	ND	ND	ND	ND	ND	ND	ND	0.111	0.0775	0.0961	0.154	0.315	0.127	ND	0.0941	0.105
MW-37	12/07/1999	ND	ND	ND	ND	ND	0.0689	ND	ND	ND	ND	ND	0.121	ND	ND	ND	ND
MW-37	02/16/2000	1.56	ND	3.02	ND	0.0862	0.158	0.605	0.0584	0.0564	ND	0.0583	0.214	0.0773	ND	ND	ND
MW-37	05/30/2000	ND	ND	ND	ND	ND	0.126	0.451	ND	ND	ND	ND	0.153	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a)anthracene (ppb)	Benzo(b)fluoranthene (ppb)	Benzo(k)fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a)pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd)pyrene (ppb)	Benzo-(ghi)perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
Tosco																	
B-4	11/16/1999	ND	ND	10.4	ND	1.6	1.42	15.7	ND	ND	ND	ND	1.42	ND	ND	ND	ND
B-4	05/26/2000	13.2	ND	17.3	ND	ND	1.19	28.4	ND	ND	ND	ND	2.24	ND	ND	ND	ND
B-4 Dup	05/26/2000	ND	ND	ND	ND	ND	1.2	20.9	ND	ND	ND	ND	1.72	ND	ND	ND	ND
B-17	11/16/1999	ND	ND	11.9	ND	ND	ND	8.07	ND	ND	ND	ND	0.433	ND	ND	ND	ND
B-17	02/17/2000	2.28	ND	8.42	ND	ND	ND	4.25	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-17	05/26/2000	ND	ND	10.1	ND	ND	ND	5.33	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-18	11/16/1999	ND	ND	ND	ND	ND	ND	2.74	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-18	02/17/2000	1.41	ND	3.39	ND	ND	ND	1.83	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-18	05/26/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-22	05/26/2000	ND	ND	15.4	ND	ND	ND	21.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-35	11/16/1999	ND	ND	50	ND	ND	24.7	91.7	3.87	0.991	0.772	3.56	15.7	0.692	ND	ND	ND
B-35	02/17/2000	11	ND	30	ND	5.15	8.29	35.8	1.19	ND	ND	1.1	4.33	ND	ND	ND	ND
B-35	05/26/2000	ND	ND	22.5	ND	2.61	2.93	20.7	ND	ND	ND	ND	1.73	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a) anthracene (ppb)	Benzo(b) fluoranthene (ppb)	Benzo(k) fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a) pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd) pyrene (ppb)	Benzo-(ghi) perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
							GATX										
MW-37 Dup	05/30/2000	ND	ND	ND	ND	ND	0.121	0.465	ND	ND	ND	ND	0.146	ND	ND	ND	ND
MW-40	09/02/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-40	12/07/1999	0.104	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-40	02/16/2000	0.0972	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-40	05/30/2000	0.124	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a) anthracene (ppb)	Benzo(b) fluoranthene (ppb)	Benzo(k) fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a) pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd) pyrene (ppb)	Benzo-(ghi) perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
Tosco																	
B-36	11/16/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-36	02/17/2000	0.251	ND	0.537	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-36	05/26/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-37	11/16/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-37	02/17/2000	0.0689	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0547	ND	ND	ND	ND
B-37 Dup	02/17/2000	0.0683	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0731	ND	ND	ND	ND
B-37	05/26/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-2	11/16/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-2	02/17/2000	0.14	ND	0.224	ND	ND	0.0683	0.104	ND	ND	ND	ND	0.0856	ND	ND	ND	ND
U-2	05/26/2000	0.119	ND	0.239	ND	ND	ND	0.122	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-3	11/16/1999	0.35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-3	02/17/2000	0.142	ND	0.17	ND	ND	ND	0.066	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-3	05/26/2000	ND	ND	0.119	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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Table 3 (cont)
Groundwater Analytical Results - Polyaromatic Hydrocarbons by EPA 8270B (mod.)

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Acenaphthene (ppb)	Acenaphthylene (ppb)	Fluorene (ppb)	Naphthalene (ppb)	Anthracene (ppb)	Fluoranthene (ppb)	Phenanthrene (ppb)	Benzo(a) anthracene (ppb)	Benzo(b) fluoranthene (ppb)	Benzo(k) fluoranthene (ppb)	Chrysene (ppb)	Pyrene (ppb)	Benzo(a) pyrene (ppb)	Dibenzo-(a,h)anthracene (ppb)	Indeno-(1,2,3,cd) pyrene (ppb)	Benzo-(ghi) perylene (ppb)
Number of Benzene Rings		2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	6
Tosco																	
U-4	11/16/1999	ND	ND	7.92	ND	ND	ND	7.42	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-4	05/26/2000	ND	ND	7.44	ND	ND	ND	7.11	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-5	11/16/1999	ND	ND	2	ND	ND	ND	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
U-5	02/17/2000	1.19	ND	2.63	ND	ND	ND	1.42	ND	ND	ND	ND	0.0764	ND	ND	ND	ND
U-5	05/26/2000	ND	ND	ND	ND	ND	ND	2.04	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
ppb = Parts per billion
ND = Not detected
NS = Not sampled
NS/F = Not sampled, floating product present
PAH by EPA Method 8270 SIM since 1st Quarter 1997
PAH by EPA Method 8310 before 1st Quarter 1997 and for 3rd Quarter 1997

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Table 4a
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Chevron						
B-7		08/26/1999	24.2	144	0.46	21.1	12.5	5.08	0.149	ND	0.21	37.4
B-7		11/18/1999	19.8	68.2	ND	2.2	ND	ND	ND	1.4	ND	2.6
B-7		02/18/2000	28	122	1.07	13.4	6.6	4.25	ND	1.25	ND	23.4
B-7		05/23/2000	26.8	228	ND	44.1	26.4	11.5	ND	1.93	ND	86.3
B-7	Dupl	05/23/2000	27.6	259	ND	51	30.4	13.7	ND	2.11	ND	104
B-9		11/21/1999	22.3	131	1.63	28.1	15.2	8.5	ND	ND	ND	53.8
B-9		05/23/2000	17.7	139	ND	28.6	17.6	8.48	ND	1.23	ND	61.6
B-10		08/30/1999	33.4	228	0.48	42.9	28.6	13.8	ND	ND	0.21	69.2
B-10		11/18/1999	25.1	125	1.2	29.2	12.2	25.2	ND	ND	ND	56.9
B-10	Dupl	11/18/1999							ND			
B-10		02/18/2000	36.7	337	0.84	57.2	35.5	20.2	ND	0.53	0.19	96.5
B-10	Dupl	02/18/2000	39.4	375	1.41	74.5	44.8	27	ND	5.25	0.2	123
B-10		05/23/2000	35.4	211	ND	38.4	26.5	11.5	ND	2.29	ND	63.1
B-11		08/27/1999	26.3	228	1.22	36.3	28.2	15.2	0.299	ND	0.2	67.2
B-11		11/18/1999	21.6	59.1	2.8	3.4	1.3	1.6	ND	ND	ND	9.2
B-11		02/18/2000	38.6	985	4.08	214	130	95.9	ND	3.4	0.47	356

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Chevron						
B-11		05/23/2000	21.9	236	ND	40.7	25.8	17.2	ND	2.33	ND	73.2
B-14		08/26/1999	29.2	102	ND	12.9	8.09	6.15	0.112	ND	0.18	18.3
B-14		11/18/1999	29.7	160	ND	21.3	13.9	13.8	ND	ND	ND	40.3
B-14		02/18/2000	36.7	297	0.6	53	29	40.3	0.095	1.34	0.16	87.4
B-14		05/23/2000	32.7	155	ND	26.4	15.2	18.6	ND	1.68	ND	42.1
B-28		08/27/1999	8.45	190	0.48	28.3	17.3	11.8	0.21	ND	0.23	58
B-28	Dupl	08/27/1999							0.212			
B-28		11/18/1999				139						214
B-28		11/18/1999	9.3	573	5.9		39.5	76.3	0.142	ND	ND	
B-28		02/18/2000	12.2	422	3.68	104	43.7	49.6	0.088	1.56	0.25	165
B-28		05/23/2000	9.56	245	1.44	46.8	25.8	20.5	ND	2.77	ND	91.3
B-30		08/27/1999	16.3	125	15.7	37.4	10.1	33.8	1.79	ND	0.26	104
B-30		11/18/1999				52						211
B-30		11/18/1999	9.3	173	28.7		11.6	77	0.086	ND	ND	
B-30		02/18/2000	18.5	327	35.5	67.1	26.9	48.2	ND	2.65	0.21	238
B-30		05/23/2000	14.1	117	9.78	17.3	9.04	10.8	ND	2.67	ND	52.7

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Chevron						
CR-8		08/27/1999	72.6	863	5.4	180	76.9	84.2	0.538	ND	1.15	456
CR-8		11/18/1999	36.2	126	1.5	18.5	7.7	17.2	ND	ND	ND	61.3
CR-8		02/18/2000	82.7	762	3.45	127	57.8	99.7	ND	3.21	0.37	404
CR-8		05/23/2000	25.6	342	3.12	68.4	22.8	36.5	ND	2.04	ND	155
CR-9		08/27/1999	27	185	0.33	16.6	12.5	8.71	0.18	ND	0.29	45.3
CR-9		11/18/1999	2.4	27	ND	2.1	ND	1.2	ND	ND	ND	11.8
CR-9		02/18/2000	16.7	236	0.26	28.6	19.4	15.6	ND	1.87	0.1	76.9
CR-9		05/23/2000	2.98	41.3	ND	3.81	3	1.88	ND	1.12	ND	8.93
CR-11		08/30/1999	93.4	1190	78.9	226	109	116	1.29	ND	1.45	541
CR-11		11/18/1999	13.4	41.5	5.7	6	1.9	6.1	ND	ND	ND	24.8
CR-11	Dupl	11/18/1999	13.6	42.5	4.9	6	1.9	6.1	ND	ND	ND	24.4
CR-11		02/18/2000	65.6	440	5.59	57.1	25.2	29.6	ND	4.53	0.14	123
CR-11		05/23/2000	49.3	382	6.59	68.5	35.8	39.1	ND	3.21	ND	168

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						GATX						
MW-8		09/02/1999	11.8	263	2.2	21.1	29	28.4	ND	0.86	0.68	125
MW-8		12/07/1999	4.58	25.4	1.31	2.53	2.17	2.33	ND	ND	ND	144
MW-8		02/16/2000	9.74	56.6	0.73	4.76	3.96	5.69	ND	ND	ND	34.4
MW-8		05/31/2000	3.48	22.6	ND	ND	ND	ND	ND	ND	ND	7.88
MW-10		09/02/1999	32.2	656	0.21	84.2	60.7	80.5	0.239	1.7	0.67	236
MW-10		12/07/1999	4.45	69.5	0.14	5.36	2.58	2.77	ND	0.28	ND	11.7
MW-10		02/16/2000	31.1	266	0.27	49.3	25	25.6	ND	0.45	0.24	113
MW-10		05/31/2000	15.8	199	ND	29.2	15.5	18.2	ND	1.79	ND	75.6
MW-11		09/02/1999	102	1420	0.1	237	101	119	ND	3.9	1.5	632
MW-11		12/07/1999	55.5	104	ND	9.61	5.2	49.3	ND	2.2	ND	34.3
MW-11	Dupl	12/07/1999	55.9	102	ND	10.1	4.72	48.5		1.31	ND	33.6
MW-11		02/16/2000	67.7	398	0.18	67.2	34.4	78.6	0.065	1.34	0.15	168
MW-11		05/31/2000	59.5	454	ND	57.7	29.1	70.5	0.201	2.96	ND	153
MW-13		09/02/1999	73	1780	ND	221	131	108	ND	5.35	1.35	589
MW-13		12/07/1999	2.63	62.7	ND	6.5	2.85	3.08	ND	ND	ND	13.4
MW-13		02/16/2000	17	305	0.11	43.8	28.5	23.5	ND	0.72	0.16	130

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						GATX						
MW-13		05/31/2000	11.5	411	ND	40.9	26.4	22.8	ND	2	ND	114
MW-15		09/02/1999	8.5	1020	1.7	121	133	56	ND	3.65	ND	383
MW-15		12/07/1999	0.34	68.7	0.04	4.32	3.5	2.1	ND	ND	ND	65.1
MW-15	Dupl	12/07/1999	0.66	79.2	0.04	5.71	5.76	2.39	ND	ND	ND	40.2
MW-15		02/17/2000	1.7	87.4	0.04	5.46	6.51	2.06	ND	0.34	ND	21.9
MW-15	Dupl	02/17/2000	1.52	87.7	0.08	5.32	6.55	3.4		0.46	ND	21
MW-15		05/30/2000	ND	94.1	ND	5.97	6	3.22	ND	ND	ND	29.8
MW-21		09/01/1999	6.5	359	13.5	27.5	23.9	27.8	ND	0.51	0.29	180
MW-21	Dupl	09/01/1999	6.6	360	13.5	29.9	24.8	28.3		0.4	0.26	190
MW-21		12/07/1999	1.15	101	2.09	3.82	1.01	5.63	ND	ND	ND	23
MW-21		02/17/2000	4	188	2.19	9.1	7.77	9.88	ND	0.71	ND	45.9
MW-21		05/30/2000	5.99	335	7.01	24.8	19.6	24.7	ND	1.85	ND	126
MW-22		09/01/1999	90.6	238	0.39	12.1	12.5	22.7	ND	ND	0.31	52
MW-22		12/07/1999	92.1	186	ND	3.96	2.8	11.6	ND	0.93	ND	14.8
MW-22		02/17/2000	92.8	251	0.17	8.34	12.1	39.1	ND	1.21	ND	49.2
MW-22	Dupl	02/17/2000							ND			
MW-22		05/30/2000	94.5	244	ND	9.5	9.7	21.6	ND	2.42	ND	38.8

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						GATX						
MW-23		12/07/1999	3.56	18.8	ND	1.22	0.16	1.69	ND	ND	ND	ND
MW-26		09/01/1999	49.6	169	0.64	14.5	12.7	21.2	ND	ND	0.21	70
MW-26		12/07/1999	34.3	59.6	0.05	1.27	0.47	2.27	ND	ND	ND	1.27
MW-26		02/17/2000	47.4	94.3	0.05	3.68	4.68	3.42	ND	0.6	ND	14.1
MW-26	Dupl	02/17/2000	48.7	90.4	0.5	4.96	4.34	3.12	ND	0.33	ND	42.2
MW-26		05/30/2000	44.3	102	ND	5.01	4.53	4.92	ND	ND	ND	16.2
MW-28		09/01/1999	2.2	42.2	0.59	34.8	3.2	23.6	ND	0.42	0.43	52.5
MW-28		02/16/2000	0.32	8.03	ND	2	0.47	3.87	ND	ND	ND	17.2
MW-31		09/01/1999	19.1	38.1	0.28	8	3.2	3.9	ND	0.45	0.14	24
MW-31		12/07/1999	1.13	8.32	ND	2.19	ND	0.1	ND	ND	ND	ND
MW-31		02/16/2000	5.04	16	ND	2.22	0.42	1.35	ND	ND	ND	2.18
MW-31		05/30/2000	6.64	19	ND	ND	ND	ND	ND	ND	ND	ND
MW-32		09/01/1999	ND	13.8	0.18	1.7	1	0.18	ND	ND	0.14	2.9
MW-32		12/07/1999	ND	5.77	ND	1.22	1.66	ND	ND	ND	ND	ND
MW-32		02/16/2000	0.71	18.9	0.07	3.99	2.97	3.09	ND	ND	ND	6.03

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
					GATX						
MW-32	05/30/2000	1.47	26.8	ND	4.3	1.95	1.59	ND	ND	ND	6.86
MW-33	09/02/1999	58.7	531	0.11	9.7	5.1	3.9	ND	ND	0.16	20.9
MW-33	12/07/1999	0.93	37.6	ND	1.25	0.15	ND	ND	ND	ND	ND
MW-33	02/16/2000	8.42	76.8	0.06	4.23	1.62	3.68	ND	ND	ND	7.46
MW-33	05/30/2000	6.55	111	ND	3.38	1.79	1.54	ND	ND	ND	7.21
MW-36	09/02/1999	37.8	242	0.09	30.9	24.7	17.2	ND	0.39	0.19	59.5
MW-36	12/07/1999	17.9	93.7	ND	10.9	5.62	5.16	ND	ND	ND	20.4
MW-36	02/16/2000	14.6	57.5	0.05	6.14	4.13	3.55	ND	0.22	ND	13.1
MW-36	05/31/2000	14.9	51.2	ND	3.08	1.8	ND	ND	ND	ND	ND
MW-37	09/02/1999	24	196	0.59	33.5	22.3	17	ND	ND	0.18	60.6
MW-37	12/07/1999	16.8	33.8	ND	1.5	0.22	ND	ND	ND	ND	ND
MW-37	02/16/2000	18.4	74.8	0.22	11.8	7.21	4.69	ND	0.32	ND	18.4
MW-37	05/30/2000	19.9	56.7	ND	5.72	3.56	1.8	ND	1.58	ND	11.1
MW-37 Dupl	05/30/2000	18.9	58.6	ND	6.37	4.08	2.05	ND	ND	ND	12.1
MW-40	09/02/1999	45	1260	0.7	231	178	198	0.982	2.1	1.5	533
MW-40	12/07/1999	12.8	73	ND	2.01	ND	ND	ND	ND	ND	ND

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
					GATX						
MW-40	02/16/2000	22.1	185	0.11	28.9	20.2	25.4	ND	0.47	0.12	66.9
MW-40	05/30/2000	25	107	ND	10.7	7.83	8.37	ND	ND	ND	24.5

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Tosco						
B-4		11/16/1999	31.7	75.9	0.04	4.9	1.19	0.9	ND	0.53	ND	7.87
B-4		05/26/2000	35	245	ND	42.5	27.5	14	ND	ND	ND	75
B-4	Dupl	05/26/2000	36.7	259	ND	44.3	28.3	14.7	ND	ND	ND	78.5
B-17		11/16/1999	45.1	208	ND	38.7	20.9	25.5	ND	0.95	0.12	56.2
B-17		02/17/2000	57.9	549	0.36	140	91	67.6	ND	1.52	0.28	215
B-17		05/26/2000	50.9	195	ND	29	19.1	17.1	ND	1.26	ND	48.5
B-18		11/16/1999	9.17	105	ND	7.44	3.62	1.72	ND	ND	ND	18.8
B-18		02/17/2000	22.3	507	0.44	110	79.7	29.3	0.098	1.58	0.22	174
B-18		05/26/2000	22.8	203	ND	31.3	21.1	9.22	ND	ND	ND	55.8
B-22		05/26/2000	25.5	126	ND	18.7	10.5	5.61	ND	ND	ND	38.5
B-35		11/16/1999	39	267	0.14	47.3	34.7	37.6	ND	0.42	0.11	129
B-35		02/17/2000	60.2	480	0.62	122	89.3	82.8	ND	1.64	0.21	311
B-35		05/26/2000	10.2	116	ND	11.4	7.86	2.64	ND	1.3	ND	23.3
B-36		11/16/1999	4.22	46.8	0.35	3.78	1.52	1.83	ND	10.3	0.13	10
B-36	Dupl	11/16/1999							ND			

Thursday, July 20, 2000

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Tosco						
B-36		02/17/2000	10.5	168	0.21	30.6	22.2	7.79	ND	0.64	ND	55.1
B-36		05/26/2000	10.5	120	ND	12	8.19	2.51	ND	ND	ND	25
B-37		11/16/1999	592	41.9	0.04	1.88	0.46	0.24	ND	1.5	ND	2.58
B-37		02/17/2000	369	152	0.33	29.7	15.9	7.05	ND	1.59	ND	54.4
B-37	Dupl	02/17/2000	327	34.4	0.04	1.45	0.66	2.36	ND	0.25	ND	1.59
B-37		05/26/2000	418	92	ND	13.1	5.26	2.34	ND	ND	ND	21.5
U-2		11/16/1999	17.4	35.1	0.06	4.96	1.19	1.22	ND	0.35	ND	13
U-2		02/17/2000	18.6	63.2	0.23	11.6	3.63	4.99	ND	0.34	ND	24.1
U-2		05/26/2000	11	50.3	ND	5.37	1.37	1.45	ND	ND	ND	10.9
U-3		11/16/1999	41.8	99	0.09	4.45	3.75	8.35	ND	1.33	ND	24.2
U-3		02/17/2000	42.1	194	0.23	17.1	24.1	22.5	ND	1.02	ND	268
U-3		05/26/2000	40	171	ND	11.6	14.9	18.2	ND	1.45	ND	139
U-4		11/16/1999	19.3	114	0.13	10.8	3.93	4.02	ND	1.26	ND	21.3
U-4		05/26/2000	18.8	101	ND	7.49	3.67	2.68	ND	ND	ND	14.9
U-5		11/16/1999	10.1	177	2.14	62.8	15.3	29.8	ND	0.43	ND	4100

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Table 4a (cont)
Groundwater Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
					Tosco						
U-5	02/17/2000	12.7	164	0.94	45.6	17.5	18.9	ND	0.95	ND	933
U-5	*05/26/2000*	10.4	74.8	ND	9.12	2.25	3.7	ND	ND	ND	286

Notes:
ppb = Parts per billion
ND = Not detected
NS = Not sampled
Blank Spaces = Not analyzed
Metals by EPA 6000/7000 Series Methods

COP0015258

Table 4b
Groundwater Analytical Results - Dissolved Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Chevron						
B-14		08/26/1999	3.52	9.23	0.22	1.15	0.99	0.96	ND	1.04	0.26	2.6
B-14	Dupl	08/26/1999	3	8.21	0.03	1.97	0.63	0.92	ND	0.97	0.15	2.36
B-14		11/18/1999	3.11	15.6	0.01	0.95	0.17	1.6	ND	ND	0.01	2.58
B-14	Dupl	11/18/1999	3.32	15.6	0.01	0.93	0.14	1.2		ND	0.02	2.1
B-14		02/18/2000	29.2	59.6	0.08	27.7	0.38	1.6	ND	1.18	0.02	8.19
B-14		05/23/2000	28.9	58.8	ND	39.3	ND	1.98	ND	ND	ND	16.2
B-30		08/27/1999	5.81	20.9	0.77	1.79	2	0.49	ND	2.09	0.39	8.41
B-30		11/18/1999	4.73	30	0.35	1.7	0.49	ND	ND	1.1	0.09	6.81
B-30		02/18/2000	13.8	54.7	0.06	36.3	0.36	1.3	ND	1.44	0.01	7.76
B-30		05/23/2000	12.9	58.8	ND	8.88	ND	ND	ND	ND	ND	5.56
CR-9		08/27/1999	0.32	24.3	0.11	1.17	0.96	0.08	ND	1.52	0.2	6.6
CR-9		11/18/1999	0.09	15.3	0.28	1.81	0.46	ND	ND	0.51	0.52	6
CR-9		02/18/2000	0.34	16.4	0.08	17	0.13	0.49	ND	0.97	ND	3.75
CR-9		05/23/2000	ND	16.2	ND	19.5	ND	ND	ND	ND	ND	5.18

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Table 4b (cont)
Groundwater Analytical Results - Dissolved Metals

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
					GATX						
MW-13	09/02/1999	0.19	21.2	0.09	2.27	1	0.19	ND	ND	0.18	1.98
MW-13	12/07/1999	0.23	24.3	0.03	47.4	0.13	0.4	ND	1.79	ND	12.1
MW-13	02/16/2000	1.69	29	0.03	22	1.54	0.22	ND	8.71	ND	5.65
MW-13	05/31/2000	ND	27.8	ND	35.4	ND	ND	ND	ND	ND	10.4
MW-21	09/01/1999	0.05	59.7	0.06	1.2	0.64	0.04	ND	1.12	0.15	4.61
MW-21	12/07/1999	ND	56	0.35	6.33	ND	ND	ND	0.87	0.01	9.76
MW-21	02/17/2000	1.97	128	0.18	12.4	0.34	0.27	ND	0.65	ND	9.31
MW-21	05/30/2000	2.47	147	ND	ND	ND	ND	ND	ND	ND	7.75
MW-33	09/02/1999	0.36	26.6	0.04	1.55	0.73	0.09	ND	1.2	0.32	4.06
MW-33	12/07/1999	0.24	31.4	ND	12.1	0.1	0.03	ND	0.33	0.01	5.38
MW-33	02/16/2000	3.42	27.4	0.31	34.1	1.46	0.25	ND	1.81	ND	6.9
MW-33	05/30/2000	3.13	34.6	ND	12.8	ND	ND	ND	ND	ND	5.21

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Table 4b (cont)
Groundwater Analytical Results - Dissolved Metals

Willbridge Terminal
Portland, Oregon

Sample Identification		Date Sampled	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Copper (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
						Tosco						
B-17		11/16/1999	4.5	33.9	ND	1.4	ND	2.3	ND		ND	2.4
B-17		02/17/2000	46.6	86.5	ND	27.6	0.38	1.94	ND	0.62	0.01	7.82
B-17		05/26/2000	49	86.1	ND	8.89	ND	1.75	ND	1.59	ND	ND
U-3		11/16/1999	1.9	26.8	ND	2.2	ND	ND	ND		ND	8.8
U-3		02/17/2000	31	93.1	ND	19.7	0.45	1.04	ND	4.54	ND	102
U-3	Dupl	02/17/2000							ND			
U-3		05/26/2000	30.8	90	ND	21	ND	ND	ND	1.1	ND	18.6

Notes:
ppb = Parts per billion
ND = Not detected
NS = Not sampled
Blank Spaces = Not analyzed
Metals by EPA 6000/7000 Series Methods

COP0015261

Table 5
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-7	33.96	03/24/1995	18.07	0.00	18.07	15.89	NA
		04/24/1995	18.61	0.00	18.61	15.35	NA
		05/22/1995	18.56	0.00	18.56	15.40	NA
		06/19/1995	18.77	0.00	18.77	15.19	NA
		07/24/1995	19.74	0.00	19.74	14.22	NA
		08/28/1995	20.03	0.00	20.03	13.93	NA
		09/25/1995	19.79	0.01	19.80	14.15	NA
		10/23/1995	19.56	0.01	19.57	14.38	NA
		11/27/1995	18.61	0.00	18.61	15.35	NA
		12/29/1995	17.74	0.00	17.74	16.22	NA
		01/22/1996	15.82	0.00	15.82	18.14	NA
		02/26/1996	14.09	0.04	14.13	19.80	NA
		03/25/1996	17.38	0.01	17.39	16.56	NA
		04/22/1996	17.07	0.01	17.08	16.87	NA
		05/28/1996	16.46	0.00	16.46	17.50	NA
		06/24/1996	17.96	0.00	17.96	16.00	NA
		07/22/1996	18.79	0.00	18.79	15.17	NA
		08/26/1996	19.18	0.00	19.18	14.78	NA
		09/23/1996	19.22	0.00	19.22	14.74	NA
		10/28/1996	19.10	0.00	19.10	14.86	NA
		11/25/1996	17.95	0.00	17.95	16.01	NA
		01/29/1997	NP		17.24	16.72	--
		04/21/1997	NP		17.45	16.51	--
		07/28/1997	18.60	0.10	18.70	15.18	1.0
		10/15/1997	NP		18.96	15.00	--
		01/19/1998	NP		17.85	16.11	--
		04/20/1998	NP		18.69	15.27	--
		07/21/1998	19.07	0.01	19.08	14.87	0.1
		11/18/1998	NP		19.39	14.57	--
		02/25/1999	16.81	0.01	16.82	17.13	
		05/18/1999	NP		18.08	15.88	0.1
	35.73	08/18/1999	NP		19.15	16.58	
		11/09/1999	NP		19.44	16.29	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-7	35.73	02/14/2000	NP		18.33	17.40	
		05/22/2000	NP		18.60	17.13	
Summary for Well B-7 (35 detail records)					**SPH Recovered to Date:**		**1.20**
B-8	35.90	01/29/1997	NP		15.99	19.91	--
		04/21/1997	NP		16.67	19.23	--
		07/28/1997	NP		17.30	18.60	--
		10/15/1997	NP		17.73	18.17	--
		01/19/1998	NP		16.67	19.23	--
		04/20/1998	NP		17.30	18.60	--
		07/21/1998	NP		17.85	18.05	--
	34.14	11/18/1998	NP		18.25	15.89	--
		02/25/1999	NP		15.94	18.20	
		05/18/1999	NP		16.95	17.19	
		08/18/1999	NP		17.87	16.27	
		11/09/1999	NP		18.27	15.87	
		02/14/2000	NP		17.00	17.14	
Summary for Well B-8 (13 detail records)					**SPH Recovered to Date:**		
B-9	33.95	03/24/1995	NA		16.01	17.94	NA
		04/24/1995	NA		16.42	17.53	NA
		05/22/1995	NA		16.54	17.41	NA
		06/19/1995	NA		16.59	17.36	NA
		07/24/1995	NA		17.45	16.50	NA
		08/28/1995	NA		17.85	16.10	NA
		09/25/1995	NA		17.85	16.10	NA
		10/23/1995	NA		17.45	16.50	NA
		11/27/1995	NA		16.51	17.44	NA
		12/29/1995	NA		15.86	18.09	NA
		01/22/1996	NA		15.31	18.64	NA
		01/29/1996	NP		15.31	18.64	--
		02/26/1996	NA		13.20	20.75	NA
		03/25/1996	NA		15.49	18.46	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-9	33.95	04/22/1996	NA		15.20	18.75	NA
		05/28/1996	NA		15.47	18.48	NA
		06/24/1996	NA		16.09	17.86	NA
		07/22/1996	NA		16.61	17.34	NA
		08/26/1996	NA		17.26	16.69	NA
		09/23/1996	NA		17.14	16.81	NA
		10/28/1996	NA		17.21	16.74	NA
		11/25/1996	NA		16.35	17.60	NA
		01/29/1997	NP		15.31	18.64	--
		04/21/1997	NP		15.82	18.13	--
		07/28/1997	NP		16.60	17.35	--
		10/15/1997	NP		17.21	16.74	--
		01/19/1998	NP		16.11	17.84	--
		04/20/1998	NP		16.70	17.25	--
		07/21/1998	NP		17.14	16.81	--
	33.90	11/18/1998	NP		17.65	16.25	--
		02/25/1999	NP		15.23	18.67	
	33.9	05/20/1999	NP		16.29	17.61	
	35.57	08/18/1999	NP		17.23	18.34	
		11/09/1999	NP		17.57	18.00	
		02/14/2000	16.20	0.09	16.29	19.20	
		05/22/2000	NP		16.90	18.67	
Summary for Well B-9 (36 detail records)					**SPH Recovered to Date:**		
B-10	34.74	03/24/1995	15.08	0.00	15.08	19.66	NA
		04/24/1995	15.41	0.00	15.41	19.33	NA
		05/22/1995	15.68	0.00	15.68	19.06	NA
		06/19/1995	15.96	0.00	15.96	18.78	NA
		07/24/1995	16.26	0.00	16.26	18.48	NA
		08/28/1995	16.26	0.32	16.58	17.89	NA
		09/25/1995	16.84	0.00	16.84	17.90	NA
		10/23/1995	16.70	0.00	16.70	18.04	NA
		11/27/1995	15.99	0.00	15.99	18.75	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-10	34.74	12/29/1995	15.01	0.00	15.01	19.73	NA
		01/22/1996	14.67	0.00	14.67	20.07	NA
		02/26/1996	12.18	0.00	12.18	22.56	NA
		03/25/1996	13.82	0.00	13.82	20.92	NA
		04/22/1996	14.66	0.00	14.66	20.08	NA
		05/28/1996	14.59	0.00	14.59	20.15	NA
		06/24/1996	15.03	0.00	15.03	19.71	NA
		07/22/1996	15.64	0.00	15.64	19.10	NA
		08/26/1996	16.12	0.00	16.12	18.62	NA
		09/23/1996	16.21	0.00	16.21	18.53	NA
		10/28/1996	16.18	0.00	16.18	18.56	NA
		11/25/1996	15.35	0.00	15.35	19.39	NA
		01/29/1997	NP		13.80	20.94	--
		04/21/1997	NP		14.85	19.89	--
		07/28/1997	NP		15.43	19.31	--
		10/15/1997	NP		16.12	18.62	--
		01/19/1998	NP		15.07	19.67	--
		04/20/1998	NP		15.38	19.36	--
		07/21/1998	NP		16.04	18.70	--
	34.76	11/18/1998	NP		17.59	17.17	--
		02/25/1999	NP		14.94	19.82	
		05/20/1999	NP		15.14	19.62	0.1
		08/18/1999	NP		16.33	18.43	
		11/09/1999	NP		16.55	18.21	
		02/14/2000	NP		15.10	19.66	
		05/22/2000	NP		15.67	19.09	
Summary for Well B-10 (35 detail records)					SPH Recovered to Date:		0.10
B-11	34.95	03/24/1995	NA		15.22	19.73	NA
		07/24/1995	NA		16.08	18.87	NA
		10/23/1995	NA		16.64	18.31	NA
		01/22/1996	NA		15.73	19.22	NA
		04/22/1996	NA		14.44	20.51	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-11	34.95	05/28/1996	NA		14.46	20.49	NA
		07/22/1996	NA		15.40	19.55	NA
		08/26/1996	NA		15.91	19.04	NA
		09/23/1996	NA		16.08	18.87	NA
		10/28/1996	NA		16.14	18.81	NA
		11/25/1996	NA		15.53	19.42	NA
		01/29/1997	NP		15.65	19.30	--
		04/21/1997	NP		14.67	20.28	--
		07/28/1997	NP		15.33	19.62	--
		10/15/1997	NP		16.05	18.90	--
		01/19/1998	NP		15.15	19.80	--
		04/20/1998	NP		15.16	19.79	--
		07/21/1998	NP		15.80	19.15	--
	34.96	11/18/1998	NP		16.56	18.40	--
		02/25/1999	NP		13.81	21.15	
		05/20/1999	NP		14.95	20.01	
		08/18/1999	NP		15.97	18.99	
		11/09/1999	NP		16.49	18.47	
		02/14/2000	NP		14.93	20.03	
		05/22/2000	NP		15.41	19.55	
Summary for Well B-11 (25 detail records)					**SPH Recovered to Date:**		
B-12	35.11	08/26/1996	NA		16.37	18.74	NA
		09/23/1996	NA		16.53	18.58	NA
		11/25/1996	NA		16.07	19.04	NA
		01/29/1997	NP		14.18	20.93	--
		04/21/1997	NP		15.20	19.91	--
		10/15/1997	NP		16.53	18.58	--
		01/19/1998	NP		15.70	19.41	--
		04/20/1998	NP		15.68	19.43	--
		07/21/1998	NP		16.28	18.83	--
	35.14	11/18/1998	NP		16.95	18.19	--
		02/25/1999	NP		14.37	20.77	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-12	35.14	05/20/1999	NP		15.41	19.73	
		08/18/1999	NP		16.35	18.79	
		11/09/1999	NP		16.89	18.25	
		02/14/2000	NP		15.38	19.76	
		05/22/2000	NP		15.85	19.29	
Summary for Well B-12 (16 detail records)					SPH Recovered to Date:		
B-13	34.76	08/26/1996	NA		16.36	18.40	NA
		09/23/1996	NA		16.51	18.25	NA
		10/28/1996	NA		16.59	18.17	NA
		11/25/1996	NA		16.14	18.62	NA
		01/29/1997	NP		14.35	20.41	--
		04/21/1997	NP		15.23	19.53	--
		07/28/1997	NP		15.85	18.91	0.00
		10/15/1997	NP		16.50	18.26	--
		01/19/1998	NP		15.80	18.96	--
		04/20/1998	NP		15.72	19.04	--
		07/21/1998	NP		16.22	18.54	--
		11/18/1998	NP		16.89	17.87	--
		02/25/1999	NP		14.54	20.22	
		05/20/1999	NP		15.47	19.29	
		08/18/1999	NP		16.33	18.43	
		11/09/1999	NP		16.86	17.90	
		02/14/2000	NP		15.46	19.30	
		05/22/2000	NP		15.86	18.90	
Summary for Well B-13 (18 detail records)					SPH Recovered to Date:		0.00
B-14	36.59	04/24/1995	NA		17.59	19.00	NA
		07/24/1995	NA		18.35	18.24	NA
		10/23/1995	NA		18.84	17.75	NA
		01/22/1996	NA		17.21	19.38	NA
		04/22/1996	NA		15.80	20.79	NA
		05/28/1996	NA		16.82	19.77	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-14	36.59	07/22/1996	NA		17.70	18.89	NA
		08/26/1996	NA		18.15	18.44	NA
		09/23/1996	NA		18.31	18.28	NA
		10/28/1996	NA		18.40	18.19	NA
		11/25/1996	NA		17.94	18.65	NA
		01/29/1997	NP		16.05	20.54	--
		04/21/1997	NP		17.03	19.56	--
		07/28/1997	NP		17.63	18.96	--
		10/15/1997	NP		18.31	18.28	--
		01/19/1998	NP		17.61	18.98	--
		04/20/1998	NP		17.52	19.07	--
		07/21/1998	NP		18.06	18.53	--
		11/18/1998	NP		18.70	17.89	--
		02/25/1999	NP		16.33	20.26	
		05/20/1999	NP		17.27	19.32	
		08/18/1999	NP		18.17	18.42	
		11/09/1999	NP		18.64	17.95	
		02/14/2000	NP		17.27	19.32	
		05/22/2000	NP		17.69	18.90	
Summary for Well B-14 (25 detail records)						**SPH Recovered to Date:**	
B-15	35.55	08/26/1996	NA		17.32	18.23	NA
		09/23/1996	NA		17.47	18.08	NA
		10/28/1996	NA		17.56	17.99	NA
		11/25/1996	NA		17.08	18.47	NA
		01/29/1997	NP		15.26	20.29	--
		04/21/1997	NP		16.20	19.35	--
		07/28/1997	NP		16.77	18.78	--
		10/15/1997	NP		17.44	18.11	--
		01/19/1998	NP		16.72	18.83	--
		04/20/1998	NP		16.72	18.83	--
		07/21/1998	NP		17.25	18.30	--
		11/18/1998	NP		17.85	17.70	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-15	35.55	02/25/1999	NP		15.52	20.03	
		05/20/1999	NP		16.44	19.11	
		08/18/1999	NP		17.38	18.17	
		11/09/1999	NP		17.79	17.76	
		02/14/2000	NP		16.48	19.07	
		05/22/2000	NP		16.88	18.67	
Summary for Well B-15 (18 detail records)					**SPH Recovered to Date:**		
B-19	34.71	03/24/1995	NA		16.01	18.70	NA
		04/24/1995	NA		16.21	18.50	NA
		05/22/1995	NA		16.45	18.26	NA
		06/19/1995	NA		16.70	18.01	NA
		07/24/1995	NA		17.09	17.62	NA
		08/28/1995	NA		17.37	17.34	NA
		09/25/1995	NA		17.56	17.15	NA
		10/23/1995	NA		17.45	17.26	NA
		11/27/1995	NA		16.86	17.85	NA
		12/29/1995	NA		15.75	18.96	NA
		01/22/1996	NA		15.54	19.17	NA
		02/26/1996	NA		12.95	21.76	NA
		03/25/1996	NA		14.80	19.91	NA
		04/22/1996	NA		15.39	19.32	NA
		05/28/1996	NA		15.31	19.40	NA
		06/24/1996	NA		15.79	18.92	NA
		07/22/1996	NA		16.35	18.36	NA
		08/26/1996	NA		16.84	17.87	NA
		09/23/1996	NA		16.97	17.74	NA
		10/28/1996	NA		17.03	17.68	NA
		11/25/1996	NA		16.43	18.28	NA
		01/29/1997	NP		14.81	19.90	--
		04/21/1997	NP		15.67	19.04	--
		07/28/1997	NP		16.18	18.53	0.00
		10/15/1997	NP		16.90	17.81	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-19	34.71	01/19/1998	NP		16.05	18.66	–
		04/20/1998	NP		16.75	17.96	–
		07/21/1998	NP		16.78	17.93	–
		11/18/1998	NP		17.33	17.38	–
		02/25/1999	NP		14.93	19.78	
	34.17	05/20/1999	NP		15.93	18.24	
		08/18/1999	NP		16.90	17.27	
		11/09/1999	NP		17.24	16.93	
		02/14/2000	NP		15.99	18.18	
		05/22/2000	NP		16.34	17.83	
Summary for Well B-19 (35 detail records)					**SPH Recovered to Date:**		**0.00**
B-20	33.40	03/24/1995	16.55	0.00	16.55	16.85	NA
		04/24/1995	16.93	0.00	16.93	16.47	NA
		05/22/1995	16.96	0.00	16.96	16.44	NA
		06/19/1995	17.20	0.00	17.20	16.20	NA
		07/24/1995	17.95	0.19	18.14	15.10	NA
		08/28/1995	18.30	0.37	18.67	14.42	NA
		09/25/1995	18.26	0.01	18.27	15.12	NA
		10/23/1995	18.04	0.00	18.04	15.36	NA
		11/27/1995	17.11	0.01	17.12	16.27	NA
		12/29/1995	16.17	0.01	16.18	17.21	NA
		01/22/1996	15.20	0.00	15.20	18.20	NA
		02/26/1996	13.55	0.01	13.56	19.83	NA
		03/25/1996	15.99	0.00	15.99	17.41	NA
		04/22/1996	15.88	0.00	15.88	17.52	NA
		05/28/1996	15.59	0.00	15.59	17.81	NA
		06/24/1996	16.29	0.00	16.29	17.11	NA
		07/22/1996	17.13	0.00	17.13	16.27	NA
		08/26/1996	17.62	0.00	17.62	15.78	NA
		09/23/1996	17.59	1.05	18.64	13.87	NA
		10/28/1996	17.50	0.43	17.93	15.10	NA
		11/25/1996	16.57	0.05	16.62	16.74	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-20	33.40	01/29/1997	NP		15.93	17.47	--
		04/21/1997	NP		16.19	17.21	--
		07/28/1997	16.89	0.02	16.91	16.47	1.0
		10/15/1997	17.32	0.07	17.39	15.95	0.8
		01/19/1998	NP		16.31	17.09	--
		04/20/1998	NP		16.68	16.72	0.1
		07/21/1998	NP		17.80	15.60	--
	33.32	11/18/1998	NP		17.86	15.46	--
		02/25/1999	NP		16.69	16.63	
		05/20/1999	NP		16.30	17.02	0.1
		08/18/1999	17.56	0.56	18.12	14.72	0.15
		11/09/1999	17.56	0.60	18.16	14.65	0.15
		02/14/2000	NP		16.62	16.70	
		05/22/2000	NP		16.93	16.39	
Summary for Well B-20 (35 detail records)					SPH Recovered to Date:		2.30
B-21	34.79	03/24/1995	NA		16.23	18.56	NA
		04/24/1995	NA		16.42	18.37	NA
		05/22/1995	NA		16.63	18.16	NA
		06/19/1995	NA		16.83	17.96	NA
		07/24/1995	NA		17.18	17.61	NA
		08/28/1995	NA		17.43	17.36	NA
		09/25/1995	NA		17.58	17.21	NA
		10/23/1995	NA		17.53	17.26	NA
		11/27/1995	NA		17.09	17.70	NA
		12/29/1995	NA		16.07	18.72	NA
		01/22/1996	NA		15.91	18.88	NA
		02/26/1996	NA		13.30	21.49	NA
		03/25/1996	NA		15.08	19.71	NA
		04/22/1996	NA		15.77	19.02	NA
		05/28/1996	NA		15.61	19.18	NA
		06/24/1996	NA		16.01	18.78	NA
		07/22/1996	NA		16.53	18.26	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-21	34.79	08/26/1996	NA		16.95	17.84	NA
		09/23/1996	NA		17.11	17.68	NA
		10/28/1996	NA		17.20	17.59	NA
		11/25/1996	NA		16.71	18.08	NA
		01/29/1997	NP		15.23	19.56	--
		04/21/1997	NP		15.99	18.80	--
		07/28/1997	NP		16.45	18.34	--
		10/15/1997	NP		17.10	17.69	--
		01/19/1998	NP		16.33	18.46	--
		04/20/1998	NP		16.48	18.31	--
		07/21/1998	NP		16.95	17.84	--
		11/18/1998	NP		17.40	17.39	--
		02/25/1999	NP		15.34	19.45	
		05/20/1999	NP		16.25	18.54	
		08/18/1999	NP		17.02	17.77	
		11/09/1999	NP		17.37	17.42	
		02/14/2000	NP		16.22	18.57	
		05/22/2000	NP		16.57	18.22	
Summary for Well B-21 (35 detail records)					SPH Recovered to Date:		
B-24	34.70	03/24/1995	15.87	0.01	15.88	18.81	NA
		04/24/1995	15.96	0.03	15.99	18.68	NA
		05/22/1995	16.17	0.01	16.18	18.51	NA
		06/19/1995	16.39	0.02	16.41	18.27	NA
		07/24/1995	16.56	0.04	16.60	18.07	0.01
		08/28/1995	16.81	0.00	16.81	17.89	NA
		09/25/1995	17.02	0.00	17.02	17.68	0.03
		10/23/1995	17.05	0.00	17.05	17.65	NA
		11/27/1995	16.75	0.00	16.75	17.95	NA
		12/29/1995	15.90	0.00	15.90	18.80	NA
		01/22/1996	15.71	0.00	15.71	18.99	NA
		02/26/1996	13.98	0.00	13.98	20.72	NA
		03/25/1996	14.62	0.00	14.62	20.08	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-24	34.70	04/22/1996	15.28	0.00	15.28	19.42	NA
		05/28/1996	15.25	0.00	15.25	19.45	NA
		06/24/1996	15.57	0.00	15.57	19.13	NA
		07/22/1996	15.95	0.00	15.95	18.75	NA
		08/26/1996	16.35	0.00	16.35	18.35	NA
		09/23/1996	16.51	0.01	16.52	18.17	NA
		10/28/1996	16.54	0.00	16.54	18.16	NA
		01/29/1997	NM		NM		--
		04/21/1997	NP		15.29	19.41	--
		07/28/1997	NP		16.00	18.70	0.00
		10/15/1997	NP		16.66	18.04	--
		01/19/1998	NM		NM		--
		04/20/1998	NP		15.82	18.88	--
		07/21/1998	NP		16.28	18.42	--
		11/18/1998	16.91	0.01	16.92	17.77	--
		02/25/1999	NP		14.89	19.81	
		05/20/1999	NP		15.52	19.18	0.1
		08/18/1999	NP		16.30	18.40	
		11/09/1999	NP		16.81	17.89	
		02/14/2000	15.49	0.01	15.50	19.19	
		05/22/2000	NP		15.83	18.87	
Summary for Well B-24 (34 detail records)					SPH Recovered to Date:		0.14
B-26	37.04	03/12/1995	NP		16.56	20.48	--
	35.3	04/24/1995	NA		15.81	19.49	NA
		07/24/1995	NA		16.69	18.61	NA
		10/23/1995	NA		17.16	18.14	NA
		01/22/1996	NA		15.23	20.07	NA
		04/22/1996	NA		14.85	20.45	NA
		05/28/1996	NA		14.95	20.35	NA
		07/22/1996	NA		16.03	19.27	NA
		08/26/1996	16.52	0.00	16.52	18.78	NA
		09/23/1996	16.63	0.00	16.63	18.67	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-26	35.3	10/28/1996	16.68	0.00	16.68	18.62	NA
		11/25/1996	15.94	0.00	15.94	19.36	NA
	35.30	01/29/1997	NP		14.36	20.94	NA
		04/21/1997	15.28	0.01	15.29	20.00	0.4
		07/24/1997	NP		15.80	19.50	--
		10/15/1997	NP		16.58	18.72	--
		01/19/1998	NP		15.64	19.66	--
		04/20/1998	NP		15.77	19.53	--
		07/21/1998	NP		16.41	18.89	--
		11/18/1998	NP		17.05	18.25	--
		02/25/1999	NP		14.41	20.89	
	35.3	05/20/1999	NP		15.56	19.74	
		08/18/1999	NP		16.56	18.74	
		11/09/1999	NP		17.01	18.29	
		02/14/2000	NP		15.49	19.81	
		05/22/2000	NP		15.96	19.34	
Summary for Well B-26 (26 detail records)					SPH Recovered to Date:		0.40
B-28	35.25	04/24/1995	NA		15.02	20.23	NA
		07/24/1995	NA		16.14	19.11	NA
		10/23/1995	NA		16.40	18.85	NA
		01/22/1996	NA		15.25	20.00	NA
		04/22/1996	NA		14.62	20.63	NA
		05/28/1996	NA		14.68	20.57	NA
		07/22/1996	NA		15.51	19.74	NA
		10/28/1996	NA		15.98	19.27	NA
		01/29/1997	NP		14.36	20.89	NA
		04/21/1997	14.99	0.01	15.00	20.24	0.3
		07/24/1997	NP		15.25	20.00	--
		10/15/1997	NP		16.11	19.14	--
		01/19/1998	NP		15.47	19.78	--
		04/20/1998	NP		15.60	19.65	--
		07/21/1998	NP		16.02	19.23	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-28	35.26	11/16/1998	16.26	0.01	16.27	18.98	--
		02/25/1999	NP		14.32	20.94	
		05/20/1999	NP		13.20	22.06	
		08/18/1999	NP		16.02	19.24	
		11/09/1999	NP		16.25	19.01	
		02/14/2000	NP		15.45	19.81	
		05/22/2000	NP		14.34	20.92	
Summary for Well B-28 (22 detail records)					**SPH Recovered to Date:**		0.30
B-29	37.70	01/29/1997	NL		NL		--
		04/21/1997	NP		14.61	23.09	--
		07/28/1997	NP		15.40	22.30	--
		10/15/1997	NP		16.10	21.60	--
		01/19/1998	NP		15.54	22.16	--
		04/20/1998	NP		15.37	22.33	--
		07/21/1998	NP		15.97	21.73	--
		11/18/1998	NP		16.78	20.92	--
		02/25/1999	NP		14.00	23.70	
	37.7	05/20/1999	NP		14.97	22.73	
		08/18/1999	NP		16.03	21.67	
		11/09/1999	NP		16.58	21.12	
		02/14/2000	NP		15.12	22.58	
		05/22/2000	NP		15.43	22.27	
Summary for Well B-29 (14 detail records)					**SPH Recovered to Date:**		
B-30	35.35	04/24/1995	NA		15.60	19.75	NA
		06/19/1995	NP		15.60	19.75	--
		07/24/1995	NA		15.96	19.39	NA
		10/23/1995	NA		16.51	18.84	NA
		01/22/1996	NA		14.51	20.84	NA
		04/22/1996	NA		14.12	21.23	NA
		05/28/1996	NA		14.68	20.67	NA
		07/22/1996	NA		15.22	20.13	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-30	35.35	10/28/1996	NA		15.94	19.41	NA
		01/29/1997	NP		13.48	21.87	--
		04/21/1997	NP		14.50	20.85	--
		07/28/1997	NP		15.07	20.28	--
		10/15/1997	NP		15.96	19.39	--
		01/19/1998	NP		15.02	20.33	--
		04/20/1998	NP		15.01	20.34	--
		07/21/1998	NP		15.67	19.68	--
	35.39	11/18/1998	NP		16.45	18.94	--
		02/25/1999	NP		13.74	21.65	
		05/20/1999	NP		14.73	20.66	
		08/18/1999	NP		15.88	19.51	
		11/09/1999	NP		16.43	18.96	
		02/14/2000	NP		14.76	20.63	
		05/22/2000	NP		15.85	19.54	
Summary for Well B-30 (23 detail records)					SPH Recovered to Date:		
B-31	33.86	03/24/1995	NA		14.49	19.37	NA
		04/24/1995	NA		15.30	18.56	NA
		05/22/1995	NA		15.98	17.88	NA
		06/19/1995	NA		16.74	17.12	NA
		07/24/1995	NA		16.89	16.97	NA
		08/28/1995	NA		17.15	16.71	NA
		09/25/1995	NA		16.97	16.89	NA
		10/23/1995	16.52	-0.08	16.44	17.49	NA
		11/27/1995	16.63	-3.21	13.42	23.17	NA
		12/29/1995	14.36	0.00	14.36	19.50	NA
		01/22/1996	NA		15.73	18.13	NA
		02/26/1996	NA		12.56	21.30	NA
		03/25/1996	NA		16.06	17.80	NA
		04/22/1996	NA		12.56	21.30	NA
		05/28/1996	NA		14.61	19.25	NA
		06/24/1996	NA		14.04	19.82	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-31	33.86	07/22/1996	NA		15.84	18.02	NA
		08/26/1996	NA		16.71	17.15	NA
		09/23/1996	16.52	-0.05	16.47	17.43	NA
		10/28/1996	NA		15.90	17.96	NA
		11/25/1996	NA		14.47	19.39	NA
		01/29/1997	NP		14.75	19.11	--
		04/21/1997	14.35	0.02	14.37	19.47	0.2
		07/24/1997	NP		15.89	17.97	--
		10/15/1997	NP		16.30	17.56	--
		01/19/1998	NP		14.25	19.61	--
		04/20/1998	NP		16.01	17.85	--
		07/21/1998	NP		16.65	17.21	--
		11/18/1998	NP		15.95	17.91	--
		08/18/1999	NP		16.69	17.17	
		11/09/1999	NP		15.04	18.82	
		02/14/2000	NP		12.81	21.05	
Summary for Well B-31 (32 detail records)					SPH Recovered to Date:		0.20
B-32	34.23	03/24/1995	16.03	0.00	16.03	18.20	NA
		04/24/1995	16.31	0.26	16.57	17.44	NA
		05/22/1995	16.76	0.00	16.76	17.47	NA
		06/19/1995	17.10	0.00	17.10	17.13	NA
		07/24/1995	17.59	0.00	17.59	16.64	NA
		08/28/1995	17.94	0.00	17.94	16.29	NA
		09/25/1995	18.11	0.00	18.11	16.12	NA
		10/23/1995	17.98	0.00	17.98	16.25	NA
		11/27/1995	17.25	0.00	17.25	16.98	NA
		12/29/1995	16.09	0.00	16.09	18.14	NA
		01/22/1996	NA		15.73	18.50	NA
		02/26/1996	NA		12.72	21.51	NA
		03/25/1996	NA		15.45	18.78	NA
		04/22/1996	NA		15.75	18.48	NA
		05/28/1996	NA		15.37	18.86	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-32	34.23	06/24/1996	NA		16.01	18.22	NA
		07/22/1996	NA		16.86	17.37	NA
		08/26/1996	NA		17.37	16.86	NA
		09/23/1996	NA		17.61	16.62	NA
		10/28/1996	NA		17.57	16.66	NA
		11/25/1996	NA		16.61	17.62	NA
		01/29/1997	NP		15.46	18.77	NA
		04/21/1997	NP		15.89	18.34	NA
		07/28/1997	NP		16.66	17.57	--
		10/15/1997	NP		17.37	16.86	--
		01/19/1998	NP		15.84	18.39	--
		04/20/1998	NP		16.81	17.42	--
		07/21/1998	NP		17.33	16.90	--
		11/18/1998	NP		17.66	16.57	--
		02/25/1999	NP		15.62	18.61	
		05/20/1999	NP		16.46	17.77	
		08/18/1999	NP		17.43	16.80	
		11/09/1999	NP		17.88	16.35	
		02/14/2000	NP		16.37	17.86	
		05/22/2000	NP		16.84	17.39	
Summary for Well B-32 (35 detail records)					**SPH Recovered to Date:**		
B-33	35.90	01/29/1997	NP		14.86	21.04	--
		04/21/1997	NP		15.70	20.20	--
		07/28/1997	NP		16.24	19.66	--
		10/15/1997	NP		16.93	18.97	--
		01/19/1998	NP		16.00	19.90	--
		04/20/1998	NP		16.31	19.59	--
		07/21/1998	NP		17.07	18.83	--
		11/18/1998	NP		17.37	18.53	--
		02/25/1999	NP		14.79	21.11	
		05/20/1999	NP		15.98	19.92	
		08/18/1999	NP		16.98	18.92	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
B-33	35.90	11/09/1999	NP		17.33	18.57	
		02/14/2000	15.49	0.05	15.54	20.32	
		05/22/2000	NP		16.41	19.49	
Summary for Well B-33 (14 detail records)					SPH Recovered to Date:		
CR-1	22.08	01/29/1996	NP		1.63	20.45	--
		01/29/1997	NP		1.63	20.45	--
		04/21/1997	NP		2.32	19.76	--
		10/15/1997	NP		3.55	18.53	--
		01/19/1998	NP		2.50	19.58	--
		04/20/1998	NP		3.09	18.99	--
		07/21/1998	NP		3.68	18.40	--
		11/18/1998	NP		3.99	18.09	--
		02/25/1999	NP		1.57	20.51	
		05/20/1999	NP		2.82	19.26	
		08/18/1999	NP		3.85	18.23	
		11/09/1999	NP		3.61	18.47	
		02/14/2000	NP		2.38	19.70	
		05/22/2000	NP		3.26	18.82	
Summary for Well CR-1 (14 detail records)					SPH Recovered to Date:		
CR-3	34.32	04/24/1995	NA		14.09	20.23	NA
		07/24/1995	NA		15.25	19.07	NA
		10/23/1995	NA		15.81	18.51	NA
		01/22/1996	NA		10.42	23.90	NA
		01/29/1996	NP		12.52	21.80	--
		04/22/1996	NA		12.68	21.64	NA
		05/28/1996	NA		13.61	20.71	NA
		07/22/1996	NA		14.62	19.70	NA
		08/26/1996	NA		15.13	19.19	NA
		09/23/1996	NA		15.28	19.04	NA
		10/28/1996	NA		14.79	19.53	NA
		11/25/1996	NA		12.45	21.87	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-3	34.32	01/29/1997	NP		12.52	21.80	--
		04/21/1997	13.39	0.01	13.40	20.91	--
		07/28/1997	NP		14.51	19.81	--
		10/15/1997	NP		15.20	19.12	--
		01/19/1998	NP		11.61	22.71	--
		04/20/1998	NP		14.32	20.00	--
		07/21/1998	NP		14.98	19.34	--
		11/18/1998	NP		15.69	18.63	--
		02/25/1999	NP		10.83	23.49	
		05/20/1999	NP		14.10	20.22	
		08/18/1999	NP		15.15	19.17	
		11/09/1999	NP		15.68	18.64	
		02/14/2000	12.28	0.01	12.29	22.02	
		05/22/2000	NP		16.57	17.75	
Summary for Well CR-3 (26 detail records)					SPH Recovered to Date:		
CR-4	34.93	04/24/1995	NA		5.13	29.80	NA
		07/24/1995	NA		6.90	28.03	NA
		01/22/1996	NA		4.70	30.23	NA
		05/28/1996	NA		4.99	29.94	NA
		07/22/1996	NA		6.48	28.45	NA
		10/28/1996	NA		6.35	28.58	NA
	37.14	01/29/1997	NP		4.99	32.15	--
	34.93	04/21/1997	NP		5.09	29.84	--
	37.14	05/03/1997	NP		6.78	30.36	--
		07/28/1997	NP		6.31	30.83	--
		10/15/1997	NP		5.95	31.19	--
		01/19/1998	NP		4.92	32.22	--
		04/20/1998	NP		7.32	29.82	--
		07/21/1998	NP		6.72	30.42	--
		11/18/1998	NP		5.65	31.49	--
		05/20/1999	NP		5.91	31.23	
		08/16/1999	NP		6.20	30.94	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-4	37.14	11/09/1999	NP		3.55	33.59	
		02/14/2000	NP		5.08	32.06	
		05/22/2000	NP		5.63	31.51	
Summary for Well CR-4 (20 detail records)					SPH Recovered to Date:		
CR-6	35.61	03/24/1995	12.07	0.01	12.08	23.52	NA
		04/24/1995	12.03	0.01	12.04	23.56	NA
		05/22/1995	12.51	0.01	12.52	23.08	NA
		06/19/1995	10.16	0.00	10.16	25.45	NA
		07/24/1995	14.86	0.01	14.87	20.73	0.02
		08/28/1995	14.51	0.01	14.52	21.08	0.022
		09/25/1995	15.46	0.01	15.47	20.13	0.054
		10/23/1995	15.5	0.00	15.5	20.11	NA
		12/29/1995	8.81	0.00	8.81	26.80	NA
		01/22/1996	12.02	0.01	12.03	23.57	0.04
		02/26/1996	10.71	0.00	10.71	24.90	NA
		03/25/1996	11.28	0.00	11.28	24.33	NA
		05/28/1996	11.49	0.00	11.49	24.12	NA
		06/24/1996	11.35	0.00	11.35	24.26	NA
		07/22/1996	12.57	0.01	12.58	23.02	0.01
		08/26/1996	13.03	0.02	13.05	22.54	0.02
		09/23/1996	13.05	0.03	13.08	22.50	NA
		10/28/1996	12.85	0.04	12.89	22.69	NA
		11/25/1996	12.55	0.02	12.57	23.02	NA
		01/29/1997	NP		11.15	24.46	--
		04/21/1997	NP		11.86	23.75	--
		07/28/1997	12.74	0.01	12.75	22.85	1.0
		10/15/1997	12.98	0.03	13.01	22.57	1.0
		01/19/1998	NP		12.13	23.48	1.51
		04/20/1998	12.21	0.01	12.22	23.38	0.3
		07/21/1998	12.80	0.02	12.82	22.77	0.7
		11/18/1998	NP		13.59	22.02	0.3
		05/20/1999	NP		11.93	23.68	0.1

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Chevron				
CR-6	35.61	08/16/1999	NP		13.94	21.67	
		11/09/1999	13.12	0.09	13.21	22.32	0.1
		02/14/2000	NP		11.75	23.86	
		05/22/2000	NP		12.20	23.41	
Summary for Well CR-6 (32 detail records)					**SPH Recovered to Date:**		**5.18**
CR-7	35.57	03/24/1995	10.01	0.48	10.49	24.67	NA
		04/24/1995	10.19	0.57	10.76	24.33	NA
		05/22/1995	10.76	0.75	11.51	23.42	NA
		06/19/1995	11.25	0.15	11.40	24.04	NA
		07/24/1995	11.80	0.01	11.81	23.75	0.13
		08/28/1995	12.20	0.00	12.20	23.37	0.029
		09/25/1995	12.48	0.00	12.48	23.09	0.03
		10/23/1995	11.98	0.00	11.98	23.59	NA
		11/27/1995	10.73	0.00	10.73	24.84	NA
		12/29/1995	10.23	0.05	10.28	25.25	NA
		01/22/1996	9.91	0.21	10.12	25.27	0.12
		02/26/1996	8.50	0.50	9.00	26.15	0.15
		03/25/1996	9.81	0.02	9.83	25.72	0.01
		04/22/1996	10.21	0.12	10.33	25.14	NA
		05/28/1996	9.82	0.31	10.13	25.18	0.38
		06/24/1996	10.78	0.20	10.98	24.42	0.69
		07/22/1996	11.35	0.22	11.57	23.81	0.45
		08/26/1996	11.84	0.12	11.96	23.51	0.13
		09/23/1996	11.94	0.03	11.97	23.57	NA
		10/28/1996	11.51	0.02	11.53	24.02	NA
		11/25/1996	10.80	0.00	10.80	24.77	NA
		01/29/1997	NP		11.11	24.46	--
		04/21/1997	10.60	0.11	10.71	24.77	9.6
		07/24/1997	11.52	0.10	11.62	23.86	2.75
		10/15/1997	NP		11.57	24.00	0.25
		01/19/1998	10.45	0.01	10.46	25.10	0.5
		04/20/1998	10.78	0.11	10.89	24.59	1.1

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-7	35.57	08/06/1998	11.57	0.12	11.69	23.78	2.1
		11/18/1998	11.88	0.01	11.89	23.67	1.3
		02/25/1999	NP		8.70	26.87	
		05/20/1999	NP		9.88	25.69	0.2
		08/16/1999	NP		11.19	24.38	0.01
		11/09/1999	11.44	0.01	11.45	24.11	0.01
		02/14/2000	9.45	0.01	9.46	26.10	
		05/22/2000	NP		10.09	25.48	0.50
Summary for Well CR-7 (35 detail records)					**SPH Recovered to Date:**		**20.44**
CR-8	33.14	04/24/1995	NA		6.41	26.73	NA
		07/24/1995	NA		8.22	24.92	NA
		10/23/1995	NA		8.08	25.06	NA
		01/22/1996	NA		6.21	26.93	NA
		04/22/1996	NA		6.47	26.67	NA
		05/28/1996	NA		6.31	26.83	NA
		07/22/1996	NA		7.08	26.06	NA
		10/28/1996	NA		7.71	25.43	NA
		01/29/1997	NP		5.94	27.20	--
		04/21/1997	NP		6.41	26.73	--
		07/28/1997	NP		7.30	25.84	--
		10/15/1997	NP		7.36	25.78	--
		01/19/1998	NP		5.78	27.36	--
		04/20/1998	NP		6.44	26.70	--
		07/21/1998	NP		7.06	26.08	--
		11/18/1998	NP		7.73	25.41	--
		02/25/1999	NP		5.13	28.01	
		05/20/1999	NP		6.02	27.12	
		08/16/1999	NP		7.23	25.91	
		11/09/1999	NP		7.42	25.72	
		02/14/2000	NP		5.7	27.44	
		05/22/2000	NP		6.23	26.91	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Chevron				
Summary for Well CR-8 (22 detail records)					**SPH Recovered to Date:**		
CR-9	35.72	01/29/1997	NP		4.56	31.16	--
		04/21/1997	3.38	0.01	3.39	32.32	0.2
		07/24/1997	NP		5.71	30.01	0.00
		10/15/1997	NP		4.13	31.59	--
		01/19/1998	NP		3.01	32.71	--
		04/20/1998	NP		3.68	32.04	--
		07/21/1998	NP		3.44	32.28	--
		11/18/1998	NP		3.45	32.27	--
		02/25/1999	NP		2.63	33.09	
		05/20/1999	NP		3.13	32.59	
		08/16/1999	NP		5.70	30.02	
		11/09/1999	NP		4.29	31.43	
		02/14/2000	NP		3.02	32.70	
		05/22/2000	NP		3.78	31.94	
Summary for Well CR-9 (14 detail records)					**SPH Recovered to Date:**		0.20
CR-10	35.57	03/24/1995	5.34	0.03	5.37	30.17	NA
		04/24/1995	4.27	0.08	4.35	31.15	NA
		05/22/1995	5.31	0.09	5.40	30.09	NA
		06/19/1995	6.30	0.08	6.38	29.12	NA
		07/24/1995	9.22	0.00	9.22	26.35	NA
		08/28/1995	10.15	0.00	10.15	25.42	0.4
		09/25/1995	10.82	0.00	10.82	24.75	NA
		10/23/1995	9.44	0.00	9.44	26.13	NA
		12/29/1995	7.54	0.00	7.54	28.03	NA
		01/22/1996	6.96	0.05	7.01	28.52	NA
		02/26/1996	6.76	0.17	6.93	28.50	0.13
		03/25/1996	7.62	0.00	7.62	27.95	5.16
		04/22/1996	7.69	0.00	7.69	27.88	NA
		07/22/1996	1.28	-0.05	1.23	34.38	NA
		11/25/1996	2.35	0.00	2.35	33.22	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-10	35.57	01/29/1997	NP		3.76	31.81	--
		04/21/1997	4.26	0.16	4.42	31.01	6.4
		07/24/1997	5.94	0.38	6.32	28.93	6.0
		10/15/1997	5.70	0.32	6.02	29.28	3.0
		01/19/1998	4.01	0.15	4.16	31.28	5.0
		04/20/1998	4.82	0.08	4.90	30.60	4.5
		07/21/1998	5.83	0.23	6.06	29.31	5.0
		11/18/1998	6.66	0.52	7.18	27.95	6.0
		02/25/1999	NP		3.50	32.07	
		05/20/1999	4.62	0.03	4.65	30.89	0.1
		08/16/1999	6.37	0.17	6.54	28.89	0.5
		11/09/1999	6.49	0.65	7.14	27.88	0.5
		02/14/2000	4.08	0.04	4.12	31.42	
		05/22/2000	NP		4.95	30.62	
Summary for Well CR-10 (29 detail records)					SPH Recovered to Date:		42.69
CR-11	34.43	03/24/1995	1.19	0.00	1.19	33.24	NA
		04/24/1995	1.34	0.00	1.34	33.09	NA
		05/22/1995	2.49	0.00	2.49	31.94	NA
		06/19/1995	2.94	0.00	2.94	31.49	NA
		07/24/1995	3.68	0.00	3.68	30.75	NA
		08/28/1995	4.18	0.00	4.18	30.25	NA
		09/25/1995	4.83	0.00	4.83	29.60	NA
		10/23/1995	4.59	0.00	4.59	29.84	NA
		11/27/1995	3.61	0.00	3.61	30.82	NA
		12/29/1995	1.83	0.00	1.83	32.60	NA
		01/22/1996	1.78	0.00	1.78	32.65	NA
		02/26/1996	1.13	0.00	1.13	33.30	NA
		03/25/1996	1.27	0.00	1.27	33.16	NA
		04/22/1996	1.40	0.00	1.40	33.03	NA
		05/28/1996	1.45	0.00	1.45	32.98	NA
		06/24/1996	2.39	0.00	2.39	32.04	NA
		07/22/1996	3.35	0.00	3.35	31.08	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Chevron			
CR-11	34.43	08/26/1996	4.10	0.00	4.10	30.33	NA
		09/23/1996	4.35	0.00	4.35	30.08	NA
		10/28/1996	3.12	0.02	3.14	31.27	NA
		11/25/1996	2.35	0.00	2.35	32.08	0.00
		01/29/1997	NP		1.55	32.88	--
		04/21/1997	NP		1.34	33.09	--
		07/24/1997	NP		3.03	31.40	--
		10/15/1997	NP		3.68	30.75	--
		01/19/1998	NP		1.99	32.44	--
		04/20/1998	NP		1.22	33.21	--
		07/21/1998	NP		2.85	31.58	--
		11/18/1998	3.98	0.17	4.15	30.14	0.2
		02/25/1999	NP		1.33	33.10	
		05/20/1999	NP		1.77	32.66	0.1
		08/16/1999	NP		3.72	30.71	
		11/09/1999	NP		4.86	29.57	
		02/14/2000	NP		2.06	32.37	
		05/22/2000	NP		2.04	32.39	
Summary for Well CR-11 (35 detail records)					**SPH Recovered to Date:**		**0.30**
EX-1	34.15	02/25/1999	NP		14.38	19.77	
		05/20/1999	NP		15.44	18.71	
		08/18/1999	NP		16.42	17.73	
		11/09/1999	NP		16.80	17.35	
		02/14/2000	NP		15.55	18.60	
		05/22/2000	NP		15.86	18.29	
Summary for Well EX-1 (6 detail records)					**SPH Recovered to Date:**		

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-1	35.43	04/24/1995	NA		3.55	31.88	NA
		07/24/1995	NA		6.26	29.17	NA
		10/23/1995	NA		5.85	29.58	NA
		01/22/1996	NA		2.92	32.51	NA
		04/22/1996	NA		4.01	31.42	NA
		07/22/1996	NA		6.92	28.51	NA
		10/28/1996	NA		5.35	30.08	NA
		01/30/1997	NP		3.92	31.51	--
		04/21/1997	NP		3.63	31.80	--
		07/30/1997	NP		6.69	28.74	--
		10/14/1997	NP		5.18	30.25	--
		01/19/1998	NP		3.09	32.34	--
		04/21/1998	NP		4.40	31.03	--
		07/27/1998	NP		6.36	29.07	--
		11/17/1998	NP		6.28	29.15	--
		02/26/1999	NP		2.69	32.74	
		05/26/1999	NP		4.29	31.14	
		08/20/1999	NP		7.09	28.34	
		11/08/1999	NP		7.28	28.15	
		02/14/2000	NP		3.76	31.67	
		05/22/2000	NP		4.72	30.71	
Summary for Well MW-1 (21 detail records)						SPH Recovered to Date:	
MW-2	35.77	01/30/1997	NP		4.88	30.89	--
		04/21/1997	NP		5.41	30.36	--
		07/30/1997	NP		7.27	28.50	--
		10/14/1997	NP		7.57	28.20	--
		01/19/1998	NP		4.99	30.78	--
		04/21/1998	NP		6.24	29.53	--
		07/27/1998	NP		7.49	28.28	--
		11/17/1998	NP		8.63	27.14	--
		02/26/1999	NP		4.13	31.64	
		05/26/1999	NP		6.43	29.34	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-2	35.77	08/20/1999	NP		8.17	27.60	
		11/08/1999	NP		9.42	26.35	
		02/14/2000	NP		5.59	30.18	
		05/22/2000	NP		6.74	29.03	
Summary for Well MW-2 (14 detail records)					SPH Recovered to Date:		
MW-3	36.02	03/06/1995	NA		6.79	29.23	NA
		03/27/1995	NA		6.65	29.37	NA
		04/24/1995	NA		6.98	29.04	NA
		07/24/1995	NA		8.63	27.39	NA
		10/23/1995	NA		9.62	26.40	NA
		01/22/1996	8.96	0.00	8.96	27.06	NA
		04/22/1996	NA		6.34	29.68	NA
		07/22/1996	NA		8.47	27.55	NA
		10/28/1996	NA		8.70	27.32	NA
		01/30/1997	NP		6.40	29.62	--
		04/21/1997	NP		6.93	29.09	--
		07/30/1997	NP		8.54	27.48	--
		10/14/1997	NP		8.79	27.23	--
		01/19/1998	NP		7.54	28.48	--
		04/21/1998	NP		7.62	28.40	--
		07/27/1998	NP		8.79	27.23	--
		11/17/1998	NP		9.77	26.25	--
		02/26/1999	NP		5.66	30.36	
		05/26/1999	NP		7.78	28.24	
		08/20/1999	NP		9.35	26.67	
		11/08/1999	NP		10.50	25.52	
		02/14/2000	NP		7.02	29.00	
		05/22/2000	NP		8.04	27.98	
Summary for Well MW-3 (23 detail records)					SPH Recovered to Date:		
MW-4	36.39	04/24/1995	NA		6.35	30.04	NA
		07/24/1995	NA		8.17	28.22	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-4	36.39	10/23/1995	NA		9.16	27.23	NA
		01/22/1996	NA		5.20	31.19	NA
		04/22/1996	NA		5.59	30.80	NA
		07/22/1996	NA		7.97	28.42	NA
		10/28/1996	NA		8.14	28.25	NA
		11/25/1996	NA		6.10	30.29	NA
		01/30/1997	NP		5.40	30.99	--
		04/21/1997	NP		6.29	30.10	--
		07/30/1997	NP		8.07	28.32	--
		10/14/1997	NP		8.35	28.04	--
		01/19/1998	NP		5.86	30.53	--
		04/21/1998	NP		7.02	29.37	--
		07/27/1998	NP		8.33	28.06	--
		11/17/1998	NP		9.36	27.03	--
		02/26/1999	NP		4.68	31.71	
		05/26/1999	NP		7.23	29.16	
		08/20/1999	NP		8.94	27.45	
		11/08/1999	NP		10.09	26.30	
		02/14/2000	NP		6.36	30.03	
		05/22/2000	NP		7.54	28.85	
Summary for Well MW-4 (22 detail records)					SPH Recovered to Date:		
MW-5	33.52	03/27/1995	NP		3.55	29.97	--
		04/24/1995	NA		5.29	28.23	NA
		07/24/1995	NA		7.12	26.40	NA
		10/23/1995	NA		8.56	24.96	NA
		01/22/1996	NA		4.32	29.20	NA
		04/22/1996	NA		4.73	28.79	NA
		07/22/1996	NA		6.98	26.54	NA
		10/28/1996	NA		7.60	25.92	NA
		12/23/1996	NA		2.35	31.17	NA
		01/30/1997	NP		5.01	28.51	--
		04/21/1997	NP		5.07	28.45	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			GATX				
MW-5	33.52	07/30/1997	NP		7.05	26.47	--
		10/14/1997	NP		7.24	26.28	--
		01/19/1998	NP		5.52	28.00	--
		04/21/1998	NP		5.88	27.64	--
		07/27/1998	NP		7.38	26.14	--
		11/17/1998	NP		8.54	24.98	--
		02/26/1999	NP		4.26	29.26	
		05/26/1999	NP		6.15	27.37	
		08/20/1999	NP		8.05	25.47	
		11/08/1999	NP		8.96	24.56	
		02/14/2000	NP		6.02	27.50	
		05/22/2000	NP		6.64	26.88	
Summary for Well	MW-5 (23 detail records)					SPH Recovered to Date:	
MW-6	33.34	03/06/1995	3.34	0.20	3.54	29.63	NA
		03/27/1995	3.05	0.68	3.73	29.03	NA
		04/24/1995	3.29	0.89	4.18	28.40	NA
		05/22/1995	3.80	0.03	3.83	29.48	1.5
		06/19/1995	4.64	0.00	4.64	28.70	1.34
		07/24/1995	5.15	0.00	5.15	28.19	NA
		08/28/1995	5.90	0.00	5.90	27.44	NA
		09/25/1995	6.50	0.00	6.50	26.84	NA
		10/23/1995	6.22	0.00	6.22	27.12	NA
		11/27/1995	4.37	0.00	4.37	28.97	NA
		12/29/1995	3.76	0.19	3.95	29.23	NA
		01/22/1996	2.50	0.35	2.85	30.19	NA
		02/26/1996	2.07	0.01	2.08	31.25	NA
		03/25/1996	3.34	0.00	3.34	30.00	0.18
		04/22/1996	3.18	0.00	3.18	30.16	NA
		05/28/1996	3.23	0.00	3.23	30.11	0.06
		06/24/1996	4.35	0.00	4.35	28.99	NA
		07/22/1996	5.08	0.00	5.08	28.26	NA
		08/26/1996	5.89	0.00	5.89	27.45	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-6	33.34	09/23/1996	5.54	0.00	5.54	27.80	NA
		10/28/1996	5.19	0.00	5.19	28.15	NA
		11/25/1996	3.28	0.00	3.28	30.06	NA
		12/23/1996	2.98	0.43	3.41	29.56	NA
		01/30/1997	NP		2.77	30.57	--
		04/21/1997	NP		3.25	30.09	--
		07/30/1997	5.10	0.13	5.23	28.00	0.25
		10/14/1997	NP		5.40	27.94	--
		01/19/1998	NP		3.07	30.27	--
		04/21/1998	4.08	0.17	4.25	28.95	1.0
		07/27/1998	NP		5.34	28.00	--
		11/17/1998	NP		6.46	26.88	--
		02/26/1999	NP		2.26	31.08	
		05/26/1999	4.25	0.15	4.4	28.81	0.2
		08/20/1999	NP		6.05	27.29	
		11/08/1999	NP		7.38	25.96	
		02/14/2000	3.69	0.03	3.72	29.59	2
		05/22/2000	NP		4.70	28.64	
Summary for Well	MW-6 (37 detail records)				SPH Recovered to Date:		6.53
MW-7	34.12	03/06/1995	7.96	0.04	8.00	26.09	NA
		03/27/1995	7.88	0.06	7.94	26.13	NA
		04/24/1995	8.18	0.00	8.18	25.94	NA
		05/22/1995	8.51	0.34	8.85	24.98	NA
		06/19/1995	8.93	0.39	9.32	24.47	NA
		07/24/1995	9.35	0.15	9.50	24.49	0.06
		08/28/1995	9.79	0.21	10.00	23.94	NA
		09/25/1995	10.13	0.38	10.51	23.29	NA
		10/23/1995	7.04	0.43	7.47	26.28	NA
		11/27/1995	9.00	0.00	9.00	25.12	NA
		12/29/1995	8.13	0.03	8.16	25.93	0.37
		01/22/1996	7.44	0.00	7.44	26.68	0.08
		02/26/1996	6.20	0.00	6.20	27.92	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-7	34.12	03/25/1996	7.50	0.20	7.70	26.25	NA
		04/22/1996	7.84	0.11	7.95	26.08	0.12
		05/28/1996	7.70	0.10	7.80	26.23	0.12
		06/24/1996	8.36	0.12	8.48	25.54	0.37
		07/22/1996	8.98	0.30	9.28	24.59	NA
		08/26/1996	9.52	0.30	9.82	24.05	NA
		09/23/1996	9.55	0.38	9.93	23.87	NA
		10/28/1996	9.30	0.48	9.78	23.93	NA
		11/25/1996	8.23	0.68	8.91	24.63	NA
		12/23/1996	7.52	1.98	9.50	22.94	NA
		01/30/1997	7.13	3.11	10.24	21.24	70
		04/21/1997	7.91	1.81	9.72	22.86	57
		07/24/1997	8.91	1.05	9.96	23.27	22.0
		10/14/1997	9.58	0.30	9.88	23.98	6.0
		01/19/1998	7.92	1.76	9.68	22.94	20.0
		04/21/1998	8.35	1.75	10.10	22.53	17.5
		07/27/1998	9.34	1.27	10.61	22.43	20.0
		11/17/1998	10.18	0.12	10.30	23.72	20.5
		02/26/1999	6.98	0.05	7.03	27.05	3.2
		05/26/1999	8.61	0.15	8.76	25.23	3.75
		08/20/1999	NP		9.88	24.24	0.4
		11/08/1999	10.58	0.26	10.84	23.06	1.2
		02/14/2000	8.54	0.20	8.74	25.21	3.7
		05/22/2000	8.92	1.03	9.95	23.29	11.00
Summary for Well MW-7 (37 detail records)						SPH Recovered to Date:	257.37
MW-8	33.95	04/24/1995	NA		7.27	26.68	NA
		07/24/1995	NA		8.53	25.42	NA
		10/23/1995	NA		9.45	24.50	NA
		01/22/1996	NA		6.45	27.50	NA
		04/22/1996	NA		6.99	26.96	NA
		07/22/1996	NA		8.30	25.65	NA
		10/28/1996	NA		8.76	25.19	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-8	33.95	01/30/1997	NP		6.38	27.57	--
		04/21/1997	NP		7.07	26.88	--
		07/30/1997	NP		8.29	25.66	--
		10/14/1997	NP		9.82	24.13	--
		01/19/1998	NP		7.18	26.77	--
		04/21/1998	NP		7.57	26.38	--
		07/27/1998	NP		8.62	25.33	--
		11/17/1998	NP		9.51	24.44	--
		02/26/1999	NP		5.68	28.27	
		05/26/1999	NP		7.73	26.22	
		08/20/1999	NP		9.03	24.92	
		11/08/1999	NP		10.09	23.86	
		02/14/2000	NP		7.18	26.77	
		05/22/2000	NP		8.00	25.95	
Summary for Well	MW-8 (21 detail records)				**SPH Recovered to Date:**		
MW-9	36.53	04/24/1995	NA		9.67	26.86	NA
		07/24/1995	NA		10.85	25.68	NA
		10/23/1995	NA		11.86	24.67	NA
		01/22/1996	NA		9.57	26.96	NA
		04/22/1996	NA		9.47	27.06	NA
		07/22/1996	NA		10.34	26.19	NA
		10/28/1996	NA		11.32	25.21	NA
		01/30/1997	NP		8-94		--
		04/21/1997	9.51	0.01	9.52	27.00	0.1
		07/24/1997	NP		10.28	26.25	--
		10/14/1997	NP		11.23	25.30	--
		01/19/1998	NP		10.28	26.25	--
		04/21/1998	NP		9.86	26.67	--
		07/27/1998	NP		10.77	25.76	--
		11/17/1998	NP		11.65	24.88	--
		02/26/1999	NP		8.69	27.84	
		05/26/1999	NP		10.01	26.52	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-9	36.53	08/20/1999	NP		11.15	25.38	
		11/08/1999	NP		12.12	24.41	
		02/14/2000	NP		9.66	26.87	
		05/22/2000	NP		10.24	26.29	
Summary for Well	MW-9 (21 detail records)				**SPH Recovered to Date:**		0.10
MW-10	35.82	04/24/1995	NA		8.54	27.28	NA
		07/24/1995	NA		10.25	25.57	NA
		10/23/1995	NA		11.20	24.62	NA
		01/22/1996	NA		7.31	28.51	NA
		04/22/1996	NA		8.09	27.73	NA
		07/22/1996	NA		9.87	25.95	NA
		10/28/1996	NA		10.22	25.60	NA
		01/30/1997	NP		7.40	28.42	--
		04/21/1997	NP		8.40	27.42	--
		07/30/1997	NP		9.98	25.84	--
		10/14/1997	NP		10.38	25.44	--
		01/19/1998	NP		8.24	27.58	--
		04/21/1998	NP		9.13	26.69	--
		07/27/1998	NP		10.34	25.48	--
		11/17/1998	NP		11.37	24.45	--
		02/26/1999	NP		1.54	34.28	
		05/26/1999	NP		9.25	26.57	
		08/20/1999	NP		10.92	24.90	
		11/08/1999	NP		12.07	23.75	
		02/14/2000	NP		8.46	27.36	
		05/22/2000	NP		5.59	30.23	
Summary for Well	MW-10 (21 detail records)				**SPH Recovered to Date:**		
MW-11	36.47	03/06/1995	NA		5.09	31.38	NA
		03/27/1995	5.25	0.00	5.25	31.22	NA
		04/24/1995	5.36	0.00	5.36	31.11	NA
		05/22/1995	6.11	0.00	6.11	30.36	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-11	36.47	06/19/1995	6.52	0.00	6.52	29.95	NA
		07/24/1995	7.10	0.00	7.10	29.37	NA
		08/28/1995	8.00	0.00	8.00	28.47	NA
		09/25/1995	8.12	0.00	8.12	28.35	NA
		10/23/1995	7.39	0.00	7.39	29.08	NA
		11/27/1995	5.25	0.00	5.25	31.22	NA
		12/29/1995	5.65	0.00	5.65	30.82	NA
		01/22/1996	4.50	0.00	4.50	31.97	NA
		01/30/1996	NP		5.20	31.27	--
		02/26/1996	3.69	0.00	3.69	32.78	NA
		03/25/1996	5.50	0.00	5.50	30.97	NA
		04/22/1996	5.15	0.00	5.15	31.32	NA
		05/28/1996	5.29	0.00	5.29	31.18	NA
		06/24/1996	6.27	0.00	6.27	30.20	NA
		07/22/1996	7.04	0.00	7.04	29.43	NA
		08/26/1996	7.86	0.00	7.86	28.61	NA
		09/23/1996	7.20	0.00	7.20	29.27	NA
		10/28/1996	6.33	0.00	6.33	30.14	NA
		11/25/1996	4.94	0.00	4.94	31.53	NA
		12/23/1996	NA		4.68	31.79	NA
		01/30/1997	NP		5.20	31.27	--
		04/21/1997	NP		5.41	31.06	--
		07/30/1997	NP		7.05	29.42	--
		10/14/1997	6.62	0.01	6.63	29.83	0.5
		01/19/1998	NP		4.81	31.66	--
		04/21/1998	NP		6.08	30.39	--
		07/27/1998	NP		7.39	29.08	--
		11/17/1998	NP		6.96	29.51	--
		02/26/1999	NP		4.19	32.28	
		05/26/1999	NP		6.13	30.34	
		08/20/1999	NP		7.87	28.60	
		11/08/1999	NP		7.75	28.72	
		02/14/2000	NP		5.04	31.43	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-11	36.47	05/22/2000	NP		3.11	33.36	
Summary for Well MW-11 (38 detail records)						**SPH Recovered to Date:**	**0.50**
MW-12	35.95	04/24/1995	NA		5.22	30.73	NA
		07/24/1995	NA		7.30	28.65	NA
		10/23/1995	NA		8.33	27.62	NA
		01/22/1996	NA		3.83	32.12	NA
		04/22/1996	NA		4.34	31.61	NA
		07/22/1996	NA		7.15	28.80	NA
		10/28/1996	NA		7.37	28.58	NA
		01/30/1997	NP		4.26	31.69	--
		04/21/1997	NP		5.05	30.90	--
		07/30/1997	NP		7.27	28.68	--
		10/14/1997	NP		7.46	28.49	--
		01/19/1998	NP		4.43	31.52	--
		04/21/1998	NP		5.93	30.02	--
		07/27/1998	NP		7.56	28.39	--
		11/17/1998	NP		8.58	27.37	--
		02/26/1999	NP		3.30	32.65	
		05/26/1999	NP		6.14	29.81	
		08/20/1999	NP		8.34	27.61	
		11/08/1999	NP		9.40	26.55	
		02/14/2000	NP		4.99	30.96	
		05/22/2000	NP		6.57	29.38	
Summary for Well MW-12 (21 detail records)						**SPH Recovered to Date:**	
MW-13	37.89	04/24/1995	NA		4.41	33.48	NA
		07/24/1995	NA		6.29	31.60	NA
		10/23/1995	NA		6.67	31.22	NA
		01/22/1996	NA		3.65	34.24	NA
		04/22/1996	NA		4.18	33.71	NA
		07/22/1996	NA		6.28	31.61	NA
		10/28/1996	NA		5.61	32.28	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-13	37.89	01/30/1997	NP		4.22	33.67	--
		04/21/1997	NP		4.28	33.61	--
		07/30/1997	NP		6.27	31.62	--
		10/14/1997	NP		5.64	32.25	--
		01/19/1998	NP		3.43	34.46	--
		04/21/1998	NP		4.90	32.99	--
		07/27/1998	NP		6.44	31.45	--
		11/17/1998	NP		6.27	31.62	--
		02/26/1999	NP		3.25	34.64	
		05/26/1999	NP		5.17	32.72	
		08/20/1999	NP		7.06	30.83	
		11/08/1999	NP		6.92	30.97	
		02/14/2000	NP		3.85	34.04	
		05/22/2000	NP		5.03	32.86	
Summary for Well	MW-13 (21 detail records)				SPH Recovered to Date:		
MW-14	36.28	04/24/1995	NA		3.33	32.95	NA
		07/24/1995	NA		5.62	30.66	NA
		10/23/1995	NA		5.96	30.32	NA
		01/22/1996	NA		2.71	33.57	NA
		04/22/1996	NA		3.25	33.03	NA
		07/22/1996	NA		5.68	30.60	NA
		10/28/1996	NA		5.30	30.98	NA
		01/30/1997	NP		3.28	33.00	--
		04/21/1997	NP		3.29	32.99	--
		07/30/1997	NP		5.64	30.64	--
		10/14/1997	NP		5.13	31.15	--
		01/19/1998	NP		2.50	33.78	--
		04/21/1998	NP		4.00	32.28	--
		07/27/1998	NP		5.73	30.55	--
		11/17/1998	NP		5.75	30.53	--
		02/26/1999	NP		2.12	34.16	
		05/26/1999	NP		4.24	32.04	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-14	36.28	08/20/1999	NP		6.59	29.69	
		11/08/1999	NP		6.54	29.74	
		02/14/2000	NP		2.73	33.55	
		05/22/2000	NP		4.50	31.78	
Summary for Well MW-14 (21 detail records)					SPH Recovered to Date:		
MW-15	37.50	01/30/1997	NP		3.28	34.22	--
		04/21/1997	NP		4.85	32.65	--
		07/30/1997	NP		7.92	29.58	--
		10/14/1997	NP		5.91	31.59	--
		01/19/1998	NP		4.43	33.07	--
		04/21/1998	NP		4.81	32.69	--
		07/27/1998	NP		7.76	29.74	--
		11/17/1998	NP		7.20	30.30	--
		02/26/1999	NP		2.87	34.63	
	37.5	05/26/1999	NP		5.5	32.00	
		08/20/1999	NP		8.84	28.66	
		11/08/1999	NP		8.58	28.92	
		02/14/2000	NP		4.09	33.41	
		05/22/2000	NP		5.80	31.70	
Summary for Well MW-15 (14 detail records)					SPH Recovered to Date:		
MW-16	34.93	07/24/1995	NA		5.78	29.15	NA
		10/23/1995	NA		6.73	28.20	NA
		01/22/1996	NA		2.44	32.49	NA
		04/22/1996	NA		3.46	31.47	NA
		07/22/1996	NA		5.63	29.30	NA
		10/28/1996	NA		5.90	29.03	NA
		01/30/1997	NP		3.15	31.78	--
		04/21/1997	NP		3.44	31.49	--
		07/30/1997	NP		5.65	29.28	--
		10/14/1997	NP		5.80	29.13	--
		01/19/1998	NP		2.90	32.03	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-16	34.93	04/21/1998	NP		4.31	30.62	--
		07/27/1998	NP		5.88	29.05	--
		11/17/1998	NP		6.95	27.98	--
		02/26/1999	NP		2.00	32.93	
		05/26/1999	NP		4.46	30.47	
		08/20/1999	NP		6.62	28.31	
		11/08/1999	NP		7.76	27.17	
		02/14/2000	NP		3.44	31.49	
		05/22/2000	NP		4.98	29.95	
Summary for Well MW-16 (20 detail records)					SPH Recovered to Date:		
MW-17	36.05	01/30/1997	NP		4.27	31.78	--
		04/21/1997	NP		4.39	31.66	--
		07/30/1997	NP		5.28	30.77	--
		10/14/1997	NP		5.21	30.84	--
		01/19/1998	NP		4.12	31.93	--
		04/21/1998	NP		4.70	31.35	--
		07/27/1998	NP		5.37	30.68	--
		11/17/1998	NP		5.84	30.21	--
		02/26/1999	NP		3.79	32.26	
		05/26/1999	NP		4.17	31.88	
		08/20/1999	NP		5.84	30.21	
		11/08/1999	NP		6.24	29.81	
		02/14/2000	NP		4.22	31.83	
		05/22/2000	NP		4.70	31.35	
Summary for Well MW-17 (14 detail records)					SPH Recovered to Date:		
MW-18	33.76	04/24/1995	NA		1.66	32.10	NA
		07/24/1995	NA		3.02	30.74	NA
		10/23/1995	NA		3.43	30.33	NA
		01/22/1996	NA		1.08	32.68	NA
		04/22/1996	NA		0.89	32.87	NA
		07/22/1996	NA		2.83	30.93	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-18	33.76	10/28/1996	NA		2.48	31.28	NA
		01/30/1997	NP		1.24	32.52	--
		04/21/1997	NP		1.23	32.53	--
		07/30/1997	NP		2.66	31.10	--
		10/14/1997	NP		2.45	31.31	--
		01/19/1998	NP		0.73	33.03	--
		04/21/1998	NP		1.95	31.81	--
		07/27/1998	NP		2.94	30.82	--
		11/17/1998	NP		3.44	30.32	--
		02/26/1999	NP		0.73	33.03	
		05/26/1999	NP		2.14	31.62	
		08/20/1999	NP		3.53	30.23	
		11/08/1999	NP		4.18	29.58	
		02/14/2000	NP		0.87	32.89	
		05/22/2000	NP		2.15	31.61	
Summary for Well	MW-18 (21 detail records)				SPH Recovered to Date:		
MW-19	33.39	03/06/1995	2.77	0.49	3.26	29.71	NA
		03/27/1995	2.57	0.51	3.08	29.88	NA
		04/24/1995	2.79	0.54	3.33	29.60	NA
		05/22/1995	3.19	0.51	3.70	29.26	NA
		06/19/1995	3.87	0.61	4.48	28.39	NA
		07/24/1995	4.41	0.01	4.42	28.96	0.31
		08/28/1995	5.64	0.00	5.64	27.75	0.03
		09/25/1995	6.80	0.00	6.80	26.59	NA
		10/23/1995	5.48	0.00	5.48	27.91	NA
		11/27/1995	3.79	0.00	3.79	29.60	NA
		12/29/1995	3.23	0.00	3.23	30.16	NA
		01/22/1996	2.18	0.00	2.18	31.21	NA
		02/26/1996	1.57	0.00	1.57	31.82	NA
		03/25/1996	2.56	0.00	2.56	30.83	NA
		04/22/1996	1.77	0.00	1.77	31.62	NA
		05/28/1996	2.11	0.00	2.11	31.28	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-19	33.39	06/24/1996	2.93	0.00	2.93	30.46	NA
		07/22/1996	3.61	0.00	3.61	29.78	NA
		08/26/1996	4.31	0.00	4.31	29.08	NA
		09/23/1996	3.65	0.00	3.65	29.74	NA
		10/28/1996	1.95	0.00	1.95	31.44	NA
		11/25/1996	1.63	0.00	1.63	31.76	NA
		12/23/1996	1.86	0.00	1.86	31.53	NA
		01/30/1997	NP		1.86	31.53	--
		04/21/1997	NP		2.23	31.16	--
		07/30/1997	NP		3.79	29.60	--
		10/14/1997	NP		3.63	29.76	--
		01/19/1998	NP		1.31	32.08	--
		04/21/1998	NP		2.84	30.55	--
		07/27/1998	NP		4.08	29.31	--
		11/17/1998	NP		4.88	28.51	--
		02/26/1999	1.62	0.02	1.64	31.73	
		05/26/1999	3.62	0.02	3.64	29.73	0.25
		08/20/1999	NP		5.39	28.00	
		11/08/1999	6.13	0.11	6.24	27.06	0.1
		02/14/2000	NP		2.82	30.57	
		05/22/2000	4.59	0.03	4.62	28.74	
Summary for Well MW-19 (37 detail records)					SPH Recovered to Date:		0.69
MW-20	34.76	04/24/1995	NA		9.55	25.21	NA
		07/24/1995	NA		10.73	24.03	NA
		10/23/1995	NA		11.35	23.41	NA
		01/22/1996	NA		8.50	26.26	NA
		04/22/1996	NA		9.53	25.23	NA
		07/22/1996	NA		10.41	24.35	NA
		09/23/1996	11.08	0.00	11.08	23.68	NA
		10/28/1996	NA		10.74	24.02	NA
		11/25/1996	NA		9.19	25.57	NA
		12/23/1996	NA		9.05	25.71	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-20	34.76	01/30/1997	NP		8.03	26.73	--
		04/21/1997	NP		9.35	25.41	--
		07/30/1997	NP		10.45	24.31	--
		10/14/1997	NP		10.58	24.18	--
		01/19/1998	NP		9.07	25.69	--
		04/21/1998	NP		9.87	24.89	--
		07/27/1998	NP		10.74	24.02	--
		11/17/1998	NP		11.26	23.50	--
		02/26/1999	NP		7.97	26.79	
		05/26/1999	NP		9.87	24.89	
		08/20/1999	NP		11.19	23.57	
		11/08/1999	NP		11.95	22.81	
		02/14/2000	NP		9.8	24.96	
		05/22/2000	NP		10.23	24.53	
Summary for Well	MW-20 (24 detail records)				SPH Recovered to Date:		
MW-21	34.33	04/24/1995	NA		1.48	32.85	NA
		07/24/1995	NA		2.21	32.12	NA
		10/23/1995	NA		2.04	32.29	NA
		01/22/1996	NA		1.08	33.25	NA
		04/22/1996	NA		0.78	33.55	NA
		07/22/1996	NA		2.24	32.09	NA
		10/28/1996	NA		1.97	32.36	NA
		01/30/1997	NP		1.15	33.18	--
		04/21/1997	NP		1.13	33.20	--
		07/30/1997	NP		2.05	32.28	--
		10/14/1997	NP		1.76	32.57	--
		01/19/1998	NM		NM		--
		04/21/1998	NP		1.62	32.71	--
		07/27/1998	NP		2.13	32.20	--
		11/17/1998	NP		1.86	32.47	--
		02/26/1999	NP		1.03	33.30	
		05/26/1999	NP		1.45	32.88	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-21	34.33	08/20/1999	NP		2.57	31.76	
		11/08/1999	NP		2.36	31.97	
		02/14/2000	NP		1.26	33.07	
		05/22/2000	NP		1.62	32.71	
Summary for Well MW-21 (21 detail records)						**SPH Recovered to Date:**	
MW-22	35.65	03/06/1995	NA		3.32	32.33	NA
		03/27/1995	3.23	0.00	3.23	32.42	NA
		04/24/1995	3.25	0.00	3.25	32.40	NA
		05/22/1995	3.93	0.00	3.93	31.72	NA
		06/19/1995	4.34	0.00	4.34	31.31	NA
		07/24/1995	4.83	0.00	4.83	30.82	NA
		08/28/1995	5.35	0.00	5.35	30.30	NA
		09/25/1995	5.94	0.00	5.94	29.71	NA
		10/23/1995	5.24	0.00	5.24	30.41	NA
		11/27/1995	4.04	0.00	4.04	31.61	NA
		12/28/1995	3.26	0.00	3.26	32.39	NA
		01/22/1996	2.77	0.00	2.77	32.88	NA
		02/26/1996	2.42	0.00	2.42	33.23	NA
		03/25/1996	3.47	0.00	3.47	32.18	NA
		04/22/1996	3.32	0.00	3.32	32.33	NA
		05/28/1996	3.06	0.00	3.06	32.59	NA
		06/24/1996	3.93	0.00	3.93	31.72	NA
		07/22/1996	4.55	0.00	4.55	31.10	NA
		08/26/1996	6.85	0.00	6.85	28.80	NA
		09/23/1996	5.66	0.00	5.66	29.99	NA
		10/28/1996	4.80	0.00	4.80	30.85	NA
		11/25/1996	3.96	0.00	3.96	31.69	NA
		12/23/1996	3.20	0.00	3.20	32.45	NA
		01/30/1997	NP		3.72	31.93	--
		04/21/1997	NP		3.27	32.38	--
		07/30/1997	NP		4.73	30.92	--
		10/14/1997	NP		4.87	30.78	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-22	35.65	01/19/1998	NP		2.96	32.69	--
		04/21/1998	NP		3.71	31.94	--
		07/27/1998	NP		4.80	30.85	--
		11/17/1998	NP		5.33	30.32	--
		02/26/1999	NP		2.28	33.37	
		05/26/1999	NP		3.61	32.04	
		08/20/1999	NP		5.20	30.45	
		11/08/1999	NP		6.49	29.16	
		02/14/2000	NP		2.85	32.80	
		05/22/2000	NP		4.28	31.37	
Summary for Well MW-22 (37 detail records)					SPH Recovered to Date:		
MW-23	36.06	03/27/1995	9.42	0.00	9.42	26.64	NA
		04/24/1995	3.97	0.00	3.97	32.09	NA
		05/22/1995	4.50	0.00	4.50	31.56	NA
		06/26/1995	4.75	0.00	4.75	31.31	NA
		07/24/1995	5.07	0.00	5.07	30.99	NA
		08/28/1995	5.44	0.11	5.55	30.42	NA
		10/23/1995	5.15	0.00	5.15	30.91	NA
		11/27/1995	3.56	0.00	3.56	32.50	NA
		12/28/1995	4.27	0.00	4.27	31.79	NA
		01/22/1996	NA		3.49	32.57	NA
		02/26/1996	3.59	0.00	3.59	32.47	NA
		03/25/1996	4.24	0.00	4.24	31.82	NA
		04/22/1996	3.23	0.00	3.23	32.83	NA
		05/28/1996	3.97	0.00	3.97	32.09	NA
		06/24/1996	4.46	0.00	4.46	31.60	NA
		07/22/1996	5.02	0.03	5.05	30.98	NA
		08/28/1996	5.80	0.00	5.80	30.26	NA
		09/23/1996	5.30	0.06	5.36	30.65	NA
		09/25/1996	5.78	0.22	6.00	29.87	NA
		10/28/1996	4.73	0.00	4.73	31.33	NA
		11/25/1996	3.75	0.00	3.75	32.31	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-23	36.06	12/23/1996	3.68	0.00	3.68	32.38	NA
		01/30/1997	NP		3.46	32.60	--
		04/21/1997	NP		3.89	32.17	--
		07/30/1997	NP		5.15	30.91	--
		10/14/1997	5.82	0.07	5.89	30.11	3.0
		01/19/1998	NP		3.08	32.98	--
		04/21/1998	NP		4.15	31.91	--
		07/27/1998	4.71	0.01	4.72	31.33	2.1
		11/17/1998	5.05	0.01	5.06	30.99	--
		02/26/1999	NP		3.38	32.68	
		05/26/1999	NP		4.25	31.81	
		08/20/1999	5.27	0.14	5.41	30.53	0.06
		11/08/1999	5.27	0.38	5.65	30.09	0.06
		02/14/2000	NP		3.56	32.50	
		05/22/2000	NP		5.63	30.43	
Summary for Well	MW-23 (36 detail records)				SPH Recovered to Date:		5.22
MW-24	35.15	03/06/1995	4.15	0.83	4.98	29.46	NA
		04/24/1995	5.31	-0.94	4.37	31.58	NA
		05/22/1995	4.96	-0.01	4.95	30.21	NA
		06/26/1995	6.50	1.90	8.40	25.14	NA
		07/24/1995	7.25	0.24	7.49	27.46	NA
		08/28/1995	8.42	1.58	10.00	23.81	NA
		12/01/1995	NM		NM		28.1
		03/27/1996	4.28	0.90	5.18	29.20	NA
		12/01/1996	NM		NM		1.2
		01/30/1997	NP		5.10	30.05	--
		04/21/1997	NP		4.89	30.26	--
		07/30/1997	8.30	0.16	8.46	26.55	0.25
		10/14/1997	NP		8.13	27.02	1.5
		01/19/1998	4.02	0.01	4.03	31.11	0.75
		04/21/1998	5.34	0.01	5.35	29.79	0.12
		07/27/1998	6.98	0.02	7.00	28.13	3.1

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-24	35.15	11/17/1998	8.00	0.04	8.04	27.08	0.25
		02/26/1999	3.94	0.01	3.95	31.19	
		05/26/1999	5.34	0.01	5.35	29.79	0.25
		08/20/1999	NP		7.62	27.53	
		11/08/1999	NP		8.59	26.56	
		02/14/2000	4.5	0.50	5.0	29.73	1
		05/22/2000	5.21	0.13	5.34	29.70	2.00
Summary for Well MW-24 (23 detail records)					SPH Recovered to Date:		38.52
MW-25	34.73	04/22/1996	10.00	0.24	10.24	24.29	NA
		09/23/1996	11.69	0.00	11.69	23.04	NA
		10/28/1996	NA		11.22	23.51	NA
		11/25/1996	NA		9.95	24.78	NA
		12/23/1996	NA		9.72	25.01	NA
		01/30/1997	NP		9.37	25.36	--
		04/21/1997	9.90	0.01	9.91	24.81	0.1
		07/24/1997	NP		10.92	23.81	--
		10/14/1997	NP		11.30	23.43	--
		01/19/1998	NP		9.84	24.89	--
		04/21/1998	NP		10.59	24.14	--
		07/27/1998	NP		11.46	23.27	--
		11/17/1998	NP		11.97	22.76	--
		02/26/1999	NP		9.71	25.02	
		05/26/1999	NP		10.46	24.27	
		11/08/1999	NP		12.42	22.31	
		02/14/2000	NP		10.03	24.70	
		05/22/2000	NP		11.66	23.07	
Summary for Well MW-25 (18 detail records)					SPH Recovered to Date:		0.10
MW-26	34.78	07/22/1996	11.39	0.43	11.82	22.59	NA
		09/11/1996	10.00	0.24	10.24	24.34	NA
		09/23/1996	11.85	0.25	12.10	22.47	NA
		10/28/1996	11.38	0.03	11.41	23.34	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-26	34.78	11/25/1996	10.36	0.00	10.36	24.42	NA
		12/23/1996	10.39	0.00	10.39	24.39	NA
		01/30/1997	NP		10.35	24.43	--
		04/21/1997	NP		10.32	24.46	0.1
		07/30/1997	11.42	0.01	11.43	23.34	0.1
		10/14/1997	11.68	0.02	11.70	23.06	0.5
		01/19/1998	NP		10.36	24.42	--
		04/21/1998	NP		10.98	23.80	--
		07/27/1998	NP		11.80	22.98	--
		11/17/1998	NP		12.36	22.42	--
		02/26/1999	NP		9.12	25.66	
		05/26/1999	NP		10.84	23.94	0.2
		08/20/1999	NP		12.17	22.61	
		11/08/1999	NP		12.75	22.03	
		02/14/2000	NP		10.44	24.34	
		05/22/2000	NP		11.10	23.68	
Summary for Well	MW-26 (20 detail records)				SPH Recovered to Date:		0.90
MW-27	35.67	02/26/1996	3.94	0.00	3.94	31.73	NA
		03/25/1996	4.73	0.00	4.73	30.94	NA
		04/22/1996	3.71	0.00	3.71	31.96	NA
		05/28/1996	4.54	0.00	4.54	31.13	NA
		06/24/1996	5.34	0.00	5.34	30.33	NA
		07/22/1996	5.73	0.00	5.73	29.94	NA
		08/26/1996	5.96	0.00	5.96	29.71	NA
		09/23/1996	6.81	0.00	6.81	28.86	NA
		10/28/1996	5.35	0.00	5.35	30.32	NA
		11/25/1996	3.34	0.00	3.34	32.33	NA
		12/23/1996	4.04	0.00	4.04	31.63	NA
		01/30/1997	NP		4.37	31.30	--
		04/21/1997	NP		4.44	31.23	--
		07/30/1997	NP		5.69	29.98	--
		10/14/1997	NP		5.29	30.38	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-27	35.67	01/19/1998	NP		3.81	31.86	--
		04/21/1998	NP		4.90	30.77	--
		07/27/1998	NP		5.66	30.01	--
	35.69	11/17/1998	NP		5.70	29.99	--
		02/26/1999	NP		3.50	32.19	
		05/26/1999	NP		4.92	30.77	
		08/20/1999	NP		5.96	29.73	
		11/08/1999	NP		5.82	29.87	
		02/14/2000	NP		3.67	32.02	
		05/22/2000	NP		4.91	30.78	
Summary for Well MW-27 (25 detail records)					SPH Recovered to Date:		
MW-28	34.39	03/06/1995	NA		4.41	29.98	NA
		03/27/1995	4.74	0.01	4.75	29.63	NA
		04/24/1995	5.26	0.00	5.26	29.13	NA
		05/22/1995	6.00	0.02	6.02	28.35	NA
		06/26/1995	6.50	0.09	6.59	27.72	NA
		07/24/1995	6.94	0.00	6.94	27.45	NA
		08/28/1995	8.04	0.01	8.05	26.33	0.75
		10/23/1995	7.60	0.00	7.60	26.79	NA
		11/27/1995	4.04	0.00	4.04	30.35	0.03
		12/28/1995	4.25	0.00	4.25	30.14	NA
		01/22/1996	2.29	0.00	2.29	32.10	NA
		02/26/1996	3.78	0.00	3.78	30.61	NA
		03/25/1996	5.10	0.00	5.10	29.29	NA
		04/22/1996	4.22	0.00	4.22	30.17	NA
		05/28/1996	4.66	0.00	4.66	29.73	NA
		06/24/1996	6.01	0.00	6.01	28.38	NA
		07/22/1996	6.77	0.00	6.77	27.62	NA
		08/28/1996	7.56	0.00	7.56	26.83	NA
		09/23/1996	6.28	0.00	6.28	28.11	NA
		09/25/1996	11.75	0.00	11.75	22.64	1.03
		10/28/1996	5.03	0.00	5.03	29.36	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-28	34.39	11/25/1996	2.50	0.00	2.50	31.89	NA
		12/23/1996	4.38	0.01	4.39	29.99	NA
		01/30/1997	NP		3.71	30.68	--
		04/21/1997	4.72	0.03	4.75	29.61	0.5
		07/30/1997	NP		6.30	28.09	--
		10/14/1997	5.87	0.02	5.89	28.48	1.0
		01/19/1998	NP		4.01	30.38	--
		04/21/1998	5.16	0.01	5.17	29.21	0.02
		07/27/1998	NP		6.67	27.72	1.0
		11/17/1998	NP		7.16	27.23	--
		02/26/1999	NP		3.38	31.01	
		05/26/1999	4.55	0.01	4.56	29.82	0.2
		08/20/1999	NP		7.19	27.20	0.08
		11/08/1999	13.05	0.13	13.18	21.10	0.2
		02/14/2000	NP		4.03	30.36	
		05/22/2000	NP		5.44	28.95	1.00
Summary for Well	MW-28 (37 detail records)				**SPH Recovered to Date:**		**5.81**
MW-29	35.77	04/24/1995	NA		13.34	22.43	NA
		07/24/1995	NA		14.20	21.57	NA
		10/23/1995	NA		14.86	20.91	NA
		01/22/1996	NA		12.70	23.07	NA
		04/22/1996	NA		12.75	23.02	NA
		07/22/1996	NA		13.64	22.13	NA
		10/28/1996	NA		14.15	21.62	NA
		01/30/1997	NP		13.41	22.36	--
		04/21/1997	NP		12.89	22.88	--
		07/30/1997	NP		13.58	22.19	--
		10/14/1997	NP		14.17	21.60	--
		01/19/1998	NP		13.13	22.64	--
		04/21/1998	NP		13.32	22.45	--
		07/27/1998	NP		14.01	21.76	--
		11/17/1998	NP		14.63	21.14	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-29	35.77	02/26/1999	NP		12.22	23.55	
		05/26/1999	NP		13.17	22.60	
		08/20/1999	NP		14.22	21.55	
		11/08/1999	NP		14.92	20.85	
		02/14/2000	NP		12.98	22.79	
		05/22/2000	NP		13.49	22.28	
Summary for Well MW-29 (21 detail records)					SPH Recovered to Date:		
MW-30	36.39	01/30/1997	NP		4.43	31.96	--
		04/21/1997	NP		4.65	31.74	--
		07/30/1997	NP		6.00	30.39	--
		10/14/1997	NP		5.79	30.60	--
		01/19/1998	NP		3.85	32.54	--
		04/21/1998	NP		5.22	31.17	--
		07/27/1998	NP		6.23	30.16	--
		11/17/1998	NP		6.99	29.40	--
		02/26/1999	NP		3.76	32.63	
		05/26/1999	NP		5.32	31.07	
		08/20/1999	NP		6.74	29.65	
		11/08/1999	NP		7.45	28.94	
		02/14/2000	NP		3.97	32.42	
		05/22/2000	NP		5.37	31.02	
Summary for Well MW-30 (14 detail records)					SPH Recovered to Date:		
MW-31	37.55	03/06/1995	NA		5.64	31.91	NA
		03/27/1995	5.75	0.01	5.76	31.78	NA
		04/24/1995	6.09	0.00	6.09	31.46	NA
		05/22/1995	6.70	0.00	6.70	30.85	NA
		06/26/1995	7.26	0.00	7.26	30.29	NA
		07/24/1995	7.74	0.00	7.74	29.81	NA
		08/28/1995	8.41	0.00	8.41	29.14	NA
		10/23/1995	8.56	0.00	8.56	28.99	NA
		11/27/1995	6.33	0.00	6.33	31.22	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-31	37.55	12/28/1995	5.90	0.00	5.90	31.65	NA
		01/22/1996	4.62	0.00	4.62	32.93	NA
		02/26/1996	4.92	0.00	4.92	32.63	NA
		03/25/1996	6.02	0.00	6.02	31.53	NA
		04/22/1996	5.57	0.00	5.57	31.98	NA
		05/28/1996	5.73	0.00	5.73	31.82	NA
		06/24/1996	6.72	0.00	6.72	30.83	NA
		07/22/1996	7.38	0.00	7.38	30.17	NA
		08/28/1996	8.02	0.00	8.02	29.53	NA
		09/23/1996	7.48	0.00	7.48	30.07	NA
		09/25/1996	8.96	0.00	8.96	28.59	NA
		10/28/1996	6.68	0.00	6.68	30.87	NA
		11/25/1996	4.92	0.00	4.92	32.63	NA
		12/23/1996	5.08	0.00	5.08	32.47	NA
		01/30/1997	NP		5.45	32.10	--
		04/21/1997	NP		5.73	31.82	--
		07/30/1997	NP		7.32	30.23	--
		10/14/1997	NP		7.19	30.36	--
		01/19/1998	NP		4.79	32.76	--
		04/21/1998	NP		6.31	31.24	--
		07/27/1998	NP		7.51	30.04	--
	35.66	11/17/1998	NP		8.38	27.28	--
		02/26/1999	NP		4.67	30.99	
		05/26/1999	NP		6.44	29.22	
		08/20/1999	NP		8.12	27.54	
		11/08/1999	NP		8.93	26.73	
		02/14/2000	NP		5.19	30.47	
		05/22/2000	NP		6.66	29.00	
Summary for Well MW-31 (37 detail records)						**SPH Recovered to Date:**	
MW-32	37.01	04/24/1995	NA		4.27	32.74	NA
		07/24/1995	NA		5.75	31.26	NA
		10/23/1995	NA		6.40	30.61	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-32	37.01	04/22/1996	NA		3.89	33.12	NA
		07/22/1996	NA		5.45	31.56	NA
		10/28/1996	NA		5.59	31.42	NA
		01/30/1997	NP		4.37	32.64	--
		04/21/1997	NP		4.02	32.99	--
		07/30/1997	NP		5.49	31.52	--
		10/14/1997	NP		5.57	31.44	--
		01/19/1998	NP		3.45	33.56	--
		04/21/1998	NP		4.52	32.49	--
		07/27/1998	NP		5.58	31.43	--
		11/17/1998	NP		6.34	30.67	--
		02/26/1999	NP		3.07	33.94	
		05/26/1999	NP		4.55	32.46	
		08/20/1999	NP		6.08	30.93	
		11/08/1999	NP		6.72	30.29	
		02/14/2000	NP		3.57	33.44	
		05/22/2000	NP		4.83	32.18	
Summary for Well	MW-32 (20 detail records)				SPH Recovered to Date:		
MW-33	39.34	04/24/1995	NA		19.93	19.41	NA
		07/24/1995	NA		20.68	18.66	NA
		10/23/1995	NA		21.05	18.29	NA
		01/22/1996	NA		19.07	20.27	NA
		04/22/1996	NA		19.48	19.86	NA
		07/22/1996	NA		20.26	19.08	NA
		10/28/1996	NA		20.58	18.76	NA
		01/30/1997	NP		18.92	20.42	--
		04/21/1997	NP		19.61	19.73	--
		07/30/1997	NP		20.03	19.31	--
		10/14/1997	NP		20.54	18.80	--
		01/19/1998	NP		19.40	19.94	--
		04/21/1998	NP		19.99	19.35	--
		07/27/1998	NP		20.45	18.89	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-33	39.34	11/17/1998	NP		20.93	18.41	--
		02/26/1999	NP		18.67	20.67	
		05/26/1999	NP		19.95		
		08/20/1999	NP		20.69		
		11/08/1999	NP		20.99		
		02/14/2000	NP		19.59		
		05/22/2000	NP		20.15		
Summary for Well	MW-33 (21 detail records)					**SPH Recovered to Date:**	
MW-34	39.67	04/24/1995	NA		19.40	20.27	NA
		07/24/1995	NA		19.99	19.68	NA
		10/23/1995	NA		20.26	19.41	NA
		01/22/1996	NA		18.71	20.96	NA
		04/22/1996	NA		19.43	20.24	NA
		07/22/1996	NA		19.74	19.93	NA
		10/28/1996	NA		20.18	19.49	NA
		01/30/1997	NP		18.78	20.89	--
		04/21/1997	NP		19.41	20.26	--
		07/30/1997	NP		19.76	19.91	--
		10/14/1997	NP		20.04	19.63	--
		01/19/1998	NP		19.92	19.75	--
		04/21/1998	NP		19.60	20.07	--
		07/27/1998	NP		20.03	19.64	--
		11/17/1998	NP		20.26	19.41	--
		02/26/1999	NP		18.54	21.13	
		05/26/1999	NP		19.62	20.05	
		08/20/1999	NP		20.13	19.54	
		11/08/1999	NP		20.41	19.26	
		02/14/2000	NP		19.31	20.36	
		05/22/2000	NP		19.75	19.92	
Summary for Well	MW-34 (21 detail records)					**SPH Recovered to Date:**	
MW-35	33.39	01/30/1997	NP		2.08	31.31	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-35	33.39	04/21/1997	NP		2.58	30.81	--
		10/14/1997	NP		4.03	29.36	--
		01/19/1998	NP		2.88	30.51	--
		04/21/1998	NP		2.71	30.68	--
		07/27/1998	NP		3.82	29.57	--
		11/17/1998	NP		5.09	28.30	--
		02/26/1999	NP		1.57	31.82	
		05/26/1999	NP		2.99	30.40	
		08/20/1999	NP		4.60	28.79	
		11/08/1999	NP		5.88	27.51	
		02/14/2000	NP		2.34	31.05	
		05/22/2000	NP		3.21	30.18	
Summary for Well MW-35 (13 detail records)					SPH Recovered to Date:		
MW-36	34.88	04/24/1995	NA		19.40	15.48	NA
		07/24/1995	NA		19.99	14.89	NA
		10/23/1995	NA		20.26	14.62	NA
		01/22/1996	NA		13.74	21.14	NA
		04/22/1996	NA		13.72	21.16	NA
		07/22/1996	NA		14.90	19.98	NA
		10/28/1996	NA		15.54	19.34	NA
		01/30/1997	NP		13.02	21.86	--
		04/21/1997	NP		13.98	20.90	--
		07/30/1997	NP		14.51	20.37	--
		10/14/1997	NP		15.15	19.73	--
		01/19/1998	NP		14.13	20.75	--
		04/21/1998	NP		14.33	20.55	--
		07/27/1998	NP		15.09	19.79	--
		11/17/1998	NP		15.59	19.29	--
		02/26/1999	NP		12.98	21.90	
		05/26/1999	NP		14.30	20.58	
		08/20/1999	NP		15.24	19.64	
		11/08/1999	NP		15.74	19.14	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			GATX				
MW-36	34.88	02/14/2000	NP		14.04	20.84	
		05/22/2000	NP		14.62	20.26	
Summary for Well MW-36 (21 detail records)					SPH Recovered to Date:		
MW-37	34.86	04/24/1995	NA		14.96	19.90	NA
		07/24/1995	NA		15.88	18.98	NA
		10/23/1995	NA		16.37	18.49	NA
		01/22/1996	NA		14.22	20.64	NA
		04/22/1996	NA		13.72	21.14	NA
		07/22/1996	NA		15.28	19.58	NA
		10/28/1996	NA		15.80	19.06	NA
		01/30/1997	NP		13.44	21.42	NA
		04/21/1997	NP		14.48	20.38	NA
		07/30/1997	NP		15.15	19.71	--
		10/14/1997	NP		15.76	19.10	--
		01/19/1998	NP		14.61	20.25	--
		04/21/1998	NP		14.98	19.88	--
		07/27/1998	NP		15.71	19.15	--
		11/17/1998	NP		16.24	18.62	--
		02/26/1999	NP		13.47	21.39	
		05/26/1999	NP		13.90	20.96	
		08/20/1999	NP		15.88	18.98	
		11/08/1999	NP		16.27	18.59	
		02/14/2000	NP		14.71	20.15	
		05/22/2000	NP		15.27	19.59	
Summary for Well MW-37 (21 detail records)					SPH Recovered to Date:		
MW-38	37.50	01/30/1997	NP		3.98	33.52	--
		04/21/1997	NP		4.84	32.66	--
		10/14/1997	NP		7.39	30.11	--
		01/19/1998	NP		4.76	32.74	--
		04/21/1998	NP		5.27	32.23	--
		07/27/1998	NP		6.89	30.61	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-38	37.50	11/17/1998	NP		7.98	29.52	--
		02/26/1999	NP		5.68	31.82	
	37.5	05/26/1999	NP		5.57	31.93	
		08/20/1999	NP		7.67	29.83	
		11/08/1999	NP		8.79	28.71	
		02/14/2000	NP		4.72	32.78	
		05/22/2000	NP		6.17	31.33	
Summary for Well MW-38 (13 detail records)					SPH Recovered to Date:		
MW-39	35.02	06/24/1996	13.01	0.00	13.01	22.01	NA
		07/22/1996	13.45	0.00	13.45	21.57	NA
		08/26/1996	13.90	0.00	13.90	21.12	NA
		09/23/1996	14.08	0.00	14.08	20.94	NA
		10/28/1996	14.00	0.00	14.00	21.02	NA
		11/25/1996	13.54	0.00	13.54	21.48	NA
		12/23/1996	12.77	0.00	12.77	22.25	NA
		01/30/1997	NM		NM		--
		04/21/1997	NM		NM		--
		10/14/1997	NP		13.99	21.03	--
		01/19/1998	NM		NM		--
		04/21/1998	NM		NM		--
		07/27/1998	NP		13.85	21.17	--
		11/17/1998	NP		14.36	20.66	--
		02/26/1999	NP		12.21	22.81	
		05/26/1999	NP		13.29	21.73	
		08/20/1999	NP		14.04	20.98	
		11/08/1999	NP		14.54	20.48	
		02/14/2000	NP				
		05/22/2000	NP		13.56	21.46	
Summary for Well MW-39 (20 detail records)					SPH Recovered to Date:		
MW-40	33.65	06/24/1996	13.81	0.00	13.81	19.84	NA
		07/22/1996	14.32	0.00	14.32	19.33	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				GATX			
MW-40	33.65	08/26/1996	14.77	0.00	14.77	18.88	NA
		09/23/1996	14.83	0.00	14.83	18.82	NA
		10/28/1996	14.63	0.00	14.63	19.02	NA
		11/25/1996	13.78	0.00	13.78	19.87	NA
		12/23/1996	13.37	0.00	13.37	20.28	NA
		01/30/1997	NP		12.74	20.91	--
		04/21/1997	NP		13.65	20.00	--
		07/30/1997	NP		14.24	19.41	--
		10/14/1997	NP		14.62	19.03	--
		01/19/1998	NP		13.28	20.37	--
		04/21/1998	NP		14.05	19.60	--
		07/27/1998	NP		14.70	18.95	--
		11/17/1998	NP		15.09	18.56	--
		02/26/1999	NP		12.56	21.09	
		05/26/1999	NP		13.99	19.66	
		08/20/1999	NP		14.79	18.86	
		11/08/1999	NP		15.09	18.56	
		02/14/2000	NP		13.64	20.01	
		05/22/2000	NP		14.28	19.37	
Summary for Well MW-40 (21 detail records)					SPH Recovered to Date:		

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-1	34.79	04/24/1995	17.42	0.49	17.91	16.46	NA
		05/22/1995	17.57	0.47	18.04	16.35	NA
		06/26/1995	17.75	0.48	18.23	16.15	NA
		07/24/1995	17.98	0.02	18.00	16.77	0.002
		08/28/1995	18.32	0.02	18.34	16.43	NA
		09/25/1995	18.37	0.14	18.51	16.16	NA
		10/23/1995	18.30	0.01	18.31	16.47	NA
		11/27/1995	17.94	0.03	17.97	16.79	0.01
		12/28/1995	16.75	0.16	16.91	17.74	0.85
		01/22/1996	16.73	0.12	16.85	17.84	0.01
		02/26/1996	13.40	0.02	13.42	21.35	0.08
		04/22/1996	16.20	0.15	16.35	18.31	0.01
		05/28/1996	16.21	0.00	16.21	18.58	NA
		06/24/1996	16.68	0.01	16.69	18.09	NA
		07/22/1996	17.20	0.02	17.22	17.55	NA
		08/23/1996	17.49	0.03	17.52	17.24	NA
		09/23/1996	17.72	0.01	17.73	17.05	NA
		10/28/1996	17.18	0.01	17.19	17.59	NA
		01/31/1997	15.94	0.16	16.10	18.55	NA
		04/21/1997	16.87	0.12	16.99	17.70	NA
		07/28/1997	17.15	0.65	17.80	16.44	NA
		10/14/1997	17.68	0.62	18.30	15.96	0.5
		01/19/1998	17.10	0.01	17.11	17.67	0.1
		04/20/1998	NP		17.17	17.62	0.1
		07/29/1998	17.44	0.01	17.45	17.33	0.1
	34.68	11/16/1998	NP		17.89	16.79	--
		02/23/1999	NP		16.19	18.49	
		05/18/1999	NP		16.79	17.89	
		08/17/1999	NP		17.37	17.31	
		11/11/1999	NP		17.69	16.99	
		02/14/2000	NP		16.82	17.86	
		05/22/2000	NP		17.05	17.63	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Tosco				
Summary for Well B-1 (32 detail records)					**SPH Recovered to Date:**		1.76
B-2	35.35	03/28/1995	NA		16.84	18.51	NA
		04/24/1995	NA		17.02	18.33	NA
		05/22/1995	NA		17.22	18.13	NA
		06/26/1995	NA		17.48	17.87	NA
		08/28/1995	19.58	0.26	19.84	15.29	NA
		09/25/1995	NA		18.18	17.17	NA
		10/23/1995	NA		18.15	17.20	NA
		12/28/1995	NA		16.56	18.79	NA
		01/22/1996	16.48	0.02	16.50	18.83	NA
		04/22/1996	NA		16.28	19.07	NA
		05/28/1996	NA		16.14	19.21	NA
		06/24/1996	NA		16.50	18.85	NA
		07/22/1996	NA		16.99	18.36	NA
		08/23/1996	NA		17.48	17.87	NA
		09/23/1996	NA		17.50	17.85	NA
		10/28/1996	NA		17.60	17.75	NA
		01/31/1997	NP		15.69	19.66	--
		04/21/1997	NP		16.52	18.83	--
		07/28/1997	NP		16.94	18.41	0.00
		10/14/1997	NP		17.57	17.78	--
		01/19/1998	NP		16.87	18.48	--
		04/20/1998	NP		16.93	18.42	--
		07/29/1998	NP		17.52	17.83	--
		11/16/1998	17.87	0.01	17.88	17.46	0
		02/23/1999	NP		15.90	19.45	
		05/18/1999	NP		16.64	18.71	
		08/17/1999	NP		17.45	17.90	
		11/11/1999	NP		17.86	17.49	
		02/14/2000	NP		16.68	18.67	
		05/22/2000	NP		17.06	18.29	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Tosco				
Summary for Well B-2 (30 detail records)					SPH Recovered to Date:		0.00
B-3	36.79	01/31/1997	NP		17.26	19.53	--
		04/21/1997	NP		18.48	18.31	--
		07/28/1997	NP		18.83	17.96	--
		10/14/1997	NP		19.38	17.41	--
		01/19/1998	NP		18.25	18.54	--
		04/20/1998	NP		18.86	17.93	--
		07/29/1998	NP		18.84	17.95	--
	34.81	11/16/1998	NP		19.24	15.57	--
		02/23/1999	NP		17.21	17.60	
		05/18/1999	NP		18.01	16.80	
		08/17/1999	NP		18.79	16.02	
		11/11/1999	NP		19.15	15.66	
		02/14/2000	NP		18.14	16.67	
		05/22/2000	NP		18.36	16.45	
Summary for Well B-3 (14 detail records)					SPH Recovered to Date:		
B-4	34.79	03/28/1995	17.92	0.71	18.63	15.56	NA
		04/24/1995	18.01	1.16	19.17	14.63	NA
		05/22/1995	18.11	1.13	19.24	14.59	NA
		06/26/1995	18.27	1.01	19.28	14.65	NA
		07/24/1995	18.53	0.11	18.64	16.06	0.15
		08/28/1995	18.62	0.01	18.63	16.15	NA
		09/25/1995	18.82	0.13	18.95	15.73	NA
		10/23/1995	18.83	0.02	18.85	15.92	NA
		11/27/1995	18.56	0.06	18.62	16.12	0.37
		01/22/1996	17.60	0.04	17.64	17.12	0.24
		02/26/1996	NA		13.68	21.11	NA
		04/22/1996	16.35	0.09	16.44	18.27	0.02
		05/28/1996	16.35	0.07	16.42	18.31	0.02
		08/23/1996	18.35	0.00	18.35	16.44	NA
		09/23/1996	18.44	0.01	18.45	16.33	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-4	34.79	10/28/1996	17.56	1.03	18.59	15.32	NA
		01/31/1997	17.00	0.48	17.48	16.90	3.25
		04/21/1997	NP		17.71	17.08	0.1
		07/28/1997	18.50	0.02	18.52	16.25	0.1
		10/15/1997	18.55	0.01	18.56	16.22	1.5
		01/19/1998	17.91	0.06	17.97	16.77	1.5
		04/20/1998	17.95	0.05	18.00	16.75	1.2
		07/29/1998	18.13	0.01	18.14	16.64	1.3
	34.70	11/16/1998	NP		18.49	16.21	--
		02/23/1999	16.89	1.04	17.93	15.89	
		05/18/1999	17.51	0.01	17.52	17.17	0.1
	34.7	08/17/1999	NP		18.04	16.66	
		11/11/1999	NP		18.41	16.29	
		02/14/2000	17.59	0.66	18.25	15.89	3
	34.70	05/22/2000	NP		17.80	16.90	0.50
Summary for Well B-4 (30 detail records)					SPH Recovered to Date:		13.35
B-5	34.79	01/22/1996	NA		16.18	18.61	NA
		02/26/1996	NA		14.40	20.39	NA
		05/28/1996	NA		15.59	19.20	NA
		06/24/1996	DRY		DRY		DRY
		07/22/1996	DRY		DRY		DRY
		08/23/1996	DRY		DRY		DRY
		09/23/1996	NA		17.02	17.77	NA
		10/28/1996	NA		17.10	17.69	NA
	34.83	01/31/1997	NP		15.30	19.53	--
		04/21/1997	NP		16.08	18.75	--
		07/28/1997	NP		16.54	18.29	0.00
		10/14/1997	NP		17.10	17.73	--
		01/19/1998	NP		16.54	18.29	--
		04/20/1998	NP		16.48	18.35	--
		07/29/1998	NP		16.79	18.04	--
		11/16/1998	NP		17.35	17.48	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-5	34.83	02/23/1999	NP		15.56	19.27	
		05/18/1999	NP		18.17	16.66	
		08/17/1999	NP		16.93	17.90	
		11/11/1999	NP		17.29	17.54	
		02/14/2000	NP		16.24	18.59	
		05/22/2000	NP		16.63	18.20	
Summary for Well B-5 (22 detail records)					**SPH Recovered to Date:**		**0.00**
B-6	35.41	01/22/1996	NP		16.44	18.97	NA
		02/26/1996	NP		15.60	19.81	NA
		04/22/1996	NA		16.15	19.26	NA
		05/28/1996	NA		16.11	19.30	NA
		06/24/1996	NA		16.47	18.94	NA
		07/22/1996	NA		16.91	18.50	NA
		08/23/1996	NA		17.99	17.42	NA
		09/23/1996	NA		17.45	17.96	NA
		10/28/1996	NA		17.34	18.07	NA
		01/31/1997	NP		15.47	19.94	--
		04/21/1997	NP		16.31	19.10	--
		07/28/1997	NP		16.87	18.54	0.00
		10/14/1997	NP		17.47	17.94	--
		01/19/1998	NP		16.85	18.56	--
		04/20/1998	NP		16.78	18.63	--
		07/29/1998	NP		17.16	18.25	--
	35.49	11/16/1998	NP		17.79	17.70	--
		02/23/1999	NP		15.70	19.79	
		05/18/1999	NP		16.48	19.01	
		08/17/1999	NP		17.35	18.14	
		11/11/1999	NP		17.7	17.79	
		02/14/2000	NP		16.53	18.96	
		05/22/2000	NP		16.95	18.54	
Summary for Well B-6 (23 detail records)					**SPH Recovered to Date:**		**0.00**

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-16	35.82	03/24/1995	NA		16.99	18.83	NA
		04/24/1995	NA		17.12	18.70	NA
		05/22/1995	NA		17.37	18.45	NA
		06/19/1995	NA		17.59	18.23	NA
		07/24/1995	NA		17.89	17.93	NA
		08/28/1995	NA		18.10	17.72	NA
		09/25/1995	NA		18.35	17.47	NA
		10/23/1995	NA		18.30	17.52	NA
		11/27/1995	NA		17.90	17.92	NA
		01/22/1996	NA		0.00		NA
		02/26/1996	NA		13.30	22.52	NA
		04/22/1996	NA		16.04	19.78	NA
		05/28/1996	NA		16.39	19.43	NA
		06/24/1996	NA		16.71	19.11	NA
		07/22/1996	NA		17.19	18.63	NA
		09/23/1996	NA		17.76	18.06	NA
		10/28/1996	NA		17.82	18.00	NA
		01/31/1997	NP		15.75	20.07	--
		04/21/1997	NP		16.65	19.17	--
		07/28/1997	NP		17.15	18.67	0.00
		10/14/1997	NP		17.79	18.03	--
		01/19/1998	NP		17.16	18.66	--
		04/20/1998	NP		17.07	18.75	--
		07/29/1998	NP		17.66	18.16	--
		11/16/1998	NP		18.12	17.70	--
		02/23/1999	NP		16.02	19.80	
		05/18/1999	NP		16.77	19.05	
		08/17/1999	NP		17.62	18.20	
		11/11/1999	NP		18.06	17.76	
		02/14/2000	NP		16.84	18.98	
		05/22/2000	NP		17.27	18.55	
Summary for Well B-16 (31 detail records)					**SPH Recovered to Date:**		**0.00**

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-17	35.59	03/28/1995	16.95	0.00	16.95	18.64	NA
		04/24/1995	NA		17.15	18.44	NA
		05/22/1995	17.36	0.00	17.36	18.23	NA
		06/26/1995	17.61	0.00	17.61	17.98	NA
		07/24/1995	17.79	0.01	17.80	17.78	NA
		08/28/1995	18.78	0.01	18.79	16.79	NA
		09/25/1995	NA		18.23	17.36	NA
		10/23/1995	NA		18.21	17.38	NA
		11/27/1995	17.85	0.00	17.85	17.74	NA
		12/28/1995	NA		16.85	18.74	NA
		01/22/1996	NA		16.78	18.81	NA
		02/26/1996	13.35	0.01	13.36	22.22	NA
		04/22/1996	16.44	0.00	16.44	19.15	NA
		05/28/1996	16.40	0.00	16.40	19.19	NA
		06/24/1996	16.40	0.00	16.40	19.19	NA
		07/22/1996	17.16	0.00	17.16	18.43	NA
		08/23/1996	17.57	0.00	17.57	18.02	NA
		09/23/1996	NA		17.68	17.91	NA
		10/28/1996	NA		17.75	17.84	NA
		01/31/1997	NP		15.86	19.73	--
		04/21/1997	NP		16.66	18.93	--
		07/28/1997	NP		17.15	18.44	0.00
		10/14/1997	NP		17.74	17.85	--
		01/19/1998	NP		17.17	18.42	--
		04/20/1998	NP		17.06	18.53	--
		07/29/1998	NP		17.54	18.05	--
	35.61	11/16/1998	NP		18.02	17.59	0.2
		02/23/1999	NP		17.10	18.51	
		05/18/1999	NP		16.76	18.85	
		08/17/1999	NP		17.55	18.06	
		11/11/1999	NP		17.95	17.66	
		02/14/2000	NP		16.83	18.78	
		05/22/2000	NP		17.20	18.41	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Tosco				
Summary for Well B-17 (33 detail records)					SPH Recovered to Date:		0.20
B-18	35.79	03/28/1995	NA		19.28	16.51	NA
		04/24/1995	NA		19.38	16.41	NA
		05/22/1995	NA		19.44	16.35	NA
		06/26/1995	NA		19.56	16.23	NA
		07/24/1995	NA		19.74	16.05	NA
		08/28/1995	NA		19.43	16.36	NA
		09/25/1995	NA		20.02	15.77	NA
		10/23/1995	NA		20.08	15.71	NA
		12/28/1995	NA		18.66	17.13	NA
		01/22/1996	0	0.00	18.20	2.12	NA
		02/26/1996	0	0.00	18.38	1.79	NA
		04/22/1996	NA		18.50	17.29	NA
		05/28/1996	NA		17.84	17.95	NA
		06/24/1996	NA		18.35	17.44	NA
		07/22/1996	NA		18.97	16.82	NA
		08/23/1996	NA		17.50	18.29	NA
		09/23/1996	NA		19.43	16.36	NA
		10/28/1996	NA		19.47	16.32	NA
		01/31/1997	NP		18.09	17.70	--
		04/21/1997	NP		18.94	16.85	--
		07/28/1997	NP		19.14	16.65	--
		10/14/1997	NP		19.64	16.15	--
		01/19/1998	NP		19.03	16.76	--
		04/20/1998	NP		18.92	16.87	--
		07/29/1998	NP		19.04	16.75	--
	35.49	11/16/1998	NP		19.36	16.13	--
		02/23/1999	NP		17.88	17.61	
		05/18/1999	NP		18.38	17.11	0.1
		08/17/1999	NP		18.90	16.59	
		11/11/1999	NP		19.27	16.22	
		02/14/2000	NP		18.55	16.94	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-18	35.49	05/22/2000	NP		18.66	16.83	
Summary for Well B-18 (32 detail records)					SPH Recovered to Date:		0.10
B-22	35.83	03/28/1995	NA		18.50	17.33	NA
		04/24/1995	NA		19.10	16.73	NA
		05/22/1995	NA		19.09	16.74	NA
		06/26/1995	NA		19.26	16.57	NA
		09/25/1995	NA		20.50	15.33	NA
		10/23/1995	NA		19.96	15.87	NA
		12/28/1995	NA		18.59	17.24	0.02
		01/22/1996	NA		18.88	16.95	NA
		02/26/1996	NA		12.05	23.78	NA
		04/22/1996	NA		17.75	18.08	NA
		05/28/1996	NA		17.31	18.52	NA
		06/24/1996	NA		18.12	17.71	NA
		07/22/1996	NA		19.09	16.74	NA
		08/23/1996	NA		19.03	16.80	NA
		09/23/1996	NA		19.79	16.04	NA
		10/28/1996	NA		19.75	16.08	NA
		01/31/1997	17.92	0.01	17.93	17.89	0.1
		04/21/1997	NP		18.67	17.16	--
		07/28/1997	18.89	2.26	21.15	12.76	1.0
		10/14/1997	19.56	0.04	19.60	16.20	1.75
		01/19/1998	18.55	1.35	19.90	14.78	4.0
		04/20/1998	18.80	0.76	19.56	15.62	2.6
		07/29/1998	NP		18.56	17.27	--
		11/16/1998	NP		19.10	16.73	0.1
		02/23/1999	NP		17.09	18.74	
		05/18/1999	NP		17.69	18.14	0.1
		08/17/1999	NP		18.35	17.48	
		11/11/1999	18.85	0.07	18.92	16.85	
		02/14/2000	NP		17.91	17.92	1
		05/22/2000	NP		18.00	17.83	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Tosco				
Summary for Well B-22 (30 detail records)					**SPH Recovered to Date:**		10.67
B-25	37.60	04/21/1997	NP		15.29	22.31	--
		10/14/1997	NP		19.75	17.85	--
		01/19/1998	NP		19.05	18.55	--
		04/20/1998	NP		19.08	18.52	--
		07/29/1998	NP		19.02	18.58	--
	35.78	11/16/1998	NP		19.50	16.28	--
		02/23/1999	NP		17.49	18.29	
		05/18/1999	NP		18.02	17.76	
		08/17/1999	NP		18.78	17.00	
		11/11/1999	NP		19.31	16.47	
		02/14/2000	NP		18.39	17.39	
		05/22/2000	NP		17.67	18.11	
Summary for Well B-25 (12 detail records)					**SPH Recovered to Date:**		
B-27	35.74	03/28/1995	17.25	0.27	17.52	17.99	NA
		04/24/1995	17.70	0.31	18.01	17.47	NA
		05/22/1995	17.85	0.32	18.17	17.30	NA
		06/26/1995	17.91	1.12	19.03	15.76	NA
		07/24/1995	18.11	1.14	19.25	15.52	NA
		08/28/1995	18.75	0.50	19.25	16.07	NA
		09/25/1995	18.50	1.10	19.60	15.21	NA
		10/23/1995	18.59	1.10	19.69	15.12	NA
		11/27/1995	18.50	0.30	18.80	16.68	0.8
		01/22/1996	17.44	0.43	17.87	17.50	0.78
		02/26/1996	13.38	0.31	13.69	21.79	0.25
		04/22/1996	16.68	0.27	16.95	18.56	0.12
		08/23/1996	18.12	0.56	18.68	16.58	0.31
		09/23/1996	18.34	0.36	18.70	16.73	NA
		10/28/1996	18.58	0.11	18.69	16.96	NA
		01/31/1997	16.43	2.20	18.63	15.24	4.0
		04/21/1997	17.37	0.13	17.50	18.13	0.6

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-27	35.74	07/25/1997	NP		17.86	17.88	--
		10/15/1997	18.52	0.01	18.53	17.20	0.75
		01/19/1998	NP		17.94	17.80	6.0
		04/20/1998	17.86	0.01	17.87	17.86	1.1
		07/29/1998	18.19	0.02	18.21	17.51	0.2
		11/16/1998	18.65	0.59	19.24	16.00	0.6
		02/23/1999	16.63	1.55	18.18	16.24	
		05/18/1999	17.36	0.01	17.37	18.36	0.1
		08/17/1999	NP		17.98	17.76	
		11/11/1999	NP		18.53	17.21	
		02/14/2000	NP		17.61	18.13	
		05/22/2000	NP		17.76	17.98	
Summary for Well: B-27 (29 detail records)					**SPH Recovered to Date:**		**15.61**
B-35	33.58	04/24/1995	16.10	0.23	16.33	17.05	NA
		05/22/1995	16.24	0.19	16.43	16.99	NA
		06/26/1995	16.45	0.23	16.68	16.70	NA
		07/24/1995	16.65	0.21	16.86	16.54	NA
		08/28/1995	17.35	0.17	17.52	15.92	NA
		09/25/1995	17.02	0.30	17.32	16.00	NA
		10/23/1995	16.94	0.21	17.15	16.25	NA
		11/27/1995	16.50	0.06	16.56	16.97	0.08
		12/28/1995	15.60	0.01	15.61	17.96	0.02
		01/22/1996	15.52	0.05	15.57	17.97	NA
		02/26/1996	13.50	0.05	13.55	19.99	NA
		04/22/1996	17.78	0.06	17.84	15.69	NA
		05/28/1996	15.08	0.00	15.08	18.50	NA
		06/24/1996	NA		15.54	18.04	NA
		07/22/1996	NA		16.06	17.52	NA
		08/23/1996	NA		16.85	16.73	NA
		09/23/1996	NA		16.60	16.98	NA
		10/28/1996	16.85	0.06	16.91	16.62	NA
		01/31/1997	NP		14.84	18.74	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-35	33.58	04/21/1997	NP		15.74	17.84	--
		07/28/1997	NP		16.05	17.53	--
		10/14/1997	NP		16.57	17.01	--
		01/19/1998	NP		15.95	17.63	--
		04/20/1998	NP		16.04	17.54	--
		07/29/1998	NP		16.31	17.27	--
	33.56	11/16/1998	NP		16.69	16.87	--
		02/23/1999	NP		15.08	18.48	
		05/18/1999	NP		15.68	17.88	
		08/17/1999	NP		16.23	17.33	
		11/11/1999	NP		16.57	16.99	
		02/14/2000	NP		15.71	17.85	
		05/22/2000	NP		16.00	17.56	
Summary for Well B-35 (32 detail records)					SPH Recovered to Date:		0.10
B-36	30.97	03/28/1995	NA		14.65	16.32	NA
		04/24/1995	NA		14.95	16.02	NA
		05/22/1995	NA		15.03	15.94	NA
		06/26/1995	NA		15.24	15.73	NA
		07/24/1995	NA		15.47	15.50	NA
		08/28/1995	NA		15.35	15.62	NA
		09/25/1995	NA		15.82	15.15	NA
		10/23/1995	NA		15.60	15.37	NA
		12/28/1995	NA		13.91	17.06	NA
		01/22/1996	0	0.00	13.93	5.20	NA
		02/26/1996	0	0.00	10.75	11.08	NA
		04/22/1996	NA		14.10	16.87	NA
		05/28/1996	NA		13.01	17.96	NA
		06/24/1996	NA		13.84	17.13	NA
		07/22/1996	NA		15.01	15.96	NA
		08/23/1996	NA		15.81	15.16	NA
		09/23/1996	NA		15.65	15.32	NA
		10/28/1996	NA		15.55	15.42	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-36	30.97	01/31/1997	NP		13.44	17.53	--
		04/21/1997	NP		14.66	16.31	--
		07/28/1997	NP		15.01	15.96	--
		10/14/1997	NP		15.55	15.42	--
		01/19/1998	NP		14.43	16.54	--
		04/20/1998	NP		15.06	15.91	--
		07/29/1998	NP		18.07	12.90	--
	31.02	11/16/1998	NP		15.46	15.56	--
		02/23/1999	NP		13.12	17.90	
		05/18/1999	NP		14.23	16.79	
		08/17/1999	NP		15.01	16.01	
		11/11/1999	NP		15.40	15.62	
		02/14/2000	NP		14.33	16.69	
		05/22/2000	NP		14.64	16.38	
Summary for Well B-36 (32 detail records)						SPH Recovered to Date:	
B-37	35.24	03/28/1995	NA		18.51	16.73	NA
		04/24/1995	NA		19.66	15.58	NA
		05/22/1995	NA		19.62	15.62	NA
		06/26/1995	NA		19.75	15.49	NA
		07/24/1995	NA		20.08	15.16	NA
		08/28/1995	NA		20.10	15.14	NA
		09/25/1995	20.41	0.01	20.42	14.81	NA
		10/23/1995	20.44	0.01	20.45	14.78	NA
		11/27/1995	19.90	0.00	19.90	15.34	NA
		12/28/1995	19.66	0.00	19.66	15.58	NA
		01/22/1996	18.20	0.03	18.23	16.98	NA
		02/26/1996	NA		14.15	21.09	NA
		04/22/1996	NA		18.90	16.34	NA
		05/28/1996	NA		17.94	17.30	NA
		06/24/1996	NA		19.13	16.11	NA
		07/22/1996	NA		20.13	15.11	NA
		08/23/1996	NA		20.15	15.09	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-37	35.24	09/23/1996	NA		20.76	14.48	NA
		10/28/1996	NA		20.87	14.37	NA
		01/31/1997	NP		19.29	15.95	2.0
		04/21/1997	NP		19.98	15.26	0.0
		07/28/1997	NP		20.30	14.94	--
		10/14/1997	NP		20.86	14.38	--
		01/19/1998	NP		19.95	15.29	--
		04/20/1998	NP		20.22	15.02	--
		07/29/1998	NP		19.60	15.64	--
	35.83	11/16/1998	NP		20.23	15.60	--
		02/23/1999	NP		11.03	24.80	
		05/18/1999	NP		18.56	17.27	
		08/17/1999	NP		19.41	16.42	
		11/11/1999	NP		19.89	15.94	
		02/14/2000	NP		18.96	16.87	
		05/22/2000	NP		19.05	16.78	
Summary for Well B-37 (33 detail records)					SPH Recovered to Date:		2.00
B-38	34.75	03/28/1995	18.95	1.95	20.90	12.19	NA
		04/24/1995	19.17	1.51	20.68	12.79	NA
		05/22/1995	19.13	1.45	20.58	12.94	NA
		06/26/1995	19.30	1.16	20.46	13.30	NA
		07/24/1995	19.75	0.17	19.92	14.69	0.2
		08/28/1995	19.82	0.71	20.53	13.62	NA
		09/25/1995	19.99	1.03	21.02	12.85	NA
		10/23/1995	20.00	1.03	21.03	12.84	NA
		11/27/1995	19.50	0.32	19.82	14.66	0.81
		01/22/1996	18.89	0.14	19.03	15.60	0.45
		02/26/1996	13.70	0.37	14.07	20.37	1.31
		04/22/1996	18.63	0.25	18.88	15.66	NA
		07/22/1996	19.59	1.25	20.84	12.85	NA
		08/23/1996	18.70	0.03	18.73	15.99	NA
		09/23/1996	20.18	0.78	20.96	13.13	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-38	34.75	10/28/1996	20.18	0.70	20.88	13.28	NA
		01/31/1997	18.80	0.45	19.25	15.12	2.0
		04/21/1997	19.39	0.64	20.03	14.18	0.6
		07/25/1997	19.78	0.21	19.99	14.58	0.75
		10/14/1997	20.30	0.01	20.31	14.43	1.5
		01/19/1998	NM		NM		--
Summary for Well B-38 (21 detail records)					**SPH Recovered to Date:**		**7.62**
B-40	33.19	03/28/1995	17.55	0.09	17.64	15.47	NA
		04/24/1995	17.84	0.12	17.96	15.13	NA
		05/22/1995	17.75	0.11	17.86	15.24	NA
		06/26/1995	17.95	0.11	18.06	15.04	NA
		08/28/1995	18.40	0.01	18.41	14.77	NA
		09/25/1995	NA		18.77	14.42	NA
		10/23/1995	18.74	0.01	18.75	14.43	NA
		11/27/1995	17.98	0.02	18.00	15.17	NA
		12/28/1995	17.23	0.00	17.23	15.96	NA
		01/22/1996	NA		16.40	16.79	NA
		02/26/1996	NA		12.75	20.44	NA
		04/22/1996	17.01	0.00	17.01	16.18	NA
		05/28/1996	15.78	0.29	16.07	16.87	NA
		06/24/1996	16.99	0.15	17.14	15.92	0.23
		07/22/1996	18.32	0.12	18.44	14.65	0.01
		08/23/1996	18.87	0.06	18.93	14.21	0.02
		09/23/1996	19.06	0.06	19.12	14.02	NA
		10/28/1996	NA		19.02	14.17	NA
		01/31/1997	16.76	0.54	17.30	15.43	NA
		04/21/1997	17.79	0.02	17.81	15.36	0.4
		07/25/1997	18.86	0.04	18.90	14.26	1.5
		10/14/1997	NP		19.89	13.30	0.25
		01/19/1998	NP		17.53	15.66	--
		04/20/1998	NP		18.45	14.74	--
		07/29/1998	18.25	0.37	18.62	14.26	4.0

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-40	34.70	11/16/1998	18.55	1.14	19.69	14.04	3.0
		02/23/1999	16.25	0.89	17.14	16.80	
		05/18/1999	17.10	0.14	17.24	17.34	1.2
	34.7	08/17/1999	17.92	1.08	19.00	14.78	1.0
		11/11/1999	18.36	1.03	19.39	14.43	1.25
		02/14/2000	NP		17.34	17.36	1
		05/22/2000	17.48	0.80	18.28	15.74	5.50
Summary for Well B-40 (32 detail records)					SPH Recovered to Date:		19.36
B-41	34.85	03/28/1995	18.80	0.08	18.88	15.90	NA
		04/24/1995	18.93	0.06	18.99	15.81	NA
		05/22/1995	18.95	0.07	19.02	15.77	NA
		06/26/1995	19.11	0.06	19.17	15.63	NA
		08/28/1995	18.55	0.70	19.25	15.01	NA
		09/25/1995	19.73	0.20	19.93	14.75	NA
		10/23/1995	19.70	0.60	20.30	14.04	NA
		11/27/1995	18.50	0.15	18.65	16.07	0.23
		01/22/1996	17.38	0.04	17.42	17.40	0.18
		02/26/1996	13.40	0.41	13.81	20.69	NA
		04/22/1996	12.75	0.23	12.98	21.67	NA
		09/23/1996	19.38	0.02	19.40	15.43	0.06
		10/28/1996	19.87	0.08	19.95	14.83	NA
		01/31/1997	NP		18.31	16.54	--
		04/21/1997	18.51	0.03	18.54	16.28	0.2
		07/25/1997	18.13	0.70	18.83	15.43	0.1
		10/14/1997	NP		19.40	15.45	--
		01/19/1998	NM		NM		--
		04/20/1998	18.52	0.11	18.63	16.13	1.5
		07/29/1998	NP		18.32	16.53	--
	34.63	11/16/1998	NP		18.79	15.84	--
		02/23/1999	NP		16.92	17.71	
		05/18/1999	NP		17.46	17.17	0.1
		08/17/1999	NP		18.20	16.43	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
B-41	34.63	11/11/1999	NP		18.64	15.99	
		02/14/2000	NP		17.73	16.90	
		05/22/2000	NP		18.89	15.74	
Summary for Well B-41 (27 detail records)					SPH Recovered to Date:		2.37
DW-1	35.93	01/26/1998	NP		19.56	16.37	--
		07/29/1998	NP		19.37	16.56	--
		02/23/1999	NP		18.07	17.86	
		05/18/1999	NP		18.58	17.35	
		08/17/1999	NP		19.23	16.70	
		11/11/1999	NP		19.67	16.26	
		02/14/2000	NP		18.87	17.06	
		05/22/2000	NP		18.94	16.99	
Summary for Well DW-1 (8 detail records)					SPH Recovered to Date:		
DW-2	36.05	01/27/1998	NP		19.65	16.40	--
		07/29/1998	NP		19.52	16.53	--
		02/23/1999	NP		18.16	17.89	
		05/18/1999	NP		18.65	17.40	
		08/17/1999	NP		19.31	16.74	
		11/11/1999	NP		19.76	16.29	
		02/14/2000	NP		18.91	17.14	
		05/22/2000	NP		19.03	17.02	
Summary for Well DW-2 (8 detail records)					SPH Recovered to Date:		
EX-39	33.92	03/28/1995	18.14	0.04	18.18	15.71	NA
		04/24/1995	18.31	0.03	18.34	15.55	NA
		05/22/1995	18.28	0.03	18.31	15.58	NA
		06/26/1995	18.43	0.09	18.52	15.32	NA
		07/24/1995	18.73	0.13	18.86	14.95	NA
		08/28/1995	18.95	0.11	19.06	14.77	NA
		09/25/1995	19.08	0.14	19.22	14.58	NA
		10/23/1995	19.09	0.20	19.29	14.46	NA

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
EX-39	33.92	11/27/1995	19.55	0.07	19.62	14.24	0.11
		12/28/1995	18.05	0.18	18.23	15.54	0.04
		01/22/1996	17.03	0.07	17.10	16.76	0.01
		02/26/1996	13.54	0.46	14.00	19.53	0.03
		04/22/1996	18.65	0.08	18.73	15.12	0.9
		05/28/1996	16.64	0.12	16.76	17.06	0.02
		06/24/1996	17.67	0.72	18.39	14.92	0.03
		07/22/1996	18.68	0.03	18.71	15.18	0.01
		08/23/1996	19.18	0.87	20.05	13.13	0.4
		09/23/1996	19.42	0.09	19.51	14.33	NA
		10/28/1996	19.25	0.04	19.29	14.60	NA
		01/31/1997	18.27	0.91	19.18	13.97	2.0
		04/21/1997	18.43	0.10	18.53	15.31	0.4
		07/25/1997	18.72	0.97	19.69	13.41	2.75
		10/15/1997	19.45	0.76	20.21	13.06	3.3
		01/19/1998	18.39	0.58	18.97	14.46	1.0
		04/20/1998	18.51	2.15	20.66	11.43	3.5
	33.09	07/29/1998	17.71	0.75	18.46	13.99	28.0
		11/16/1998	NP		19.45	13.64	--
		02/23/1999	16.79	0.09	16.88	16.13	
		05/18/1999	16.81	0.46	17.27	15.43	3.5
		08/17/1999	17.60	0.43	18.03	14.69	0.6
		11/11/1999	18.02	0.83	18.85	13.53	1.5
		02/14/2000	17.09	0.33	17.42	15.39	10
		05/22/2000	17.29	0.06	17.35	15.69	5.00
Summary for Well EX-39 (33 detail records)						SPH Recovered to Date:	**63.10**
IF-1		02/23/1999	NP		18.71		
		08/17/1999	NP		19.93		
		11/11/1999	NP		20.30		
		02/14/2000	NP		19.46		
		05/22/2000	NP		19.59		

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Tosco				
Summary for Well IF-1 (5 detail records)					SPH Recovered to Date:		
IF-2		02/23/1999	NP		18.76		
		05/18/1999	NP		19.22		
		08/17/1999	NP		19.98		
		11/11/1999	NP		20.32		
		02/14/2000	NP		19.56		
		05/22/2000	NP		19.63		
Summary for Well IF-2 (6 detail records)					SPH Recovered to Date:		
IT-E	36.44	01/31/1997	18.85	0.62	19.47	16.44	0.5
		04/21/1997	19.69	0.63	20.32	15.58	0.3
		07/28/1997	20.05	0.60	20.65	15.28	2.0
		10/14/1997	20.69	0.03	20.72	15.69	0.8
		01/19/1998	19.79	0.01	19.80	16.63	--
		04/22/1998	NP		19.83	16.61	--
		07/29/1998	NP		19.70	16.74	--
	36.07	11/16/1998	NP		20.13	15.94	--
		02/23/1999	NP		18.20	17.87	
		05/18/1999	NP		18.78	17.29	
		08/17/1999	NP		19.70	16.37	
		11/11/1999	NP		19.92	16.15	
		02/14/2000	NP		19.01	17.06	
		05/22/2000	NP		19.03	17.04	
Summary for Well IT-E (14 detail records)					SPH Recovered to Date:		3.60
IT-W	35.99	01/31/1997	NP		16.65	19.34	--
		04/21/1997	NP		17.44	18.55	--
		07/28/1997	NP		17.81	18.18	--
		10/14/1997	NP		18.33	17.66	--
		01/19/1998	NP		17.72	18.27	--
		04/20/1998	NP		17.81	18.18	--
		07/29/1998	NP		18.08	17.91	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
IT-W	35.99	11/16/1998	NP		18.49	17.50	–
		02/23/1999	NP		16.85	19.14	
		05/18/1999	NP		17.47	18.52	
		08/17/1999	NP		18.05	17.94	
		11/11/1999	NP		18.37	17.62	
		02/14/2000	NP		17.46	18.53	
		05/22/2000	NP		17.75	18.24	
Summary for Well IT-W (14 detail records)					**SPH Recovered to Date:**		
OF-1	-	02/23/1999	NP		17.88		
		05/18/1999	NP		18.40		
		08/17/1999	NP		19.11		
		11/11/1999	NP		19.48		
		02/14/2000	NP		18.64		
		05/22/2000	NP		18.78		
Summary for Well OF-1 (6 detail records)					**SPH Recovered to Date:**		
OF-2	-	02/23/1999	NP		18.04		
		05/18/1999	NP		18.52		
		08/17/1999	NP		19.25		
		11/11/1999	NP		19.63		
		02/14/2000	NP		18.8		
		05/22/2000	NP		18.92		
Summary for Well OF-2 (6 detail records)					**SPH Recovered to Date:**		
P-1	18.24	11/16/1998	NP		9.43	8.81	
		02/23/1999	NP		5.99	12.25	
		05/18/1999	NP		5.49	12.75	
		11/11/1999	NP		6.99	11.25	
		02/14/2000	NP		6.26	11.98	
		05/22/2000	NP		6.89	11.35	
Summary for Well P-1 (6 detail records)					**SPH Recovered to Date:**		
P-2	17.85	11/16/1998	NP		5.17	12.68	

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
P-2	17.85	02/23/1999	NP		3.78	14.07	
		05/18/1999	NP		3.81	14.04	
		11/11/1999	NP		5.07	12.78	
		02/14/2000	NP		4.18	13.67	
		05/22/2000	NP		4.66	13.19	
Summary for Well P-2 (6 detail records)					**SPH Recovered to Date:**		
RES-N	38.58	03/28/1995	23.14	0.76	23.90	14.03	NA
		04/24/1995	23.17	1.74	24.91	12.19	NA
		05/22/1995	23.17	0.75	23.92	14.02	NA
		06/26/1995	23.26	0.75	24.01	13.93	NA
		08/28/1995	23.64	0.68	24.32	13.68	NA
		09/25/1995	23.75	0.50	24.25	13.90	NA
		10/23/1995	23.80	0.60	24.40	13.67	NA
		11/27/1995	23.26	0.60	23.86	14.21	1.59
		12/28/1995	22.59	0.02	22.61	15.95	1.21
		01/22/1996	20.91	0.03	20.94	17.61	5.0
		02/26/1996	23.34	0.76	24.10	13.83	41.25
		04/22/1996	22.14	0.02	22.16	16.40	NA
		05/28/1996	21.11	0.00	21.11	17.47	NA
		06/24/1996	22.41	0.00	22.41	16.17	NA
		07/22/1996	22.88	0.00	22.88	15.70	NA
		07/24/1996	23.45	0.76	24.21	13.72	NA
		08/23/1996	NA		22.21	16.37	NA
		09/23/1996	23.74	0.02	23.76	14.80	NA
		10/28/1996	NA		24.32	14.26	NA
		01/31/1997	22.45	0.09	22.54	15.96	2.0
		04/21/1997	23.00	0.01	23.01	15.56	NA
		07/28/1997	23.46	0.02	23.48	15.08	0.1
		10/14/1997	23.84	0.02	23.86	14.70	1.3
		01/19/1998	NM		NM		--
		04/20/1998	NP		21.65	16.93	--
		07/29/1998	NP		21.41	17.17	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
RES-N	38.58	11/16/1998	NP		21.98	16.60	–
		02/23/1999	NP		20.15	18.43	
		05/18/1999	NP		20.64	17.94	
		08/17/1999	NP		21.3	17.28	
		11/11/1999	NP		21.75	16.83	
		02/14/2000	NP		20.90	17.68	
		05/22/2000	NP		21.01	17.57	
Summary for Well	RES-N (33 detail records)					**SPH Recovered to Date:**	**52.45**
RES-O	36.03	03/28/1995	17.61	0.04	17.65	18.35	NA
		04/24/1995	17.78	0.02	17.80	18.21	NA
		05/22/1995	17.99	0.02	18.01	18.00	NA
		06/26/1995	18.26	0.02	18.28	17.73	NA
		08/28/1995	17.30	0.25	17.55	18.27	NA
		09/25/1995	18.60	0.61	19.21	16.30	NA
		10/23/1995	18.90	0.14	19.04	16.87	NA
		11/27/1995	19.25	0.01	19.26	16.76	0.01
		12/28/1995	17.53	0.01	17.54	18.48	NA
		01/22/1996	17.42	0.07	17.49	18.48	NA
		02/26/1996	12.50	0.11	12.61	23.33	NA
		04/22/1996	10.95	0.10	11.05	24.90	NA
		05/28/1996	16.82	0.00	16.82	19.21	NA
		06/24/1996	17.18	0.01	17.19	18.83	NA
		07/22/1996	17.53	0.01	17.54	18.48	NA
		08/23/1996	18.10	0.01	18.11	17.91	NA
		09/23/1996	18.22	0.08	18.30	17.66	NA
		10/28/1996	18.10	0.05	18.15	17.84	NA
		01/31/1997	NP		16.20	19.83	–
		04/21/1997	NP		17.00	19.03	–
		07/28/1997	NP		17.65	18.38	–
		10/14/1997	NP		18.39	17.64	–
		01/19/1998	NP		17.60	18.43	–
		04/20/1998	NP		17.38	18.65	–

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
RES-O	36.03	07/29/1998	NP		17.91	18.12	--
		11/18/1998	NP		18.52	17.51	--
		02/23/1999	NP		16.22	19.81	
		05/18/1999	NP		16.88	19.15	
		08/17/1999	NP		17.79	18.24	
		11/11/1999	NP		18.20	17.83	
		02/14/2000	NP		16.89	19.14	
		05/22/2000	NP		17.29	18.74	
Summary for Well	RES-O (32 detail records)				SPH Recovered to Date:		0.01
U-2	35.02	03/28/1995	NA		14.88	20.14	NA
		04/24/1995	NA		15.10	19.92	NA
		05/22/1995	NA		15.25	19.77	NA
		06/26/1995	NA		15.52	19.50	NA
		07/24/1995	NA		15.75	19.27	NA
		08/28/1995	NA		15.65	19.37	NA
		09/25/1995	NA		15.20	19.82	NA
		10/23/1995	NA		16.57	18.45	NA
		12/28/1995	NA		15.06	19.96	NA
		01/22/1996	NA		16.44	18.58	NA
		02/26/1996	NA		14.35	20.67	NA
		04/22/1996	NA		15.01	20.01	NA
		05/28/1996	NA		13.98	21.04	NA
		06/24/1996	NA		14.36	20.66	NA
		07/22/1996	NA		14.96	20.06	NA
		08/23/1996	NA		15.10	19.92	NA
		09/23/1996	NA		14.93	20.09	NA
		10/28/1996	NA		14.85	20.17	NA
		01/31/1997	NP		13.86	21.16	--
		04/21/1997	NP		14.52	20.50	--
		07/28/1997	NP		15.27	19.75	--
		10/15/1997	NP		16.28	18.74	--
		01/19/1998	NP		15.78	19.24	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
U-2	35.02	04/20/1998	NP		15.30	19.72	--
		07/29/1998	NP		15.80	19.22	0.1
		11/16/1998	NP		16.71	18.31	--
		02/23/1999	NP		14.29	20.73	
		05/18/1999	NP		14.61	20.41	
		08/17/1999	NP		15.65	19.37	
		11/11/1999	NP		16.51	18.51	
		02/14/2000	NP		15.31	19.71	
		05/22/2000	NP		15.41	19.61	
Summary for Well U-2 (32 detail records)					**SPH Recovered to Date:**		**0.10**
U-3	35.25	03/28/1995	NA		12.72	22.53	NA
		04/24/1995	NA		12.93	22.32	NA
		05/22/1995	NA		13.55	21.70	NA
		06/26/1995	13.89	0.01	13.90	21.34	NA
		07/24/1995	NA		14.02	21.23	NA
		08/28/1995	NA		19.65	15.60	NA
		09/25/1995	NA		16.35	18.90	NA
		10/23/1995	14.20	0.01	14.21	21.03	NA
		11/27/1995	14.20	0.00	14.20	21.05	NA
		12/28/1995	12.71	0.00	12.71	22.54	NA
		01/22/1996	16.56	0.02	16.58	18.65	NA
		02/26/1996	14.51	-0.36	14.15	21.41	NA
		04/22/1996	NA		15.15	20.10	NA
		05/28/1996	NA		12.27	22.98	NA
		06/24/1996	NA		12.69	22.56	NA
		07/22/1996	NA		13.02	22.23	NA
		08/23/1996	NA		13.15	22.10	NA
		09/23/1996	NA		15.02	20.23	NA
		10/28/1996	NA		17.90	17.35	NA
		01/31/1997	NP		11.86	23.39	0.00
		04/21/1997	NP		12.82	22.43	0.00
		07/28/1997	NP		13.83	21.42	0.00

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
U-3	35.25	10/15/1997	NP		14.23	21.02	--
		01/19/1998	NP		13.04	22.21	--
		04/20/1998	NP		13.23	22.02	--
		07/29/1998	NP		14.07	21.18	--
		11/16/1998	NP		14.42	20.83	--
		02/23/1999	NP		12.89	22.36	
		05/18/1999	NP		13.09	22.16	
		08/17/1999	NP		14.16	21.09	
		11/11/1999	NP		14.48	20.77	
		02/14/2000	NP		12.95	22.30	
		05/22/2000	NP		13.55	21.70	
Summary for Well U-3 (33 detail records)					**SPH Recovered to Date:**		0.00
U-4	34.46	03/28/1995	17.42	3.98	21.40	9.68	NA
		04/24/1995	15.60	6.17	21.77	7.45	NA
		05/22/1995	15.75	6.18	21.93	7.28	NA
		06/26/1995	15.96	6.16	22.12	7.10	NA
		07/24/1995	16.33	4.17	20.50	10.42	NA
		08/28/1995	17.23	3.72	20.95	10.35	5.2
		09/25/1995	18.60	0.25	18.85	15.40	NA
		10/23/1995	17.35	3.90	21.25	9.89	NA
		11/27/1995	16.40	2.40	18.80	13.62	1.22
		01/22/1996	17.60	0.04	17.64	16.79	2.79
		02/26/1996	12.85	0.30	13.15	21.06	0.98
		04/22/1996	11.50	0.23	11.73	22.53	0.31
		08/23/1996	16.31	0.16	16.47	17.85	0.25
		09/23/1996	16.61	0.09	16.70	17.68	NA
		10/28/1996	17.56	0.19	17.75	16.55	NA
		01/31/1997	14.80	2.25	17.05	15.50	6.5
		04/21/1997	15.26	0.09	15.35	19.03	NA
		07/25/1997	15.85	0.01	15.86	18.59	0.1
		10/15/1997	16.50	0.01	16.51	17.94	0.75
		01/19/1998	15.97	0.03	16.00	18.43	2.0

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
U-4	34.46	04/20/1998	15.72	2.42	18.14	14.26	3.0
		07/29/1998	16.22	0.01	16.23	18.22	0.3
		11/16/1998	NP		16.82	17.64	--
		02/23/1999	14.54	1.24	15.78	17.63	
		05/18/1999	15.37	0.02	15.39	19.05	0.5
		08/17/1999	NP		16.22	18.24	
		11/11/1999	NP		16.81	17.65	
		02/14/2000	15.77	0.09	15.86	18.52	2.5
		05/22/2000	NP		16.03	18.43	
Summary for Well U-4 (29 detail records)					**SPH Recovered to Date:**		**26.40**
U-5	33.37	03/28/1995	NA		18.21	15.16	NA
		04/24/1995	NA		18.47	14.90	NA
		05/22/1995	NA		18.33	15.04	NA
		06/26/1995	NA		8.42	24.95	NA
		07/24/1995	18.9	0.01	18.91	14.45	NA
		08/28/1995	19.13	0.12	19.25	14.02	NA
		09/25/1995	19.27	0.25	19.52	13.64	NA
		10/23/1995	19.32	0.17	19.49	13.74	NA
		11/27/1995	18.50	0.10	18.60	14.69	0.03
	34.2	12/28/1995	18.43	0.05	18.48	15.68	0.07
		01/22/1996	15.57	0.08	15.65	18.48	0.02
		02/26/1996	13.55	0.15	13.70	20.37	NA
		04/22/1996	17.82	0.08	17.90	16.23	0.02
		05/28/1996	16.52	0.01	16.53	17.66	NA
		06/24/1996	18.10	0.01	18.11	16.08	NA
		07/22/1996	19.39	0.03	19.42	14.75	NA
		09/23/1996	20.04	0.04	20.08	14.09	NA
		10/28/1996	18.15	0.07	18.22	15.92	NA
		01/31/1997	NP		18.01	16.19	0.00
	34.20	04/21/1997	NP		18.61	15.59	0.00
		07/28/1997	NP		19.38	14.82	0.00
		10/15/1997	NP		19.87	14.33	--

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
			Tosco				
U-5	34.20	01/19/1998	NM		NM		--
		04/20/1998	NP		19.58	14.62	--
	33.38	07/29/1998	NP		18.82	14.56	--
	34.13	11/16/1998	NP		19.24	14.89	--
		02/23/1999	NP		16.84	17.29	
		05/18/1999	NP		17.5	16.63	
		08/17/1999	NP		18.60	15.53	
		11/11/1999	NP		19.10	15.03	
		02/14/2000	NP		17.85	16.28	
		05/22/2000	NP		18.03	16.10	
Summary for Well U-5 (32 detail records)					**SPH Recovered to Date:**		**0.14**
U-5A	33.77	03/28/1995	4.73	1.47	6.20	26.32	NA
		04/24/1995	6.02	0.39	6.41	27.03	NA
		05/22/1995	6.52		NM		NA
		06/26/1995	6.97		NM		0.5
		07/24/1995	9.86	0.37	10.23	23.23	NA
		08/28/1995	9.50	0.45	9.95	23.44	0.01
		09/25/1995	NA		15.61	18.16	NA
		10/23/1995	15.30	0.20	15.50	18.10	NA
		11/27/1995	6.34	0.08	6.42	27.28	0.36
		12/28/1995	5.97	0.42	6.39	27.02	0.25
		01/22/1996	6.43	0.07	6.50	27.21	0.07
		02/26/1996	8.50	0.03	8.53	25.21	0.08
		04/22/1996	9.35	0.05	9.40	24.33	0.05
		06/24/1996	5.79	0.32	6.11	27.39	0.15
		07/22/1996	6.47	0.07	6.54	27.17	0.05
		08/23/1996	7.21	0.89	8.10	24.91	0.32
		09/23/1996	8.58	1.31	9.89	22.77	NA
		10/28/1996	20.04	0.03	20.07	13.67	NA
		01/31/1997	4.59	0.27	4.86	28.68	10.0
		04/21/1997	5.33	0.04	5.37	28.37	NA
		07/25/1997	6.89	0.06	6.95	26.77	1.1

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Table 5 (cont)
Cumulative Groundwater Elevation and SPH Recovery Data
Willbridge Terminal
Portland, Oregon

Well Identification	Top of Casing	Date Gauged	Depth to SPH (feet)	SPH Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation* (feet)	SPH Recovered** (gallons)
				Tosco			
U-5A	33.77	10/15/1997	7.88	0.01	7.89	25.87	0.5
		01/19/1998	NP		6.51	27.26	--
		04/20/1998	6.43	0.05	6.48	27.25	2.7
		07/29/1998	7.80	0.10	7.90	25.79	4.5
		11/16/1998	NP		8.99	24.78	--
		02/23/1999	NP		4.78	28.99	
		05/18/1999	5.97	0.02	5.99	27.76	0.4
		08/17/1999	NP		7.74	26.03	
		11/11/1999	NP		9.08	24.69	
		02/14/2000	NP		6.46	27.31	
		05/22/2000	6.99	0.01	7.00	26.76	1.00
Summary for Well U-5A (32 detail records)						**SPH Recovered to Date:**	**22.04**
						Total SPH Recovered (all wells)	630.17

Notes:
SPH = Separate Phase Hydrocarbon
NP = No product observed this gauging date
NA = Not available
NM = Not measured
* = Groundwater elevation is corrected for the presence of SPH using:
GWE=TOC-(DTW-(SPH thickness x Specific gravity of SPH))
Specific Gravity of SPH set to 0.85 g/cc
** = SPH recovered represents total product recovered for entire quarter
Negative numbers in SPH thickness field indicate possible data transcription error. Data is reported for completeness.

Wells Surveyed Dec. 1998:

B-1	B-12	B-35	U-5
B-3	B-17	B-36	IT-E
B-4	B-18	B-37	MW-27
B-6	B-20	B-40	MW-31
B-8	B-21	B-41	
B-9	B-25	DW-1	
B-10	B-28	P-1	
B-11	B-30	P-2	

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ATTACHMENT A

SAMPLING PROTOCOL

CERTIFIED ANALYTICAL REPORTS

CHAIN-OF-CUSTODY DOCUMENTATION

ATTACHMENT A

Sampling Protocol

- Hydrology and separate-phase hydrocarbon (SPH) monitoring (quarterly)
- Monitoring well purging and sampling (quarterly)
- SPH monitoring and removal (monthly)

IT Corporation (IT) measures depth to SPH and depth to water (DTW) in all monitoring wells, extraction wells, and piezometers associated with the Willbridge Terminal facility prior to each groundwater monitoring event. SPH thickness and DTW are measured with a Keck KIR-89 oil/water interface probe, which is decontaminated prior to and between uses with a non-phosphatic soap and water wash, a 1:1 methanol/water rinse, and a final deionized water rinse. Hydrology measurements for the Willbridge sites are collected on a single day, except in cases where access to part or all of a specific facility is restricted. Monitoring wells which show measurable product are not sampled.

Monitoring wells are purged and sampled using disposable polyethylene bailers. Monitoring wells are purged of a minimum of three casing volumes and until field parameter measurements stabilize to within +/-10%. Field parameters (pH, Specific Conductance, and Temperature) are measured and recorded on field sampling data sheets (FSDS) after each volume is removed. Wells which purge dry are allowed to recharge to a minimum of 60% of the pre-purge static water level prior to sample collection. All monitoring wells are sampled within twenty-four hours of purging. Samples are dispensed directly from the bailer into EPA-approved sample containers, containing appropriate preservatives, labeled, and stored in iced shipping containers. Dissolved metal samples are field-filtered by gravity through a 0.45 micron filter connected directly to the disposable bailer. Samples are delivered by sampler or courier under chain-of-custody documentation to North Creek Analytical, Beaverton, Oregon.

Quality Assurance/Quality Control (QA/QC) for the sampling event includes collection of one duplicate sample and one spike sample at each of the three Willbridge facility sites. In

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addition, meters for field parameter measurement are calibrated daily prior to sampling activities.

Product Recovery Protocol

Monitoring wells in which SPH is detected during quarterly hydrology monitoring, are measured for depth to SPH and DTW once a month. IT staff removes floating product from wells with SPH thickness greater than 0.2 feet. Product is extracted from the wells using either disposable bailers equipped with product recovery tips or a peristaltic pump. In wells with SPH thickness of less than 0.2 feet, a sorbent sock is installed at the water surface to capture floating product. Sorbent socks are replaced when saturated.

All purge water, SPH, and contaminated sorbents generated by purging and product removal activities are disposed of on site at the Willbridge facility.

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ORIGINAL IN PROJECT FILING

IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CR9	P005530-01	Water	05/23/00 10:10	05/24/00 14:00
CR8	P005530-02	Water	05/23/00 10:45	05/24/00 14:00
CR11	P005530-03	Water	05/23/00 11:30	05/24/00 14:00
B7	P005530-04	Water	05/23/00 12:10	05/24/00 14:00
B9	P005530-05	Water	05/23/00 12:55	05/24/00 14:00
B81	P005530-06	Water	05/23/00 13:00	05/24/00 14:00
B10	P005530-07	Water	05/23/00 13:50	05/24/00 14:00
B14	P005530-08	Water	05/23/00 14:25	05/24/00 14:00
B11	P005530-09	Water	05/23/00 15:00	05/24/00 14:00
B28	P005530-10	Water	05/23/00 15:30	05/24/00 14:00
B30	P005530-11	Water	05/23/00 15:55	05/24/00 14:00
TRIP BLANK	P005530-12	Water	05/23/00 12:00	05/24/00 14:00

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Total Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
CR9 (P005530-01) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.00298**	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	**0.0413**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00300**	0.00100	"	"	"	"	"	"	
Copper	**0.00381**	0.00200	"	"	"	"	"	"	
Lead	**0.00188**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	05/25/00	05/25/00	0050753	
Selenium	**0.00112**	0.00100	"	"	EPA 6020	06/06/00	06/07/00	0060169	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.00893**	0.00500	"	"	"	"	"	"	
CR8 (P005530-02) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	0.0256	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	0.342	0.00200	"	"	"	"	"	"	
Cadmium	0.00312	0.00100	"	"	"	"	"	"	
Chromium	0.0228	0.00100	"	"	"	"	"	"	
Copper	0.0684	0.00200	"	"	"	"	"	"	
Lead	0.0365	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000800	"	"	EPA 7470A	05/25/00	05/25/00	0050753	R-03
Selenium	0.00204	0.00100	"	"	EPA 6020	06/06/00	06/07/00	0060169	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	0.155	0.00500	"	"	"	"	"	"	
CR11 (P005530-03) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	0.0493	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	0.382	0.00200	"	"	"	"	"	"	
Cadmium	0.00659	0.00100	"	"	"	"	"	"	
Chromium	0.0358	0.00100	"	"	"	"	"	"	
Copper	0.0685	0.00200	"	"	"	"	"	"	
Lead	0.0391	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000400	"	"	EPA 7470A	05/25/00	05/25/00	0050753	R-03
Selenium	0.00321	0.00100	"	"	EPA 6020	06/06/00	06/07/00	0060169	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	0.168	0.00500	"	"	"	"	"	"	

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B7 (P005530-04) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.0268**	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	**0.228**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0264**	0.00100	"	"	"	"	"	"	
Copper	**0.0441**	0.00200	"	"	"	"	"	"	
Lead	**0.0115**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000400	"	"	EPA 7470A	05/25/00	05/25/00	0050753	R-03
Selenium	**0.00193**	0.00100	"	"	EPA 6020	06/06/00	06/07/00	0060169	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0863**	0.00500	"	"	"	"	"	"	
B9 (P005530-05) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.0177**	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	**0.139**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0176**	0.00100	"	"	"	"	"	"	
Copper	**0.0286**	0.00200	"	"	"	"	"	"	
Lead	**0.00848**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000400	"	"	EPA 7470A	05/25/00	05/25/00	0050753	R-03
Selenium	**0.00123**	0.00100	"	"	EPA 6020	06/06/00	06/07/00	0060169	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0616**	0.00500	"	"	"	"	"	"	
B81 (P005530-06) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.0276**	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	**0.259**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0304**	0.00100	"	"	"	"	"	"	
Copper	**0.0510**	0.00200	"	"	"	"	"	"	
Lead	**0.0137**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000400	"	"	EPA 7470A	05/25/00	05/25/00	0050753	R-03
Selenium	**0.00211**	0.00100	"	"	EPA 6020	06/06/00	06/07/00	0060169	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.104**	0.00500	"	"	"	"	"	"	

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B10 (P005530-07) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.0354**	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	**0.211**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0265**	0.00100	"	"	"	"	"	"	
Copper	**0.0384**	0.00200	"	"	"	"	"	"	
Lead	**0.0115**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000400	"	"	EPA 7470A	05/25/00	05/25/00	0050753	R-03
Selenium	**0.00229**	0.00100	"	"	EPA 6020	06/06/00	06/08/00	0060169	
Silver	ND	0.00100	"	"	"	"	06/07/00	"	
Zinc	**0.0631**	0.00500	"	"	"	"	"	"	
B14 (P005530-08) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.0327**	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	**0.155**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0152**	0.00100	"	"	"	"	"	"	
Copper	**0.0264**	0.00200	"	"	"	"	"	"	
Lead	**0.0186**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000400	"	"	EPA 7470A	05/25/00	05/25/00	0050753	R-03
Selenium	**0.00168**	0.00100	"	"	EPA 6020	06/06/00	06/08/00	0060169	
Silver	ND	0.00100	"	"	"	"	06/07/00	"	
Zinc	**0.0421**	0.00500	"	"	"	"	"	"	
B11 (P005530-09) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.0219**	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	**0.236**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0258**	0.00100	"	"	"	"	"	"	
Copper	**0.0407**	0.00200	"	"	"	"	"	"	
Lead	**0.0172**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000400	"	"	EPA 7470A	05/25/00	05/25/00	0050753	R-03
Selenium	**0.00233**	0.00100	"	"	EPA 6020	06/06/00	06/08/00	0060169	
Silver	ND	0.00100	"	"	"	"	06/07/00	"	
Zinc	**0.0732**	0.00500	"	"	"	"	"	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B28 (P005530-10) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.00956**	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	**0.245**	0.00200	"	"	"	"	"	"	
Cadmium	**0.00144**	0.00100	"	"	"	"	"	"	
Chromium	**0.0258**	0.00100	"	"	"	"	"	"	
Copper	**0.0468**	0.00200	"	"	"	"	"	"	
Lead	**0.0205**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000400	"	"	EPA 7470A	05/25/00	05/25/00	0050753	R-03
Selenium	**0.00277**	0.00100	"	"	EPA 6020	06/06/00	06/08/00	0060169	
Silver	ND	0.00100	"	"	"	"	06/07/00	"	
Zinc	**0.0913**	0.00500	"	"	"	"	"	"	
B30 (P005530-11) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.0141**	0.00100	mg/l	1	EPA 6020	06/06/00	06/07/00	0060169	
Barium	**0.117**	0.00200	"	"	"	"	"	"	
Cadmium	**0.00978**	0.00100	"	"	"	"	"	"	
Chromium	**0.00904**	0.00100	"	"	"	"	"	"	
Copper	**0.0173**	0.00200	"	"	"	"	"	"	
Lead	**0.0108**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000400	"	"	EPA 7470A	05/25/00	05/25/00	0050753	R-03
Selenium	**0.00267**	0.00100	"	"	EPA 6020	06/06/00	06/08/00	0060169	
Silver	ND	0.00100	"	"	"	"	06/07/00	"	
Zinc	**0.0527**	0.00500	"	"	"	"	"	"	

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Dissolved Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
CR9 (P005530-01) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	ND	0.00100	mg/l	1	EPA 6020	05/26/00	05/30/00	0050805	
Barium	**0.0162**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	**0.0195**	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	05/25/00	05/25/00	0050754	
Selenium	ND	0.00100	"	"	EPA 6020	05/26/00	05/30/00	0050805	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.00518**	0.00500	"	"	"	"	"	"	
B14 (P005530-08) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.0289**	0.00100	mg/l	1	EPA 6020	05/26/00	05/30/00	0050805	
Barium	**0.0588**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	**0.0393**	0.00200	"	"	"	"	"	"	
Lead	**0.00198**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	05/25/00	05/25/00	0050754	
Selenium	ND	0.00100	"	"	EPA 6020	05/26/00	05/30/00	0050805	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0162**	0.00500	"	"	"	"	"	"	
B30 (P005530-11) Water					Sampled: 05/23/00 Received: 05/24/00				
Arsenic	**0.0129**	0.00100	mg/l	1	EPA 6020	05/26/00	05/30/00	0050805	
Barium	**0.0588**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	**0.00888**	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	05/25/00	05/25/00	0050754	
Selenium	ND	0.00100	"	"	EPA 6020	05/26/00	05/30/00	0050805	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.00556**	0.00500	"	"	"	"	"	"	

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Selected Volatile Organic Compounds per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
CR9 (P005530-01) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*71.3 %*	*70-130*							
CR8 (P005530-02) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*79.3 %*	*70-130*							
CR11 (P005530-03) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	**40.2**	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	**1.95**	0.500	"	"	"	"	"	"	
Ethylbenzene	**2.54**	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*114 %*	*70-130*							
B7 (P005530-04) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	**0.678**	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.41**	0.500	"	"	"	"	"	"	
Xylenes (total)	**1.22**	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*188 %*	*70-130*							*S-09*

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Selected Volatile Organic Compounds per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B9 (P005530-05) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	**0.535**	0.500	"	"	"	"	"	"	
Ethylbenzene	**0.737**	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*119 %*	*70-130*							
B81 (P005530-06) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	**0.691**	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.06**	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*NR*	*70-130*							*S-09*
B10 (P005530-07) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	**1.20**	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	**2.93**	0.500	"	"	"	"	"	"	
Ethylbenzene	**4.14**	0.500	"	"	"	"	"	"	
Xylenes (total)	**6.53**	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*NR*	*70-130*							*S-09*
B14 (P005530-08) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	**125**	1.00	ug/l	2	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	**15.9**	1.00	"	"	"	"	"	"	
Ethylbenzene	**69.2**	1.00	"	"	"	"	"	"	
Xylenes (total)	**30.7**	2.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*NR*	*70-130*							*S-09*

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Selected Volatile Organic Compounds per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B11 (P005530-09) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	**7.45**	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	**4.95**	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.42**	0.500	"	"	"	"	"	"	
Xylenes (total)	**8.52**	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*NR*	*70-130*							*S-09*
B28 (P005530-10) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*83.7 %*	*70-130*							
B30 (P005530-11) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	**18.8**	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	**2.53**	0.500	"	"	"	"	"	"	
Ethylbenzene	**0.682**	0.500	"	"	"	"	"	"	
Xylenes (total)	**4.57**	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*98.0 %*	*70-130*							
TRIP BLANK (P005530-12) Water					Sampled: 05/23/00 Received: 05/24/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/02/00	06/02/00	0060061	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 2-BCB(PID)	*77.3 %*	*70-130*							

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
CR9 (P005530-01) Water					Sampled: 05/23/00 Received: 05/24/00				
Acenaphthene	ND	0.100	ug/l	1	EPA 8270B-m	05/27/00	06/05/00	0050827	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	**0.115**	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	0.100	"	"	"	"	"	"	
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*97.5 %*	*20-140*							
Surr: Nitrobenzene-d5	*91.8 %*	*35-138*							
Surr: p-Terphenyl-d14	*117 %*	*43-135*							
CR8 (P005530-02) Water					Sampled: 05/23/00 Received: 05/24/00				
Acenaphthene	ND	1.00	ug/l	10	EPA 8270B-m	05/27/00	06/05/00	0050827	R-03
Acenaphthylene	ND	1.00	"	"	"	"	"	"	R-03
Anthracene	**0.233**	0.100	"	1	"	"	06/08/00	"	
Benzo (a) anthracene	**0.232**	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	**0.610**	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	**0.460**	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	**0.981**	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	**0.331**	0.100	"	"	"	"	"	"	
Chrysene	**0.326**	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	**0.270**	0.100	"	"	"	"	"	"	
Fluorene	ND	1.00	"	10	"	"	06/05/00	"	R-03
Indeno (1,2,3-cd) pyrene	**0.613**	0.100	"	1	"	"	06/08/00	"	
Naphthalene	ND	1.00	"	10	"	"	06/05/00	"	R-03
Phenanthrene	ND	0.100	"	1	"	"	06/08/00	"	
Pyrene	**0.458**	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*121 %*	*20-140*							

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
CR8 (P005530-02) Water						Sampled: 05/23/00	Received: 05/24/00		
Surr: Nitrobenzene-d5	*108 %*	*35-138*							
Surr: p-Terphenyl-d14	*104 %*	*43-135*							
CR11 (P005530-03) Water						Sampled: 05/23/00	Received: 05/24/00		
Acenaphthene	ND	2.50	ug/l	25	EPA 8270B-m	05/27/00	06/07/00	0050827	R-03
Acenaphthylene	ND	2.50	"	"	"	"	"	"	R-03
Anthracene	ND	0.100	"	1	"	"	06/05/00	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	2.50	"	25	"	"	06/07/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/05/00	"	
Naphthalene	ND	2.50	"	25	"	"	06/07/00	"	R-03
Phenanthrene	ND	0.100	"	1	"	"	06/05/00	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*90.0 %*	*20-140*							
Surr: Nitrobenzene-d5	*93.3 %*	*35-138*							
Surr: p-Terphenyl-d14	*93.7 %*	*43-135*							
B7 (P005530-04) Water						Sampled: 05/23/00	Received: 05/24/00		**R-05**
Acenaphthene	ND	10.0	ug/l	100	EPA 8270B-m	05/27/00	06/07/00	0050827	R-03
Acenaphthylene	ND	10.0	"	"	"	"	"	"	R-03
Anthracene	ND	10.0	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	1.00	"	10	"	"	06/05/00	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Fluorene	**17.2**	10.0	"	100	"	"	06/07/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	1.00	"	10	"	"	06/05/00	"	

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B7 (P005530-04) Water					Sampled: 05/23/00 Received: 05/24/00				**R-05**
Naphthalene	ND	10.0	ug/l	100	EPA 8270B-m	05/27/00	06/07/00	0050827	R-03
Phenanthrene	**13.6**	1.00	"	10	"	"	06/05/00	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*NR*	*20-140*							*S-01*
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-01*
Surr: p-Terphenyl-d14	*37.7 %*	*43-135*							*S-09*
B9 (P005530-05) Water					Sampled: 05/23/00 Received: 05/24/00				
Acenaphthene	ND	5.00	ug/l	50	EPA 8270B-m	05/27/00	06/08/00	0050827	R-03
Acenaphthylene	ND	5.00	"	"	"	"	"	"	R-03
Anthracene	ND	5.00	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	0.100	"	1	"	"	06/05/00	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	50	"	"	06/08/00	"	R-03
Fluorene	**7.43**	5.00	"	"	"	"	"	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/05/00	"	
Naphthalene	ND	5.00	"	50	"	"	06/08/00	"	R-03
Phenanthrene	**1.30**	0.100	"	1	"	"	06/05/00	"	
Pyrene	ND	5.00	"	50	"	"	06/08/00	"	R-03
Surr: 2-Fluorobiphenyl	*NR*	*20-140*							*S-01*
Surr: Nitrobenzene-d5	*97.9 %*	*35-138*							
Surr: p-Terphenyl-d14	*58.8 %*	*43-135*							

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B81 (P005530-06) Water					Sampled: 05/23/00 Received: 05/24/00				**R-05**
Acenaphthene	ND	10.0	ug/l	100	EPA 8270B-m	05/27/00	06/07/00	0050827	R-03
Acenaphthylene	ND	10.0	"	"	"	"	"	"	R-03
Anthracene	ND	10.0	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	1.00	"	10	"	"	06/05/00	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Fluorene	**20.9**	10.0	"	100	"	"	06/07/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	1.00	"	10	"	"	06/05/00	"	
Naphthalene	ND	10.0	"	100	"	"	06/07/00	"	R-03
Phenanthrene	**15.8**	1.00	"	10	"	"	06/05/00	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*NR*	*20-140*							*S-01*
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-01*
Surr: p-Terphenyl-d14	*34.9 %*	*43-135*							*S-09*
B10 (P005530-07) Water					Sampled: 05/23/00 Received: 05/24/00				
Acenaphthene	ND	25.0	ug/l	50	EPA 8270B-m	05/27/00	06/07/00	0050827	R-03
Acenaphthylene	ND	5.00	"	"	"	"	"	"	R-03
Anthracene	ND	5.00	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	0.100	"	1	"	"	06/05/00	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	**0.101**	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	50	"	"	06/07/00	"	R-03
Fluorene	**11.9**	5.00	"	"	"	"	"	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/05/00	"	
Naphthalene	ND	5.00	"	50	"	"	06/07/00	"	R-03
Phenanthrene	**12.7**	5.00	"	"	"	"	"	"	R-03
Pyrene	**0.818**	0.100	"	1	"	"	06/05/00	"	
Surr: 2-Fluorobiphenyl	*NR*	*20-140*							*S-01*

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B10 (P005530-07) Water						Sampled: 05/23/00	Received: 05/24/00		
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-01*
Surr: p-Terphenyl-d14	*68.7 %*	*43-135*							
B14 (P005530-08) Water						Sampled: 05/23/00	Received: 05/24/00		
Acenaphthene	ND	2.50	ug/l	25	EPA 8270B-m	05/27/00	06/07/00	0050827	R-03
Acenaphthylene	ND	2.50	"	"	"	"	"	"	R-03
Anthracene	**0.185**	0.100	"	1	"	"	06/05/00	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	**0.467**	0.100	"	"	"	"	"	"	
Fluorene	ND	2.50	"	25	"	"	06/07/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/05/00	"	
Naphthalene	ND	25.0	"	25	"	"	06/07/00	"	R-03
Phenanthrene	**1.36**	0.100	"	1	"	"	06/05/00	"	
Pyrene	**0.621**	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*75.1 %*	*20-140*							
Surr: Nitrobenzene-d5	*101 %*	*35-138*							
Surr: p-Terphenyl-d14	*75.5 %*	*43-135*							
B11 (P005530-09) Water						Sampled: 05/23/00	Received: 05/24/00		
Acenaphthene	ND	5.00	ug/l	50	EPA 8270B-m	05/27/00	06/08/00	0050827	R-03
Acenaphthylene	ND	5.00	"	"	"	"	"	"	R-03
Anthracene	ND	5.00	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	0.100	"	1	"	"	06/05/00	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	5.00	"	50	"	"	06/08/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/05/00	"	

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B11 (P005530-09) Water					Sampled: 05/23/00 Received: 05/24/00				
Naphthalene	ND	5.00	ug/l	50	EPA 8270B-m	05/27/00	06/08/00	0050827	R-03
Phenanthrene	**0.891**	0.100	"	1	"	"	06/05/00	"	
Pyrene	**0.169**	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*NR*	*20-140*							*S-01*
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-01*
Surr: p-Terphenyl-d14	*69.2 %*	*43-135*							
B28 (P005530-10) Water					Sampled: 05/23/00 Received: 05/24/00				
Acenaphthene	ND	0.100	ug/l	1	EPA 8270B-m	05/27/00	06/05/00	0050827	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	0.100	"	"	"	"	"	"	
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*98.3 %*	*20-140*							
Surr: Nitrobenzene-d5	*90.8 %*	*35-138*							
Surr: p-Terphenyl-d14	*108 %*	*43-135*							

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B30 (P005530-11) Water					Sampled: 05/23/00 Received: 05/24/00				
Acenaphthene	ND	1.00	ug/l	1	EPA 8270B-m	05/27/00	06/05/00	0050827	R-03
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.500	"	"	"	"	"	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	1.00	"	"	"	"	"	"	R-03
Phenanthrene	**0.105**	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*94.1 %*	*20-140*							
Surr: Nitrobenzene-d5	*90.7 %*	*35-138*							
Surr: p-Terphenyl-d14	*86.4 %*	*43-135*							

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0050753 - EPA 7470										
Blank (0050753-BLK1)				Prepared & Analyzed: 05/25/00						
Mercury	ND	0.000200	mg/l							
LCS (0050753-BS1)				Prepared & Analyzed: 05/25/00						
Mercury	0.00537	0.000200	mg/l	0.00500		107	80-120			
Duplicate (0050753-DUP1)		Source: P005478-01		Prepared & Analyzed: 05/25/00						
Mercury	ND	0.000200	mg/l		ND				20	
Matrix Spike (0050753-MS1)		Source: P005478-01		Prepared & Analyzed: 05/25/00						
Mercury	0.00526	0.000200	mg/l	0.00500	ND	105	75-125			
Matrix Spike (0050753-MS2)		Source: P005530-01		Prepared & Analyzed: 05/25/00						
Mercury	0.00533	0.000200	mg/l	0.00500	ND	107	75-125			
Batch 0060169 - EPA 200/3005										
Blank (0060169-BLK1)				Prepared: 06/06/00 Analyzed: 06/07/00						
Arsenic	ND	0.00100	mg/l							
Barium	ND	0.00200	"							
Cadmium	ND	0.00100	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00200	"							
Lead	ND	0.00100	"							
Selenium	ND	0.00100	"							
Silver	ND	0.00100	"							
Zinc	ND	0.00500	"							

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060169 - EPA 200/3005										
LCS (0060169-BS1)				Prepared: 06/06/00 Analyzed: 06/07/00						
Arsenic	0.0965	0.00100	mg/l	0.100		96.5	80-120			
Barium	0.0965	0.00200	"	0.100		96.5	80-120			
Cadmium	0.0940	0.00100	"	0.100		94.0	80-120			
Chromium	0.0978	0.00100	"	0.100		97.8	80-120			
Copper	0.0928	0.00200	"	0.100		92.8	80-120			
Lead	0.0984	0.00100	"	0.100		98.4	80-120			
Selenium	0.101	0.0100	"	0.100		101	80-120			
Silver	0.0484	0.00100	"	0.0500		96.8	80-120			
Zinc	0.0929	0.00500	"	0.100		92.9	80-120			
Duplicate (0060169-DUP1)		**Source: P005529-01**		Prepared: 06/06/00 Analyzed: 06/07/00						
Arsenic	0.00279	0.00100	mg/l		0.00237			16.3	20	
Barium	0.0144	0.00200	"		0.0144			0	20	
Cadmium	ND	0.00100	"		ND				20	
Chromium	0.00447	0.00100	"		0.00419			6.47	20	
Copper	ND	0.00200	"		ND			25.2	20	Q-06
Lead	ND	0.00100	"		ND				20	
Selenium	0.00170	0.00100	"		0.00151			11.8	20	
Silver	ND	0.00100	"		ND				20	
Zinc	ND	0.00500	"		ND				20	
Matrix Spike (0060169-MS1)		**Source: P005529-01**		Prepared: 06/06/00 Analyzed: 06/07/00						
Arsenic	0.103	0.00100	mg/l	0.100	0.00237	101	75-125			
Barium	0.111	0.00200	"	0.100	0.0144	96.6	75-125			
Cadmium	0.0961	0.00100	"	0.100	ND	96.1	75-125			
Chromium	0.104	0.00100	"	0.100	0.00419	99.8	75-125			
Copper	0.0949	0.00200	"	0.100	ND	94.0	75-125			
Lead	0.0991	0.00100	"	0.100	ND	99.1	75-125			
Selenium	0.105	0.0100	"	0.100	ND	103	75-125			
Silver	0.0502	0.00100	"	0.0500	ND	100	75-125			
Zinc	0.0972	0.00500	"	0.100	ND	97.2	75-125			

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060169 - EPA 200/3005										
Matrix Spike (0060169-MS2)	**Source: P005530-06**			Prepared: 06/06/00 Analyzed: 06/08/00						
Arsenic	0.121	0.0100	mg/l	0.100	0.0276	93.4	75-125			
Barium	0.351	0.00200	"	0.100	0.259	92.0	75-125			
Cadmium	0.0998	0.00100	"	0.100	ND	99.1	75-125			
Chromium	0.130	0.00100	"	0.100	0.0304	99.6	75-125			
Copper	0.138	0.00200	"	0.100	0.0510	87.0	75-125			
Lead	0.114	0.00100	"	0.100	0.0137	100	75-125			
Selenium	0.103	0.0100	"	0.100	ND	101	75-125			
Silver	0.0518	0.00100	"	0.0500	ND	103	75-125			
Zinc	0.181	0.00500	"	0.100	0.104	77.0	75-125			

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Dissolved Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0050754 - EPA 7470										
Blank (0050754-BLK1)				Prepared & Analyzed: 05/25/00						
Mercury	ND	0.000200	mg/l							
LCS (0050754-BS1)				Prepared & Analyzed: 05/25/00						
Mercury	0.00523	0.000200	mg/l	0.00500		105	80-120			
Duplicate (0050754-DUP1)		**Source: P005530-01**		Prepared & Analyzed: 05/25/00						
Mercury	ND	0.000200	mg/l		ND				20	
Matrix Spike (0050754-MS1)		**Source: P005530-01**		Prepared & Analyzed: 05/25/00						
Mercury	0.00537	0.000200	mg/l	0.00500	ND	107	75-125			
Matrix Spike (0050754-MS2)		**Source: P005237-04**		Prepared & Analyzed: 05/25/00						
Mercury	0.00515	0.000200	mg/l	0.00500	ND	103	75-125			
Batch 0050805 - EPA 200/3005										
Blank (0050805-BLK1)				Prepared & Analyzed: 05/26/00						
Arsenic	ND	0.00100	mg/l							
Barium	ND	0.00200	"							
Cadmium	ND	0.00100	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00200	"							
Lead	ND	0.00100	"							
Selenium	ND	0.00100	"							
Silver	ND	0.00100	"							
Zinc	ND	0.00500	"							

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P.O. Box 231269	Project Number: B15.200.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Dissolved Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0050805 - EPA 200/3005										
LCS (0050805-BS1)				Prepared & Analyzed: 05/26/00						
Arsenic	0.101	0.00100	mg/l	0.100		101	80-120			
Barium	0.108	0.00200	"	0.100		108	80-120			
Cadmium	0.103	0.00100	"	0.100		103	80-120			
Chromium	0.105	0.00100	"	0.100		105	80-120			
Copper	0.0999	0.00200	"	0.100		99.9	80-120			
Lead	0.107	0.00100	"	0.100		107	80-120			
Selenium	0.105	0.00100	"	0.100		105	85-115			
Silver	0.0525	0.00100	"	0.0500		105	80-120			
Zinc	0.103	0.00500	"	0.100		103	80-120			
Duplicate (0050805-DUP1)		**Source: P005475-01**		Prepared & Analyzed: 05/26/00						
Arsenic	0.00738	0.00100	mg/l		0.00710			3.87	20	
Barium	0.0645	0.00200	"		0.0654			1.39	20	
Cadmium	ND	0.00100	"		ND			3.70	20	
Chromium	ND	0.00100	"		ND			2.38	20	
Copper	0.00274	0.00200	"		0.00284			3.58	20	
Lead	ND	0.00100	"		ND			8.70	20	
Selenium	0.00189	0.00100	"		0.00197			4.15	20	
Silver	ND	0.00100	"		ND			66.7	20	Q-06
Zinc	0.00833	0.00500	"		0.00838			0.598	20	
Matrix Spike (0050805-MS1)		**Source: P005475-01**		Prepared: 05/26/00 Analyzed: 05/30/00						
Arsenic	0.104	0.0100	mg/l	0.100	ND	96.9	75-125			
Barium	0.172	0.00200	"	0.100	0.0654	107	75-125			
Cadmium	0.102	0.00100	"	0.100	ND	101	75-125			
Chromium	0.106	0.00100	"	0.100	ND	105	75-125			
Copper	0.102	0.00200	"	0.100	0.00284	99.2	75-125			
Lead	0.104	0.00100	"	0.100	ND	104	75-125			
Selenium	0.0911	0.0100	"	0.100	ND	89.1	75-125			
Silver	0.0528	0.00100	"	0.0500	ND	106	75-125			
Zinc	0.103	0.00500	"	0.100	0.00838	94.6	75-125			

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Dissolved Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0050805 - EPA 200/3005										
Matrix Spike (0050805-MS2)		**Source: P005328-02**		Prepared: 05/26/00 Analyzed: 06/01/00						
Arsenic	0.150	0.0100	mg/l	0.100	0.0398	110	75-125			
Barium	0.261	0.00200	"	0.100	0.147	114	75-125			
Cadmium	0.105	0.00100	"	0.100	ND	105	75-125			
Chromium	0.112	0.00100	"	0.100	ND	112	75-125			
Copper	0.106	0.00200	"	0.100	ND	105	75-125			
Lead	0.104	0.00100	"	0.100	ND	104	75-125			
Selenium	0.102	0.0100	"	0.100	ND	101	75-125			
Silver	0.0554	0.00100	"	0.0500	ND	111	75-125			
Zinc	0.105	0.00500	"	0.100	ND	103	75-125			

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Selected Volatile Organic Compounds per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060061 - EPA 5030										
Blank (0060061-BLK1)				Prepared & Analyzed: 06/02/00						
Benzene	ND	0.500	ug/l							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surr: 2-BCB(PID)	*25.1*		"	*30.0*		*83.7*	*70-130*			
LCS (0060061-BS1)				Prepared & Analyzed: 06/02/00						
Benzene	18.8	0.500	ug/l	20.0		94.0	68-126			
Toluene	18.3	0.500	"	20.0		91.5	76-125			
Surr: 2-BCB(PID)	*22.1*		"	*30.0*		*73.7*	*70-130*			
Matrix Spike (0060061-MS1)	**Source: P005530-05**			Prepared & Analyzed: 06/02/00						
Benzene	19.5	0.500	ug/l	20.0	ND	96.7	68-126			
Toluene	19.3	0.500	"	20.0	0.535	93.8	76-125			
Surr: 2-BCB(PID)	*36.4*		"	*30.0*		*121*	*70-130*			
Matrix Spike Dup (0060061-MSD1)	**Source: P005530-05**			Prepared & Analyzed: 06/02/00						
Benzene	20.2	0.500	ug/l	20.0	ND	100	68-126	3.53	20	
Toluene	20.1	0.500	"	20.0	0.535	97.8	76-125	4.06	20	
Surr: 2-BCB(PID)	*42.4*		"	*30.0*		*141*	*70-130*			*S-09*

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0050827 - EPA 3520/600 Series										
Blank (0050827-BLK1)				Prepared: 05/27/00 Analyzed: 06/05/00						
Acenaphthene	ND	0.100	ug/l							
Acenaphthylene	ND	0.100	"							
Anthracene	ND	0.100	"							
Benzo (a) anthracene	ND	0.100	"							
Benzo (a) pyrene	ND	0.100	"							
Benzo (b) fluoranthene	ND	0.100	"							
Benzo (ghi) perylene	ND	0.100	"							
Benzo (k) fluoranthene	ND	0.100	"							
Chrysene	ND	0.100	"							
Dibenzo (a,h) anthracene	ND	0.200	"							
Fluoranthene	ND	0.100	"							
Fluorene	ND	0.100	"							
Indeno (1,2,3-cd) pyrene	ND	0.100	"							
Naphthalene	ND	0.100	"							
Phenanthrene	ND	0.100	"							
Pyrene	ND	0.100	"							
Surr: 2-Fluorobiphenyl	*2.30*		"	*2.50*		*92.0*	*20-140*			
Surr: Nitrobenzene-d5	*1.88*		"	*2.50*		*75.2*	*35-138*			
Surr: p-Terphenyl-d14	*3.02*		"	*2.50*		*121*	*43-135*			
LCS (0050827-BS1)				Prepared: 05/27/00 Analyzed: 06/05/00						
Acenaphthene	0.932	0.100	ug/l	1.00		93.2	26-135			
Benzo (a) pyrene	0.877	0.100	"	1.00		87.7	38-137			
Pyrene	0.932	0.100	"	1.00		93.2	33-133			
Surr: 2-Fluorobiphenyl	*2.71*		"	*2.50*		*108*	*20-140*			
Surr: Nitrobenzene-d5	*2.26*		"	*2.50*		*90.4*	*35-138*			
Surr: p-Terphenyl-d14	*2.90*		"	*2.50*		*116*	*43-135*			

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0050827 - EPA 3520/600 Series										
Matrix Spike (0050827-MS1)	**Source: P005530-05**			Prepared: 05/27/00 Analyzed: 06/07/00						
Acenaphthene	ND	0.100	ug/l	0.980	ND		26-135			Q-08
Benzo (a) pyrene	0.319	0.100	"	0.980	ND	32.6	38-137			Q-01
Pyrene	0.845	0.100	"	0.980	ND	86.2	33-133			
Surr: 2-Fluorobiphenyl	*NR*		"	*2.45*			*20-140*			*S-01*
Surr: Nitrobenzene-d5	*2.71*		"	*2.45*		*111*	*35-138*			
Surr: p-Terphenyl-d14	*1.42*		"	*2.45*		*58.0*	*43-135*			
Matrix Spike Dup (0050827-MSD1)	**Source: P005530-05**			Prepared: 05/27/00 Analyzed: 06/07/00						
Acenaphthene	ND	0.100	ug/l	0.971	ND		26-135		60	Q-08
Benzo (a) pyrene	0.324	0.100	"	0.971	ND	33.4	38-137	1.56	60	Q-01
Pyrene	0.785	0.100	"	0.971	ND	80.8	33-133	7.36	60	
Surr: 2-Fluorobiphenyl	*NR*		"	*2.43*			*20-140*			*S-01*
Surr: Nitrobenzene-d5	*2.80*		"	*2.43*		*115*	*35-138*			
Surr: p-Terphenyl-d14	*1.43*		"	*2.43*		*58.8*	*43-135*			

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IT Corporation - Portland	Project: Willbridge (Chevron)	
P.O. Box 231269	Project Number: B15.200.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/12/00 16:08

Notes and Definitions

Q-01	The spike recovery, and/or RPD, for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
Q-06	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
Q-08	Unable to quantitate spike recovery due to matrix interference and/or dilution necessary for analysis.
R-03	The reporting limit for this analyte was raised due to matrix interference.
R-05	Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-09	Surrogate recovery is outside control limits due to matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
wet	Sample results reported on a wet weight basis
RPD	Relative Percent Difference

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Crystal Burkholder, Project Manager

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Environmental Laboratory Network

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2.3 deg

CHAIN OF CUSTODY REPORT

Work Order #: P005530

CLIENT: Chevron (Willbridge)
REPORT TO: IT (PDX) Tim Stone
ADDRESS: 15055 SW Sequoia Pkwy Suite 140 Ptld OR 97224
PHONE: (503) 624-7200 FAX (503) 620-7658

INVOICE TO: IT PDX (Tim Stone)
P.O. NUMBER:

PROJECT NAME: Chevron Willbridge
PROJECT NUMBER: B15-200.2A
SAMPLED BY: Cory LaVelle

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: ~~10~~ | 7 | 5 | 4 | 3 | 2 | 1 | <1
STD. Petroleum Hydrocarbon Analyses: 5 | 4 | 3 | 2 | 1 | <1
STD. OTHER Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	BTEX	PAHs	Metals	Dissolved M	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA LAB ID
1. CR9	5-23-00 / 1010	X	X	X	X	W	7		
2. CR8	5-23-00 / 1045	X	X	X		W	6		
3. CR11	5-23-00 / 1130	X	X	X		W	6		
4. B7	5-23-00 / 1210	X	X	X		W	~~10~~ 6	~~Matrix spike~~ ER	
5. B9	5-23-00 / 1255	X	X	X		W	18	Matrix spike	
6. B-81	5-23-00 / 1300	X	X	X		W	6		
7. B-10	5-23-00 / 1350	X	X	X		W	~~12~~ 6	6 bottles	
8. B-14	5-23-00 / 1425	X	X	X	X	W	7		
9. B-11	5-23-00 / 1500	X	X	X		W	6		
10. B-28	5-23-00 / 1530	X	X	X		W	6		
11. B-30	5-23-00 / 1555	X	X	X	X	W	7		
12. Trip Blank	— —	X				W	2		
13.									
14.									
15.									

RELINQUISHED BY: Cory LaVelle — DATE: 5-24-00
PRINT NAME: Cory LaVelle — FIRM: IT Corp — TIME: 1400

RECEIVED BY: Jessica Roberts — DATE: 5/24/00
PRINT NAME: JROBERTS — FIRM: NCA — TIME: 1400

RELINQUISHED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

RECEIVED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

ADDITIONAL REMARKS:

TEMP: 2.0°C

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B17	P005612-01	Water	05/26/00 12:15	05/26/00 16:50
B4	P005612-02	Water	05/26/00 11:20	05/26/00 16:50
B18	P005612-03	Water	05/26/00 09:20	05/26/00 16:50
B37	P005612-04	Water	05/26/00 09:45	05/26/00 16:50
B22	P005612-05	Water	05/26/00 10:20	05/26/00 16:50
U5	P005612-06	Water	05/26/00 10:45	05/26/00 16:50
B35	P005612-07	Water	05/26/00 13:15	05/26/00 16:50
B36	P005612-08	Water	05/26/00 13:55	05/26/00 16:50
B56	P005612-09	Water	05/26/00 11:20	05/26/00 16:50
U4	P005612-10	Water	05/26/00 14:35	05/26/00 16:50
U2	P005612-11	Water	05/26/00 15:10	05/26/00 16:50
U3	P005612-12	Water	05/26/00 15:30	05/26/00 16:50
Trip Blank	P005612-13	Water	05/26/00 00:00	05/26/00 16:50

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B17 (P005612-01RE1) Water					Sampled: 05/26/00 Received: 05/26/00				
Benzene	**434**	2.50	ug/l	5	EPA 8021B	06/05/00	06/05/00	0060109	
Toluene	**44.4**	2.50	"	"	"	"	"	"	
Ethylbenzene	**49.9**	2.50	"	"	"	"	"	"	
Xylenes (total)	**158**	5.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*99.8 %*	*75-120*							
B4 (P005612-02RE1) Water					Sampled: 05/26/00 Received: 05/26/00				
Benzene	**82.3**	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060109	
Toluene	**12.7**	0.500	"	"	"	"	"	"	
Ethylbenzene	**4.00**	0.500	"	"	"	"	"	"	
Xylenes (total)	**14.8**	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*137 %*	*75-120*							*S-02*
B18 (P005612-03RE1) Water					Sampled: 05/26/00 Received: 05/26/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060109	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*103 %*	*75-120*							
B37 (P005612-04RE1) Water					Sampled: 05/26/00 Received: 05/26/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060109	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*102 %*	*75-120*							

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B22 (P005612-05RE1) Water						Sampled: 05/26/00	Received: 05/26/00		
Benzene	**0.508**	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060109	
Toluene	**0.522**	0.500	"	"	"	"	"	"	
Ethylbenzene	**0.543**	0.500	"	"	"	"	"	"	
Xylenes (total)	**2.17**	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*102 %*	*75-120*							
U5 (P005612-06RE1) Water						Sampled: 05/26/00	Received: 05/26/00		
Benzene	**3.49**	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060109	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*100 %*	*75-120*							
B35 (P005612-07RE1) Water						Sampled: 05/26/00	Received: 05/26/00		
Benzene	**194**	2.50	ug/l	5	EPA 8021B	06/05/00	06/05/00	0060109	
Toluene	**16.3**	2.50	"	"	"	"	"	"	
Ethylbenzene	**12.5**	2.50	"	"	"	"	"	"	
Xylenes (total)	**39.8**	5.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*95.2 %*	*75-120*							
B36 (P005612-08RE1) Water						Sampled: 05/26/00	Received: 05/26/00		
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060109	
Toluene	**0.820**	0.500	"	"	"	"	"	"	
Ethylbenzene	**0.502**	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*103 %*	*75-120*							

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B56 (P005612-09RE1) Water					Sampled: 05/26/00 Received: 05/26/00				
Benzene	**74.8**	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060109	
Toluene	**10.7**	0.500	"	"	"	"	"	"	
Ethylbenzene	**2.77**	0.500	"	"	"	"	"	"	
Xylenes (total)	**10.3**	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*112 %*	*75-120*							
U4 (P005612-10RE1) Water					Sampled: 05/26/00 Received: 05/26/00				
Benzene	**62.3**	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060109	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*101 %*	*75-120*							
U2 (P005612-11) Water					Sampled: 05/26/00 Received: 05/26/00				
Benzene	**0.885**	0.500	ug/l	1	EPA 8021B	06/04/00	06/04/00	0060103	
Toluene	**1.45**	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*108 %*	*75-120*							
U3 (P005612-12) Water					Sampled: 05/26/00 Received: 05/26/00				
Benzene	**1.50**	0.500	ug/l	1	EPA 8021B	06/04/00	06/04/00	0060103	
Toluene	**0.954**	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.01**	0.500	"	"	"	"	"	"	
Xylenes (total)	**2.39**	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*101 %*	*75-120*							

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Trip Blank (P005612-13) Water					Sampled: 05/26/00 Received: 05/26/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/04/00	06/04/00	0060103	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*83.4 %*	*75-120*							

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B17 (P005612-01) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0509**	0.00100	mg/l	1	EPA 6020	06/12/00	06/12/00	0060339	
Barium	**0.195**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0191**	0.00100	"	"	"	"	"	"	
Copper	**0.0290**	0.00200	"	"	"	"	"	"	
Lead	**0.0171**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	**0.00126**	0.00100	"	"	EPA 6020	06/12/00	06/15/00	0060339	
Silver	ND	0.00100	"	"	"	"	06/12/00	"	
Zinc	**0.0485**	0.00500	"	"	"	"	"	"	
B4 (P005612-02) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0350**	0.00100	mg/l	1	EPA 6020	06/12/00	06/12/00	0060339	
Barium	**0.245**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0275**	0.00100	"	"	"	"	"	"	
Copper	**0.0425**	0.00200	"	"	"	"	"	"	
Lead	**0.0140**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	ND	0.00100	"	"	EPA 6020	06/12/00	06/12/00	0060339	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0750**	0.00500	"	"	"	"	"	"	
B18 (P005612-03) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0228**	0.00100	mg/l	1	EPA 6020	06/12/00	06/12/00	0060339	
Barium	**0.203**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0211**	0.00100	"	"	"	"	"	"	
Copper	**0.0313**	0.00200	"	"	"	"	"	"	
Lead	**0.00922**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	ND	0.00100	"	"	EPA 6020	06/12/00	06/12/00	0060339	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0558**	0.00500	"	"	"	"	"	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Total Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B37 (P005612-04) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.418**	0.00706	mg/l	7.06	EPA 6020	06/12/00	06/12/00	0060339	
Barium	**0.0920**	0.00200	"	1	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00526**	0.00100	"	"	"	"	"	"	
Copper	**0.0131**	0.00200	"	"	"	"	"	"	
Lead	**0.00234**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	ND	0.00100	"	"	EPA 6020	06/12/00	06/12/00	0060339	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0215**	0.00500	"	"	"	"	"	"	
B22 (P005612-05) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0255**	0.00100	mg/l	1	EPA 6020	06/12/00	06/12/00	0060339	
Barium	**0.126**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0105**	0.00100	"	"	"	"	"	"	
Copper	**0.0187**	0.00200	"	"	"	"	"	"	
Lead	**0.00561**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	ND	0.00100	"	"	EPA 6020	06/12/00	06/12/00	0060339	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0385**	0.00500	"	"	"	"	"	"	
U5 (P005612-06) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0104**	0.00100	mg/l	1	EPA 6020	06/12/00	06/12/00	0060339	
Barium	**0.0748**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00225**	0.00100	"	"	"	"	"	"	
Copper	**0.00912**	0.00200	"	"	"	"	"	"	
Lead	**0.00370**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	ND	0.00100	"	"	EPA 6020	06/12/00	06/12/00	0060339	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.286**	0.00500	"	"	"	"	"	"	

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B35 (P005612-07) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0102**	0.00100	mg/l	1	EPA 6020	06/12/00	06/12/00	0060339	
Barium	**0.116**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00786**	0.00100	"	"	"	"	"	"	
Copper	**0.0114**	0.00200	"	"	"	"	"	"	
Lead	**0.00264**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	**0.00130**	0.00100	"	"	EPA 6020	06/12/00	06/15/00	0060339	
Silver	ND	0.00100	"	"	"	"	06/12/00	"	
Zinc	**0.0233**	0.00500	"	"	"	"	"	"	
B36 (P005612-08) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0105**	0.00100	mg/l	1	EPA 6020	06/12/00	06/13/00	0060339	
Barium	**0.120**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00819**	0.00100	"	"	"	"	"	"	
Copper	**0.0120**	0.00200	"	"	"	"	"	"	
Lead	**0.00251**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	ND	0.00100	"	"	EPA 6020	06/12/00	06/15/00	0060339	
Silver	ND	0.00100	"	"	"	"	06/13/00	"	
Zinc	**0.0250**	0.00500	"	"	"	"	"	"	
B56 (P005612-09) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0367**	0.00100	mg/l	1	EPA 6020	06/12/00	06/13/00	0060339	
Barium	**0.259**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0283**	0.00100	"	"	"	"	"	"	
Copper	**0.0443**	0.00200	"	"	"	"	"	"	
Lead	**0.0147**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	ND	0.00100	"	"	EPA 6020	06/12/00	06/15/00	0060339	
Silver	ND	0.00100	"	"	"	"	06/13/00	"	
Zinc	**0.0785**	0.00500	"	"	"	"	"	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Total Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
U4 (P005612-10) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0188**	0.00100	mg/l	1	EPA 6020	06/12/00	06/13/00	0060339	
Barium	**0.101**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00367**	0.00100	"	"	"	"	"	"	
Copper	**0.00749**	0.00200	"	"	"	"	"	"	
Lead	**0.00268**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	ND	0.00100	"	"	EPA 6020	06/12/00	06/15/00	0060339	
Silver	ND	0.00100	"	"	"	"	06/13/00	"	
Zinc	**0.0149**	0.00500	"	"	"	"	"	"	
U2 (P005612-11) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0110**	0.00100	mg/l	1	EPA 6020	06/12/00	06/13/00	0060339	
Barium	**0.0503**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00137**	0.00100	"	"	"	"	"	"	
Copper	**0.00537**	0.00200	"	"	"	"	"	"	
Lead	**0.00145**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	ND	0.00100	"	"	EPA 6020	06/12/00	06/15/00	0060339	
Silver	ND	0.00100	"	"	"	"	06/13/00	"	
Zinc	**0.0109**	0.00500	"	"	"	"	"	"	
U3 (P005612-12) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0400**	0.00100	mg/l	1	EPA 6020	06/12/00	06/13/00	0060339	
Barium	**0.171**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0149**	0.00100	"	"	"	"	"	"	
Copper	**0.0116**	0.00200	"	"	"	"	"	"	
Lead	**0.0182**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/08/00	06/09/00	0060236	
Selenium	**0.00145**	0.00100	"	"	EPA 6020	06/12/00	06/15/00	0060339	
Silver	ND	0.00100	"	"	"	"	06/13/00	"	
Zinc	**0.139**	0.00500	"	"	"	"	"	"	

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Dissolved Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B17 (P005612-01) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0490**	0.00100	mg/l	1	EPA 6020	06/10/00	06/10/00	0060327	
Barium	**0.0861**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	**0.00889**	0.00200	"	"	"	"	"	"	
Lead	**0.00175**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060026	
Selenium	**0.00159**	0.00100	"	"	EPA 6020	06/10/00	06/10/00	0060327	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	ND	0.00500	"	"	"	"	"	"	
U3 (P005612-12) Water					Sampled: 05/26/00 Received: 05/26/00				
Arsenic	**0.0308**	0.00100	mg/l	1	EPA 6020	06/10/00	06/10/00	0060327	
Barium	**0.0900**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	**0.0210**	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060026	
Selenium	**0.00110**	0.00100	"	"	EPA 6020	06/10/00	06/12/00	0060327	
Silver	ND	0.00100	"	"	"	"	06/10/00	"	
Zinc	**0.0186**	0.00500	"	"	"	"	"	"	

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B17 (P005612-01) Water					Sampled: 05/26/00	Received: 05/26/00			**R-05**
Acenaphthene	ND	20.0	ug/l	10	EPA 8270B-m	06/01/00	06/08/00	0060014	R-03
Acenaphthylene	ND	1.00	"	"	"	"	"	"	
Anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Fluorene	**10.1**	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	10.0	"	"	"	"	"	"	R-03
Phenanthrene	**5.33**	1.00	"	"	"	"	"	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*105 %*	*20-140*							
Surr: Nitrobenzene-d5	*152 %*	*35-138*							*S-09*
Surr: p-Terphenyl-d14	*80.0 %*	*43-135*							
B4 (P005612-02) Water					Sampled: 05/26/00	Received: 05/26/00			**R-05**
Acenaphthene	**13.2**	5.00	ug/l	50	EPA 8270B-m	06/01/00	06/09/00	0060014	R-03
Acenaphthylene	ND	5.00	"	"	"	"	"	"	R-03
Anthracene	ND	5.00	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	1.00	"	10	"	"	06/08/00	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	**1.19**	1.00	"	"	"	"	"	"	
Fluorene	**17.3**	5.00	"	50	"	"	06/09/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	1.00	"	10	"	"	06/08/00	"	
Naphthalene	ND	25.0	"	50	"	"	"	"	R-03
Phenanthrene	**28.4**	1.00	"	10	"	"	06/09/00	"	
Pyrene	**2.24**	1.00	"	"	"	"	06/08/00	"	
Surr: 2-Fluorobiphenyl	*NR*	*20-140*							*S-01*

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B4 (P005612-02) Water					Sampled: 05/26/00	Received: 05/26/00			R-05
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-0*
Surr: p-Terphenyl-d14	*72.0 %*	*43-135*							
B18 (P005612-03) Water					Sampled: 05/26/00	Received: 05/26/00			R-0
Acenaphthene	ND	5.00	ug/l	10	EPA 8270B-m	06/01/00	06/08/00	0060014	R-0
Acenaphthylene	ND	1.00	"	"	"	"	"	"	
Anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Fluorene	ND	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	1.00	"	"	"	"	"	"	
Phenanthrene	ND	1.00	"	"	"	"	"	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*45.8 %*	*20-140*							
Surr: Nitrobenzene-d5	*76.3 %*	*35-138*							
Surr: p-Terphenyl-d14	*53.8 %*	*43-135*							
B37 (P005612-04) Water					Sampled: 05/26/00	Received: 05/26/00			
Acenaphthene	ND	0.100	ug/l	1	EPA 8270B-m	06/01/00	06/09/00	0060014	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	1.00	"	10	"	"	06/08/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/09/00	"	

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B37 (P005612-04) Water					Sampled: 05/26/00 Received: 05/26/00				
Naphthalene	ND	1.00	ug/l	10	EPA 8270B-m	06/01/00	06/08/00	0060014	R-03
Phenanthrene	ND	0.100	"	1	"	"	06/09/00	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*87.5 %*	*20-140*							
Surr: Nitrobenzene-d5	*117 %*	*35-138*							
Surr: p-Terphenyl-d14	*92.5 %*	*43-135*							
B22 (P005612-05) Water					Sampled: 05/26/00 Received: 05/26/00				R-05
Acenaphthene	ND	25.0	ug/l	50	EPA 8270B-m	06/01/00	06/12/00	0060014	R-03
Acenaphthylene	ND	5.00	"	"	"	"	"	"	R-03
Anthracene	ND	5.00	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	2.00	"	20	"	"	06/08/00	"	
Benzo (a) pyrene	ND	2.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	2.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	2.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	2.00	"	"	"	"	"	"	
Chrysene	ND	2.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	4.00	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	50	"	"	06/12/00	"	R-03
Fluorene	**15.4**	5.00	"	"	"	"	"	"	R-03
Indeno (1,2,3-cd) pyrene	ND	2.00	"	20	"	"	06/08/00	"	
Naphthalene	ND	25.0	"	50	"	"	06/12/00	"	R-03
Phenanthrene	**21.5**	5.00	"	"	"	"	"	"	R-03
Pyrene	ND	5.00	"	"	"	"	"	"	R-03
Surr: 2-Fluorobiphenyl	*NR*	*20-140*							*S-01*
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-01*
Surr: p-Terphenyl-d14	*66.7 %*	*43-135*							

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
U5 (P005612-06) Water					Sampled: 05/26/00	Received: 05/26/00			**R-05**
Acenaphthene	ND	5.00	ug/l	50	EPA 8270B-m	06/01/00	06/09/00	0060014	R-03
Acenaphthylene	ND	5.00	"	"	"	"	"	"	R-03
Anthracene	ND	1.00	"	10	"	"	06/09/00	"	
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	50	"	"	06/09/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	1.00	"	10	"	"	06/09/00	"	
Naphthalene	ND	5.00	"	50	"	"	06/09/00	"	R-03
Phenanthrene	**2.04**	1.00	"	10	"	"	06/09/00	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*NR*	*20-140*							*S-01*
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-01*
Surr: p-Terphenyl-d14	*87.1 %*	*43-135*							
B35 (P005612-07) Water					Sampled: 05/26/00	Received: 05/26/00			**R-05**
Acenaphthene	ND	50.0	ug/l	10	EPA 8270B-m	06/01/00	06/08/00	0060014	R-03
Acenaphthylene	ND	1.00	"	"	"	"	"	"	
Anthracene	**2.61**	1.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	**2.93**	1.00	"	"	"	"	"	"	
Fluorene	**22.5**	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	20.0	"	"	"	"	"	"	R-03
Phenanthrene	**20.7**	1.00	"	"	"	"	"	"	
Pyrene	**1.73**	1.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*74.6 %*	*20-140*							

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B35 (P005612-07) Water					Sampled: 05/26/00	Received: 05/26/00			**R-05**
Surr: Nitrobenzene-d5	*167 %*	*35-138*							*S-09*
Surr: p-Terphenyl-d14	*67.1 %*	*43-135*							
B36 (P005612-08) Water					Sampled: 05/26/00	Received: 05/26/00			
Acenaphthene	ND	1.00	ug/l	10	EPA 8270B-m	06/01/00	06/12/00	0060014	R-03
Acenaphthylene	ND	1.00	"	"	"	"	"	"	R-03
Anthracene	ND	1.00	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	0.100	"	1	"	"	06/09/00	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	10	"	"	06/12/00	"	R-03
Fluorene	ND	1.00	"	"	"	"	"	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/09/00	"	
Naphthalene	ND	5.00	"	10	"	"	06/12/00	"	R-03
Phenanthrene	ND	1.00	"	"	"	"	"	"	R-03
Pyrene	ND	0.100	"	1	"	"	06/09/00	"	
Surr: 2-Fluorobiphenyl	*141 %*	*20-140*							*A-01*
Surr: Nitrobenzene-d5	*113 %*	*35-138*							
Surr: p-Terphenyl-d14	*95.8 %*	*43-135*							
B56 (P005612-09) Water					Sampled: 05/26/00	Received: 05/26/00			**R-05**
Acenaphthene	ND	50.0	ug/l	10	EPA 8270B-m	06/01/00	06/09/00	0060014	R-03
Acenaphthylene	ND	1.00	"	"	"	"	"	"	
Anthracene	ND	10.0	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	**1.20**	1.00	"	"	"	"	"	"	
Fluorene	ND	50.0	"	"	"	"	"	"	R-03
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
B56 (P005612-09) Water					Sampled: 05/26/00 Received: 05/26/00				**R-05**
Naphthalene	ND	10.0	ug/l	10	EPA 8270B-m	06/01/00	06/09/00	0060014	R-03
Phenanthrene	**20.9**	1.00	"	"	"	"	"	"	
Pyrene	**1.72**	1.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*80.4 %*	*20-140*							
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-03*
Surr: p-Terphenyl-d14	*70.8 %*	*43-135*							
U4 (P005612-10) Water					Sampled: 05/26/00 Received: 05/26/00				**R-05**
Acenaphthene	ND	20.0	ug/l	10	EPA 8270B-m	06/01/00	06/09/00	0060014	R-03
Acenaphthylene	ND	1.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Fluorene	**7.44**	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	10.0	"	"	"	"	"	"	R-03
Phenanthrene	**7.11**	1.00	"	"	"	"	"	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*56.2 %*	*20-140*							
Surr: Nitrobenzene-d5	*150 %*	*35-138*							*S-09*
Surr: p-Terphenyl-d14	*73.3 %*	*43-135*							

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
U2 (P005612-11) Water					Sampled: 05/26/00 Received: 05/26/00				
Acenaphthene	**0.119**	0.100	ug/l	1	EPA 8270B-m	06/01/00	06/09/00	0060014	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	**0.239**	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	2.00	"	"	"	"	"	"	R-03
Phenanthrene	**0.122**	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*93.7 %*	*20-140*							
Surr: Nitrobenzene-d5	*114 %*	*35-138*							
Surr: p-Terphenyl-d14	*78.7 %*	*43-135*							
U3 (P005612-12) Water					Sampled: 05/26/00 Received: 05/26/00				
Acenaphthene	ND	0.500	ug/l	1	EPA 8270B-m	06/01/00	06/09/00	0060014	R-03
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	**0.119**	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	2.00	"	"	"	"	"	"	R-03
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*56.2 %*	*20-140*							

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
U3 (P005612-12) Water						Sampled: 05/26/00	Received: 05/26/00		
Surr: Nitrobenzene-d5	*122 %*	*35-138*							
Surr: p-Terphenyl-d14	*88.3 %*	*43-135*							

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060103 - EPA 5030										
Blank (0060103-BLK1)				Prepared & Analyzed: 06/04/00						
Benzene	ND	0.500	ug/l							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surr: 4-BFB (PID)	*49.8*		"	*50.0*		*99.6*	*75-120*			
LCS (0060103-BS2)				Prepared & Analyzed: 06/04/00						
Benzene	18.4	0.500	ug/l	20.0		92.0	70-130			
Toluene	18.8	0.500	"	20.0		94.0	70-130			
Ethylbenzene	18.5	0.500	"	20.0		92.5	70-130			
Xylenes (total)	55.4	1.00	"	60.0		92.3	70-130			
Surr: 4-BFB (PID)	*52.9*		"	*50.0*		*106*	*75-120*			
Matrix Spike (0060103-MS1)		**Source: P005612-11**		Prepared & Analyzed: 06/04/00						
Benzene	18.9	0.500	ug/l	20.0	0.885	90.1	70-130			
Toluene	18.4	0.500	"	20.0	1.45	84.7	70-130			
Ethylbenzene	19.0	0.500	"	20.0	ND	93.4	70-130			
Xylenes (total)	56.3	1.00	"	60.0	ND	92.5	70-130			
Surr: 4-BFB (PID)	*53.7*		"	*50.0*		*107*	*75-120*			
Matrix Spike Dup (0060103-MSD1)		**Source: P005612-11**		Prepared & Analyzed: 06/04/00						
Benzene	18.0	0.500	ug/l	20.0	0.885	85.6	70-130	4.88	15	
Toluene	17.4	0.500	"	20.0	1.45	79.7	70-130	5.59	15	
Ethylbenzene	17.5	0.500	"	20.0	ND	85.9	70-130	8.22	15	
Xylenes (total)	51.9	1.00	"	60.0	ND	85.1	70-130	8.13	15	
Surr: 4-BFB (PID)	*44.4*		"	*50.0*		*88.8*	*75-120*			

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060109 - EPA 5030										
Blank (0060109-BLK1)				Prepared & Analyzed: 06/05/00						
Benzene	ND	0.500	ug/l							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surr: 4-BFB (PID)	*52.9*		"	*50.0*		*106*	*75-120*			
LCS (0060109-BS2)				Prepared & Analyzed: 06/05/00						
Benzene	21.3	0.500	ug/l	20.0		106	70-130			
Toluene	18.7	0.500	"	20.0		93.5	70-130			
Ethylbenzene	20.1	0.500	"	20.0		101	70-130			
Xylenes (total)	60.3	1.00	"	60.0		100	70-130			
Surr: 4-BFB (PID)	*54.0*		"	*50.0*		*108*	*75-120*			

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060236 - EPA 7470										
Blank (0060236-BLK1)				Prepared: 06/08/00 Analyzed: 06/09/00						
Mercury	ND	0.000200	mg/l							
LCS (0060236-BS1)				Prepared: 06/08/00 Analyzed: 06/09/00						
Mercury	0.00502	0.000200	mg/l	0.00500		100	80-120			
Duplicate (0060236-DUP1)		Source: P005612-04		Prepared: 06/08/00 Analyzed: 06/09/00						
Mercury	ND	0.000200	mg/l		ND				20	
Matrix Spike (0060236-MS1)		Source: P005612-04		Prepared: 06/08/00 Analyzed: 06/09/00						
Mercury	0.00500	0.000200	mg/l	0.00500	ND	100	75-125			
Matrix Spike (0060236-MS2)		Source: P005612-11		Prepared: 06/08/00 Analyzed: 06/09/00						
Mercury	0.00473	0.000200	mg/l	0.00500	ND	94.6	75-125			
Batch 0060339 - EPA 200/3005										
Blank (0060339-BLK1)				Prepared: 06/12/00 Analyzed: 06/13/00						
Arsenic	ND	0.00100	mg/l							
Barium	ND	0.00200	"							
Cadmium	ND	0.00100	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00200	"							
Lead	ND	0.00100	"							
Selenium	ND	0.00100	"							
Silver	ND	0.00100	"							
Zinc	ND	0.00500	"							

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060339 - EPA 200/3005										
LCS (0060339-BS1)				Prepared: 06/12/00 Analyzed: 06/15/00						
Arsenic	0.109	0.0100	mg/l	0.100		109	80-120			
Barium	0.106	0.00200	"	0.100		106	80-120			
Cadmium	0.101	0.00100	"	0.100		101	80-120			
Chromium	0.105	0.00100	"	0.100		105	80-120			
Copper	0.102	0.00200	"	0.100		102	80-120			
Lead	0.102	0.00100	"	0.100		102	80-120			
Selenium	0.104	0.0100	"	0.100		104	80-120			
Silver	0.0510	0.00100	"	0.0500		102	80-120			
Zinc	0.105	0.00500	"	0.100		105	80-120			
Duplicate (0060339-DUP1)		**Source: P005612-01**		Prepared & Analyzed: 06/12/00						
Arsenic	0.0503	0.00100	mg/l		0.0509			1.19	20	
Barium	0.193	0.00200	"		0.195			1.03	20	
Cadmium	ND	0.00100	"		ND				20	
Chromium	0.0182	0.00100	"		0.0191			4.83	20	
Copper	0.0285	0.00200	"		0.0290			1.74	20	
Lead	0.0169	0.00100	"		0.0171			1.18	20	
Selenium	ND	0.00100	"		0.00126			119	20	Q-06
Silver	ND	0.00100	"		ND				20	
Zinc	0.0476	0.00500	"		0.0485			1.87	20	
Matrix Spike (0060339-MS1)		**Source: P005612-01**		Prepared: 06/12/00 Analyzed: 06/15/00						
Arsenic	0.159	0.0100	mg/l	0.100	0.0509	108	75-125			
Barium	0.304	0.00200	"	0.100	0.195	109	75-125			
Cadmium	0.0993	0.00100	"	0.100	ND	99.3	75-125			
Chromium	0.125	0.00100	"	0.100	0.0191	106	75-125			
Copper	0.128	0.00200	"	0.100	0.0290	99.0	75-125			
Lead	0.115	0.00100	"	0.100	0.0171	97.9	75-125			
Selenium	0.101	0.0100	"	0.100	ND	99.7	75-125			
Silver	0.0514	0.00100	"	0.0500	ND	103	75-125			
Zinc	0.149	0.00500	"	0.100	0.0485	101	75-125			

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060339 - EPA 200/3005										
Matrix Spike (0060339-MS2)	**Source: P005612-11**			Prepared: 06/12/00 Analyzed: 06/15/00						
Arsenic	0.118	0.0100	mg/l	0.100	0.0110	107	75-125			
Barium	0.149	0.00200	"	0.100	0.0503	98.7	75-125			
Cadmium	0.0985	0.00100	"	0.100	ND	98.4	75-125			
Chromium	0.106	0.00100	"	0.100	0.00137	105	75-125			
Copper	0.104	0.00200	"	0.100	0.00537	98.6	75-125			
Lead	0.0986	0.00100	"	0.100	0.00145	97.1	75-125			
Selenium	0.0992	0.0100	"	0.100	ND	99.2	75-125			
Silver	0.0516	0.00100	"	0.0500	ND	103	75-125			
Zinc	0.109	0.00500	"	0.100	0.0109	98.1	75-125			

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Dissolved Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060026 - EPA 7470										
Blank (0060026-BLK1)				Prepared & Analyzed: 06/01/00						
Mercury	ND	0.000200	mg/l							
LCS (0060026-BS1)				Prepared & Analyzed: 06/01/00						
Mercury	0.00526	0.000200	mg/l	0.00500		105	80-120			
Duplicate (0060026-DUP1)		Source: P006001-01		Prepared & Analyzed: 06/01/00						
Mercury	ND	0.000200	mg/l		ND				20	
Matrix Spike (0060026-MS1)		Source: P006001-01		Prepared & Analyzed: 06/01/00						
Mercury	0.00509	0.000200	mg/l	0.00500	ND	102	75-125			
Matrix Spike (0060026-MS2)		Source: P005612-12		Prepared & Analyzed: 06/01/00						
Mercury	0.00488	0.000200	mg/l	0.00500	ND	97.6	75-125			
Batch 0060327 - EPA 200/3005										
Blank (0060327-BLK1)				Prepared & Analyzed: 06/10/00						
Arsenic	ND	0.00100	mg/l							
Barium	ND	0.00200	"							
Cadmium	ND	0.000500	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00200	"							
Lead	ND	0.00100	"							
Selenium	ND	0.00100	"							
Silver	ND	0.00100	"							
Zinc	ND	0.00500	"							

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Dissolved Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060327 - EPA 200/3005										
LCS (0060327-BS1)				Prepared & Analyzed: 06/10/00						
Arsenic	0.103	0.00100	mg/l	0.100		103	80-120			
Barium	0.0998	0.00200	"	0.100		99.8	80-120			
Cadmium	0.101	0.000500	"	0.100		101	80-120			
Chromium	0.102	0.00100	"	0.100		102	80-120			
Copper	0.0983	0.00200	"	0.100		98.3	80-120			
Lead	0.0964	0.00100	"	0.100		96.4	80-120			
Selenium	0.101	0.0100	"	0.100		101	85-115			
Silver	0.0519	0.00100	"	0.0500		104	80-120			
Zinc	0.0994	0.00500	"	0.100		99.4	80-120			
Duplicate (0060327-DUP1)		**Source: P005584-01**		Prepared & Analyzed: 06/10/00						
Arsenic	0.00326	0.00100	mg/l		0.00362			10.5	20	
Barium	0.0354	0.00200	"		0.0363			2.51	20	
Cadmium	ND	0.000500	"		ND				20	
Chromium	ND	0.00100	"		0.00101			3.02	20	Q-06
Copper	ND	0.00200	"		ND			19.0	20	Q-06
Lead	0.00302	0.00100	"		0.00319			5.48	20	
Selenium	0.00201	0.00100	"		0.00216			7.19	20	
Silver	ND	0.00100	"		ND			0	20	
Zinc	0.00535	0.00500	"		0.00614			13.8	20	
Matrix Spike (0060327-MS1)		**Source: P005584-01**		Prepared & Analyzed: 06/10/00						
Arsenic	0.110	0.00100	mg/l	0.100	0.00362	106	75-125			
Barium	0.134	0.00200	"	0.100	0.0363	97.7	75-125			
Cadmium	0.101	0.000500	"	0.100	ND	101	75-125			
Chromium	0.105	0.00100	"	0.100	0.00101	104	75-125			
Copper	0.0966	0.00200	"	0.100	ND	95.6	75-125			
Lead	0.0958	0.00100	"	0.100	0.00319	92.6	75-125			
Selenium	0.104	0.0100	"	0.100	ND	102	75-125			
Silver	0.0517	0.00100	"	0.0500	ND	103	75-125			
Zinc	0.0992	0.00500	"	0.100	0.00614	93.1	75-125			

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Dissolved Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060327 - EPA 200/3005										
Matrix Spike (0060327-MS2)		**Source: P005612-12**		Prepared: 06/10/00 Analyzed: 06/12/00						
Arsenic	0.135	0.0100	mg/l	0.100	0.0308	104	75-125			
Barium	0.190	0.00200	"	0.100	0.0900	100	75-125			
Cadmium	0.104	0.000500	"	0.100	ND	104	75-125			
Chromium	0.105	0.00100	"	0.100	ND	104	75-125			
Copper	0.118	0.00200	"	0.100	0.0210	97.0	75-125			
Lead	0.0970	0.00100	"	0.100	ND	96.2	75-125			
Selenium	0.0944	0.0100	"	0.100	ND	93.3	75-125			
Silver	0.0529	0.00100	"	0.0500	ND	106	75-125			
Zinc	0.114	0.00500	"	0.100	0.0186	95.4	75-125			

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060014 - EPA 3520/600 Series										
Blank (0060014-BLK1)				Prepared: 06/01/00 Analyzed: 06/09/00						
Acenaphthene	ND	0.100	ug/l							
Acenaphthylene	ND	0.100	"							
Anthracene	ND	0.100	"							
Benzo (a) anthracene	ND	0.100	"							
Benzo (a) pyrene	ND	0.100	"							
Benzo (b) fluoranthene	ND	0.100	"							
Benzo (ghi) perylene	ND	0.100	"							
Benzo (k) fluoranthene	ND	0.100	"							
Chrysene	ND	0.100	"							
Dibenzo (a,h) anthracene	ND	0.200	"							
Fluoranthene	ND	0.100	"							
Fluorene	ND	0.100	"							
Indeno (1,2,3-cd) pyrene	ND	0.100	"							
Naphthalene	ND	0.100	"							
Phenanthrene	ND	0.100	"							
Pyrene	ND	0.100	"							
Surr: 2-Fluorobiphenyl	*1.26*		"	*2.50*		*50.4*	*20-140*			
Surr: Nitrobenzene-d5	*2.65*		"	*2.50*		*106*	*35-138*			
Surr: p-Terphenyl-d14	*3.01*		"	*2.50*		*120*	*43-135*			
LCS (0060014-BS1)				Prepared: 06/01/00 Analyzed: 06/09/00						
Acenaphthene	1.16	0.100	ug/l	1.00		116	26-135			
Benzo (a) pyrene	0.875	0.100	"	1.00		87.5	38-137			
Pyrene	0.783	0.100	"	1.00		78.3	33-133			
Surr: 2-Fluorobiphenyl	*2.32*		"	*2.50*		*92.8*	*20-140*			
Surr: Nitrobenzene-d5	*2.90*		"	*2.50*		*116*	*35-138*			
Surr: p-Terphenyl-d14	*2.76*		"	*2.50*		*110*	*43-135*			

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060014 - EPA 3520/600 Series										
Matrix Spike (0060014-MS1)	**Source: P005612-07**			Prepared: 06/01/00 Analyzed: 06/09/00						**R-05**
Acenaphthene	ND	1.00	ug/l	0.962	ND		26-135			Q-08
Benzo (a) pyrene	ND	1.00	"	0.962	ND		38-137			Q-08
Pyrene	1.80	1.00	"	0.962	1.73	7.28	33-133			Q-07
Surr: 2-Fluorobiphenyl	*2.61*		"	*2.40*		*109*	*20-140*			
Surr: Nitrobenzene-d5	*3.63*		"	*2.40*		*151*	*35-138*			*S-09*
Surr: p-Terphenyl-d14	*1.34*		"	*2.40*		*55.8*	*43-135*			
Matrix Spike Dup (0060014-MSD1)	**Source: P005612-07**			Prepared: 06/01/00 Analyzed: 06/09/00						**R-05**
Acenaphthene	ND	1.00	ug/l	0.962	ND		26-135		60	Q-08
Benzo (a) pyrene	ND	1.00	"	0.962	ND		38-137		60	Q-08
Pyrene	2.12	1.00	"	0.962	1.73	40.5	33-133	16.3	60	
Surr: 2-Fluorobiphenyl	*3.04*		"	*2.40*		*127*	*20-140*			
Surr: Nitrobenzene-d5	*3.98*		"	*2.40*		*166*	*35-138*			*S-09*
Surr: p-Terphenyl-d14	*1.51*		"	*2.40*		*62.9*	*43-135*			

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IT Corporation - Portland	Project: Willbridge (TOSCO)	
15055 SW Sequoia Parkway #140	Project Number: N/A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/19/00 12:53

Notes and Definitions

A-01	Matrix interferences suspected. Further reanalysis not required as surrogate out of spec high by 1%.
Q-06	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
Q-07	The recovery of this spike is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
Q-08	Unable to quantitate spike recovery due to matrix interference and/or dilution necessary for analysis.
R-03	The reporting limit for this analyte was raised due to matrix interference.
R-05	Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
S-09	Surrogate recovery is outside control limits due to matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
wet	Sample results reported on a wet weight basis
RPD	Relative Percent Difference

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CHAIN OF CUSTODY REPORT

Work Order #: P005612

CLIENT: Tosco (Willbridge)
REPORT TO: IT Corp (Tim Stone)
ADDRESS: 15055 SW Sequoia PKWY Suite 140 Pfld OR 97224
PHONE: (503) 624-7200 FAX: (503) 620-7658
PROJECT NAME: Tosco (Willbridge)
PROJECT NUMBER:
SAMPLED BY: Cory Lavelle

INVOICE TO: IT PDX
P.O. NUMBER:

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: [10] 7 5 4 3 2 1 <1
STD. Petroleum Hydrocarbon Analyses: 5 4 3 2 1 <1
STD. OTHER Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	BTEX	BAHs	Metals	Dissolved Metals	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1.	B17	5-26-00/1215	X	X	X	X	W	7		
2.	B4	5-26-00/1120	X	X	X		W	6		
3.	B18	5-26-00/0920	X	X	X		W	6		
4.	B37	5-26-00/0945	X	X	X		W	6		
5.	B22	5-26-00/1020	X	X	X		W	6		
6.	U5	5-26-00/1045	X	X	X		W	6		
7.	B35	5-26-00/1315	X	X	X		W	618	Matrix spike	
8.	B36	5-26-00/1355	X	X	X		W	6		
9.	B56	5-26-00/1120	X	X	X		W	6		
10.	U4	5-26-00/1435	X	X	X		W	6		
11.	U2	5-26-00/1510	X	X	X		W	6		
12.	U3	5-26-00/1530	X	X	X	X	W	7		
13.	Trip Blank	— —	X				W	2		
14.										
15.										

RELINQUISHED BY: Cory Lavelle — DATE: 5-26-00
PRINT NAME: Cory Lavelle — FIRM: IT Corp — TIME: 1650

RECEIVED BY: Joanca Roberts
PRINT NAME: JROBERTS — FIRM: NCA — DATE: 5/26/00 — TIME: 1650

RELINQUISHED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

RECEIVED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

ADDITIONAL REMARKS:

TEMP: 5°

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ORIGINAL IN PROJECT FILING

IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW 33	P006001-01	Water	05/30/00 09:45	05/31/00 17:00
MW 40	P006001-02	Water	05/30/00 10:20	05/31/00 17:00
MW 37	P006001-03	Water	05/30/00 10:55	05/31/00 17:00
MW 63	P006001-04	Water	05/30/00 11:20	05/31/00 17:00
MW 15	P006001-05	Water	05/30/00 11:40	05/31/00 17:00
MW 21	P006001-06	Water	05/30/00 12:05	05/31/00 17:00
MW 22	P006001-07	Water	05/30/00 12:40	05/31/00 17:00
MW 32	P006001-08	Water	05/30/00 13:10	05/31/00 17:00
MW 31	P006001-09	Water	05/30/00 14:10	05/31/00 17:00
MW 26	P006001-10	Water	05/30/00 14:40	05/31/00 17:00
MW 10	P006001-11	Water	05/31/00 09:10	05/31/00 17:00
MW 11	P006001-12	Water	05/31/00 09:35	05/31/00 17:00
MW 36	P006001-13	Water	05/31/00 10:20	05/31/00 17:00
MW 13	P006001-14	Water	05/31/00 11:55	05/31/00 17:00
MW 8	P006001-15	Water	05/31/00 12:35	05/31/00 17:00
Trip Blank	P006001-16	Water	05/30/00 12:00	05/31/00 17:00

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 33 (P006001-01) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060108	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*102 %*	*75-120*							
MW 40 (P006001-02) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060108	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*102 %*	*75-120*							
MW 37 (P006001-03RE1) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	**33.0**	0.500	ug/l	1	EPA 8021B	06/06/00	06/06/00	0060146	
Toluene	**0.957**	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	**2.10**	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*102 %*	*75-120*							
MW 63 (P006001-04RE1) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	**31.4**	0.500	ug/l	1	EPA 8021B	06/06/00	06/06/00	0060146	
Toluene	**0.755**	0.500	"	"	"	"	"	"	
Ethylbenzene	**0.768**	0.500	"	"	"	"	"	"	
Xylenes (total)	**1.72**	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*97.2 %*	*75-120*							

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 15 (P006001-05) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060108	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*96.6 %*	*75-120*							
MW 21 (P006001-06RE1) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/06/00	06/06/00	0060146	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*87.6 %*	*75-120*							
MW 22 (P006001-07RE1) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	**2140**	25.0	ug/l	50	EPA 8021B	06/06/00	06/06/00	0060146	
Toluene	**1560**	25.0	"	"	"	"	"	"	
Ethylbenzene	**4240**	25.0	"	"	"	"	"	"	
Xylenes (total)	**9150**	50.0	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*89.4 %*	*75-120*							
MW 32 (P006001-08) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060108	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*87.4 %*	*75-120*							

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 31 (P006001-09RE1) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/06/00	06/06/00	0060146	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*87.6 %*	*75-120*							
MW 26 (P006001-10RE1) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/06/00	06/06/00	0060146	
Toluene	**7.11**	0.500	"	"	"	"	"	"	
Ethylbenzene	**7.40**	0.500	"	"	"	"	"	"	
Xylenes (total)	**9.62**	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*120 %*	*75-120*							
MW 10 (P006001-11) Water					Sampled: 05/31/00 Received: 05/31/00				
Benzene	**6.78**	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060108	
Toluene	**0.794**	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	**1.02**	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*96.4 %*	*75-120*							
MW 11 (P006001-12RE1) Water					Sampled: 05/31/00 Received: 05/31/00				
Benzene	**4120**	25.0	ug/l	50	EPA 8021B	06/06/00	06/06/00	0060146	
Toluene	**1460**	25.0	"	"	"	"	"	"	
Ethylbenzene	**2720**	25.0	"	"	"	"	"	"	
Xylenes (total)	**9290**	50.0	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*88.6 %*	*75-120*							

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 36 (P006001-13) Water					Sampled: 05/31/00 Received: 05/31/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060108	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*88.4 %*	*75-120*							
MW 13 (P006001-14) Water					Sampled: 05/31/00 Received: 05/31/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060108	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*94.0 %*	*75-120*							
MW 8 (P006001-15) Water					Sampled: 05/31/00 Received: 05/31/00				
Benzene	**16.6**	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060108	
Toluene	**3.85**	0.500	"	"	"	"	"	"	
Ethylbenzene	**3.05**	0.500	"	"	"	"	"	"	
Xylenes (total)	**10.2**	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*116 %*	*75-120*							
Trip Blank (P006001-16) Water					Sampled: 05/30/00 Received: 05/31/00				
Benzene	ND	0.500	ug/l	1	EPA 8021B	06/05/00	06/05/00	0060108	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*87.0 %*	*75-120*							

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 33 (P006001-01) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.00655**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.111**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00179**	0.00100	"	"	"	"	"	"	
Copper	**0.00338**	0.00200	"	"	"	"	"	"	
Lead	**0.00154**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060027	
Selenium	ND	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.00721**	0.00500	"	"	"	"	"	"	
MW 40 (P006001-02) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.0250**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.107**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00783**	0.00100	"	"	"	"	"	"	
Copper	**0.0107**	0.00200	"	"	"	"	"	"	
Lead	**0.00837**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060027	
Selenium	ND	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0245**	0.00500	"	"	"	"	"	"	
MW 37 (P006001-03) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.0199**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.0567**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00356**	0.00100	"	"	"	"	"	"	
Copper	**0.00572**	0.00200	"	"	"	"	"	"	
Lead	**0.00180**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060027	
Selenium	**0.00158**	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0111**	0.00500	"	"	"	"	"	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Total Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 63 (P006001-04) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.0189**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.0586**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00408**	0.00100	"	"	"	"	"	"	
Copper	**0.00637**	0.00200	"	"	"	"	"	"	
Lead	**0.00205**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060027	
Selenium	ND	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0121**	0.00500	"	"	"	"	"	"	
MW 15 (P006001-05) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	ND	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.0941**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00600**	0.00100	"	"	"	"	"	"	
Copper	**0.00597**	0.00200	"	"	"	"	"	"	
Lead	**0.00322**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060027	
Selenium	ND	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0298**	0.00500	"	"	"	"	"	"	
MW 21 (P006001-06) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.00599**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.335**	0.00200	"	"	"	"	"	"	
Cadmium	**0.00701**	0.00100	"	"	"	"	"	"	
Chromium	**0.0196**	0.00100	"	"	"	"	"	"	
Copper	**0.0248**	0.00200	"	"	"	"	"	"	
Lead	**0.0247**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060027	
Selenium	**0.00185**	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.126**	0.00500	"	"	"	"	"	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 22 (P006001-07) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.0945**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.244**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00970**	0.00100	"	"	"	"	"	"	
Copper	**0.00950**	0.00200	"	"	"	"	"	"	
Lead	**0.0216**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060027	
Selenium	**0.00242**	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0388**	0.00500	"	"	"	"	"	"	
MW 32 (P006001-08) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.00147**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.0268**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00195**	0.00100	"	"	"	"	"	"	
Copper	**0.00430**	0.00200	"	"	"	"	"	"	
Lead	**0.00159**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060027	
Selenium	ND	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.00686**	0.00500	"	"	"	"	"	"	
MW 31 (P006001-09) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.00664**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.0190**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060027	
Selenium	ND	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	ND	0.00500	"	"	"	"	"	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Total Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 26 (P006001-10) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.0443**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.102**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00453**	0.00100	"	"	"	"	"	"	
Copper	**0.00501**	0.00200	"	"	"	"	"	"	
Lead	**0.00492**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/02/00	0060027	
Selenium	ND	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0162**	0.00500	"	"	"	"	"	"	
MW 10 (P006001-11) Water					Sampled: 05/31/00 Received: 05/31/00				
Arsenic	**0.0158**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.199**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0155**	0.00100	"	"	"	"	"	"	
Copper	**0.0292**	0.00200	"	"	"	"	"	"	
Lead	**0.0182**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/02/00	0060027	
Selenium	**0.00179**	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0756**	0.00500	"	"	"	"	"	"	
MW 11 (P006001-12) Water					Sampled: 05/31/00 Received: 05/31/00				
Arsenic	**0.0595**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.454**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0291**	0.00100	"	"	"	"	"	"	
Copper	**0.0577**	0.00200	"	"	"	"	"	"	
Lead	**0.0705**	0.00100	"	"	"	"	"	"	
Mercury	**0.000201**	0.000200	"	"	EPA 7470A	06/01/00	06/02/00	0060027	
Selenium	**0.00296**	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.153**	0.00500	"	"	"	"	"	"	

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 36 (P006001-13) Water					Sampled: 05/31/00 Received: 05/31/00				
Arsenic	**0.0149**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.0512**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.00180**	0.00100	"	"	"	"	"	"	
Copper	**0.00308**	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/02/00	0060027	
Selenium	ND	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	ND	0.00500	"	"	"	"	"	"	
MW 13 (P006001-14) Water					Sampled: 05/31/00 Received: 05/31/00				
Arsenic	**0.0115**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.411**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	**0.0264**	0.00100	"	"	"	"	"	"	
Copper	**0.0409**	0.00200	"	"	"	"	"	"	
Lead	**0.0228**	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/02/00	0060027	
Selenium	**0.00200**	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.114**	0.00500	"	"	"	"	"	"	
MW 8 (P006001-15) Water					Sampled: 05/31/00 Received: 05/31/00				
Arsenic	**0.00348**	0.00100	mg/l	1	EPA 6020	06/15/00	06/16/00	0060437	
Barium	**0.0226**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/02/00	0060027	
Selenium	ND	0.00100	"	"	EPA 6020	06/15/00	06/16/00	0060437	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.00788**	0.00500	"	"	"	"	"	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Dissolved Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 33 (P006001-01) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.00313**	0.00100	mg/l	1	EPA 6020	06/01/00	06/03/00	0060032	
Barium	**0.0346**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	**0.0128**	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060026	
Selenium	ND	0.00100	"	"	EPA 6020	06/01/00	06/03/00	0060032	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.00521**	0.00500	"	"	"	"	"	"	
MW 21 (P006001-06) Water					Sampled: 05/30/00 Received: 05/31/00				
Arsenic	**0.00247**	0.00100	mg/l	1	EPA 6020	06/01/00	06/03/00	0060032	
Barium	**0.147**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060026	
Selenium	ND	0.00100	"	"	EPA 6020	06/01/00	06/03/00	0060032	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.00775**	0.00500	"	"	"	"	"	"	
MW 13 (P006001-14) Water					Sampled: 05/31/00 Received: 05/31/00				
Arsenic	ND	0.00100	mg/l	1	EPA 6020	06/01/00	06/03/00	0060032	
Barium	**0.0278**	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	**0.0354**	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Mercury	ND	0.000200	"	"	EPA 7470A	06/01/00	06/01/00	0060026	
Selenium	ND	0.00100	"	"	EPA 6020	06/01/00	06/03/00	0060032	
Silver	ND	0.00100	"	"	"	"	"	"	
Zinc	**0.0104**	0.00500	"	"	"	"	"	"	

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 33 (P006001-01) Water					Sampled: 05/30/00 Received: 05/31/00				
Acenaphthene	ND	0.100	ug/l	1	EPA 8270B-m	06/05/00	06/13/00	0060135	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	0.100	"	"	"	"	"	"	
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*135 %*	*20-140*							
Surr: Nitrobenzene-d5	*99.6 %*	*35-138*							
Surr: p-Terphenyl-d14	*93.2 %*	*43-135*							
MW 40 (P006001-02) Water					Sampled: 05/30/00 Received: 05/31/00				
Acenaphthene	**0.124**	0.100	ug/l	1	EPA 8270B-m	06/05/00	06/13/00	0060135	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	R-03
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*100 %*	*20-140*							

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 40 (P006001-02) Water						Sampled: 05/30/00	Received: 05/31/00		
Surr: Nitrobenzene-d5	*100 %*	*35-138*							
Surr: p-Terphenyl-d14	*97.9 %*	*43-135*							
MW 37 (P006001-03) Water						Sampled: 05/30/00	Received: 05/31/00		
Acenaphthene	ND	2.50	ug/l	25	EPA 8270B-m	06/05/00	06/14/00	0060135	R-03
Acenaphthylene	ND	2.50	"	"	"	"	"	"	R-03
Anthracene	ND	0.100	"	1	"	"	06/13/00	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	**0.126**	0.100	"	"	"	"	"	"	
Fluorene	ND	2.50	"	25	"	"	06/14/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/13/00	"	
Naphthalene	ND	12.5	"	25	"	"	06/14/00	"	R-03
Phenanthrene	**0.451**	0.100	"	1	"	"	06/13/00	"	
Pyrene	**0.153**	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*110 %*	*20-140*							
Surr: Nitrobenzene-d5	*122 %*	*35-138*							
Surr: p-Terphenyl-d14	*83.1 %*	*43-135*							
MW 63 (P006001-04) Water						Sampled: 05/30/00	Received: 05/31/00		
Acenaphthene	ND	5.00	ug/l	50	EPA 8270B-m	06/05/00	06/17/00	0060135	R-03
Acenaphthylene	ND	5.00	"	"	"	"	"	"	R-03
Anthracene	ND	0.100	"	1	"	"	06/13/00	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	**0.121**	0.100	"	"	"	"	"	"	
Fluorene	ND	5.00	"	50	"	"	06/17/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/13/00	"	

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 63 (P006001-04) Water					Sampled: 05/30/00 Received: 05/31/00				
Naphthalene	ND	5.00	ug/l	50	EPA 8270B-m	06/05/00	06/17/00	0060135	R-03
Phenanthrene	**0.465**	0.100	"	1	"	"	06/13/00	"	
Pyrene	**0.146**	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*NR*	*20-140*							*S-0*
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-0*
Surr: p-Terphenyl-d14	*107 %*	*43-135*							
MW 15 (P006001-05) Water					Sampled: 05/30/00 Received: 05/31/00				
Acenaphthene	ND	0.100	ug/l	1	EPA 8270B-m	06/05/00	06/13/00	0060135	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	0.100	"	"	"	"	"	"	
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*149 %*	*20-140*							*S-08*
Surr: Nitrobenzene-d5	*110 %*	*35-138*							
Surr: p-Terphenyl-d14	*110 %*	*43-135*							

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 21 (P006001-06) Water					Sampled: 05/30/00 Received: 05/31/00				
Acenaphthene	ND	0.100	ug/l	1	EPA 8270B-m	06/05/00	06/13/00	0060135	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	0.100	"	"	"	"	"	"	
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*135 %*	*20-140*							
Surr: Nitrobenzene-d5	*108 %*	*35-138*							
Surr: p-Terphenyl-d14	*104 %*	*43-135*							
MW 22 (P006001-07) Water					Sampled: 05/30/00 Received: 05/31/00				**R-05**
Acenaphthene	ND	1.00	ug/l	10	EPA 8270B-m	06/05/00	06/12/00	0060135	
Acenaphthylene	ND	1.00	"	"	"	"	"	"	
Anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Fluorene	ND	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	
Naphthalene	**345**	20.0	"	200	"	"	06/13/00	"	
Phenanthrene	ND	1.00	"	10	"	"	06/12/00	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*67.8 %*	*20-140*							

North Creek Analytical - Portland

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 22 (P006001-07) Water					Sampled: 05/30/00	Received: 05/31/00			**R-05**
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-01*
Surr: p-Terphenyl-d14	*75.4 %*	*43-135*							
MW 32 (P006001-08) Water					Sampled: 05/30/00	Received: 05/31/00			
Acenaphthene	ND	0.100	ug/l	1	EPA 8270B-m	06/05/00	06/13/00	0060135	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	0.100	"	"	"	"	"	"	
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*150 %*	*20-140*							*S-08*
Surr: Nitrobenzene-d5	*102 %*	*35-138*							
Surr: p-Terphenyl-d14	*101 %*	*43-135*							
MW 31 (P006001-09) Water					Sampled: 05/30/00	Received: 05/31/00			
Acenaphthene	ND	2.50	ug/l	25	EPA 8270B-m	06/05/00	06/17/00	0060135	R-03
Acenaphthylene	ND	2.50	"	"	"	"	"	"	R-03
Anthracene	ND	2.50	"	"	"	"	"	"	R-03
Benzo (a) anthracene	ND	0.100	"	1	"	"	06/13/00	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	2.50	"	25	"	"	06/17/00	"	R-03
Fluorene	ND	2.50	"	"	"	"	"	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/13/00	"	

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 31 (P006001-09) Water					Sampled: 05/30/00 Received: 05/31/00				
Naphthalene	ND	2.50	ug/l	25	EPA 8270B-m	06/05/00	06/17/00	0060135	R-03
Phenanthrene	ND	2.50	"	"	"	"	"	"	R-03
Pyrene	ND	2.50	"	"	"	"	"	"	R-03
Surr: 2-Fluorobiphenyl	*179 %*	*20-140*							*S-09*
Surr: Nitrobenzene-d5	*130 %*	*35-138*							
Surr: p-Terphenyl-d14	*113 %*	*43-135*							
MW 26 (P006001-10) Water					Sampled: 05/30/00 Received: 05/31/00				**R-05**
Acenaphthene	ND	10.0	ug/l	10	EPA 8270B-m	06/05/00	06/12/00	0060135	R-03
Acenaphthylene	ND	1.00	"	"	"	"	"	"	
Anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	1.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	1.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.00	"	"	"	"	"	"	
Chrysene	ND	1.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	1.00	"	"	"	"	"	"	
Fluorene	**1.84**	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	20.0	"	"	"	"	"	"	R-03
Phenanthrene	**1.84**	1.00	"	"	"	"	"	"	
Pyrene	ND	1.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*102 %*	*20-140*							
Surr: Nitrobenzene-d5	*147 %*	*35-138*							*S-09*
Surr: p-Terphenyl-d14	*100 %*	*43-135*							

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Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 10 (P006001-11) Water					Sampled: 05/31/00 Received: 05/31/00				
Acenaphthene	ND	0.100	ug/l	1	EPA 8270B-m	06/07/00	06/13/00	0060206	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	2.00	"	"	"	"	"	"	R-03
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*127 %*	*20-140*							
Surr: Nitrobenzene-d5	*117 %*	*35-138*							
Surr: p-Terphenyl-d14	*110 %*	*43-135*							
MW 11 (P006001-12) Water					Sampled: 05/31/00 Received: 05/31/00				
Acenaphthene	ND	20.0	ug/l	200	EPA 8270B-m	06/07/00	06/17/00	0060206	R-03
Acenaphthylene	ND	20.0	"	"	"	"	"	"	R-03
Anthracene	**0.159**	0.100	"	1	"	"	06/13/00	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	20.0	"	200	"	"	06/17/00	"	R-03
Indeno (1,2,3-cd) pyrene	ND	0.100	"	1	"	"	06/13/00	"	
Naphthalene	**555**	20.0	"	200	"	"	06/17/00	"	
Phenanthrene	**0.256**	0.100	"	1	"	"	06/13/00	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*NR*	*20-140*							*S-01*

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 11 (P006001-12) Water					Sampled: 05/31/00 Received: 05/31/00				
Surr: Nitrobenzene-d5	*NR*	*35-138*							*S-01*
Surr: p-Terphenyl-d14	*74.6 %*	*43-135*							
MW 36 (P006001-13) Water					Sampled: 05/31/00 Received: 05/31/00				
Acenaphthene	**0.228**	0.100	ug/l	1	EPA 8270B-m	06/07/00	06/13/00	0060206	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	R-03
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*100 %*	*20-140*							
Surr: Nitrobenzene-d5	*105 %*	*35-138*							
Surr: p-Terphenyl-d14	*101 %*	*43-135*							
MW 13 (P006001-14) Water					Sampled: 05/31/00 Received: 05/31/00				
Acenaphthene	ND	0.100	ug/l	1	EPA 8270B-m	06/07/00	06/13/00	0060206	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW 13 (P006001-14) Water					Sampled: 05/31/00 Received: 05/31/00				
Naphthalene	ND	0.100	ug/l	1	EPA 8270B-m	06/07/00	06/13/00	0060206	
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*102 %*	*20-140*							
Surr: Nitrobenzene-d5	*107 %*	*35-138*							
Surr: p-Terphenyl-d14	*112 %*	*43-135*							
MW 8 (P006001-15) Water					Sampled: 05/31/00 Received: 05/31/00				
Acenaphthene	ND	0.100	ug/l	1	EPA 8270B-m	06/07/00	06/13/00	0060206	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	ND	2.50	"	"	"	"	"	"	R-03
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*128 %*	*20-140*							
Surr: Nitrobenzene-d5	*117 %*	*35-138*							
Surr: p-Terphenyl-d14	*103 %*	*43-135*							

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060108 - EPA 5030										
Blank (0060108-BLK1)				Prepared & Analyzed: 06/05/00						
Benzene	ND	0.500	ug/l							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surr: 4-BFB (PID)	*48.1*		"	*50.0*		*96.2*	*75-120*			
LCS (0060108-BS2)				Prepared & Analyzed: 06/05/00						
Benzene	17.8	0.500	ug/l	20.0		89.0	70-130			
Toluene	18.3	0.500	"	20.0		91.5	70-130			
Ethylbenzene	18.2	0.500	"	20.0		91.0	70-130			
Xylenes (total)	54.3	1.00	"	60.0		90.5	70-130			
Surr: 4-BFB (PID)	*52.1*		"	*50.0*		*104*	*75-120*			
Matrix Spike (0060108-MS1)	**Source: P006001-15**			Prepared & Analyzed: 06/05/00						
Benzene	35.4	0.500	ug/l	20.0	16.6	94.0	70-130			
Toluene	23.6	0.500	"	20.0	3.85	98.8	70-130			
Ethylbenzene	22.2	0.500	"	20.0	3.05	95.8	70-130			
Xylenes (total)	66.9	1.00	"	60.0	10.2	94.5	70-130			
Surr: 4-BFB (PID)	*58.6*		"	*50.0*		*117*	*75-120*			
Matrix Spike Dup (0060108-MSD1)	**Source: P006001-15**			Prepared & Analyzed: 06/05/00						
Benzene	32.8	0.500	ug/l	20.0	16.6	81.0	70-130	7.62	15	
Toluene	21.0	0.500	"	20.0	3.85	85.8	70-130	11.7	15	
Ethylbenzene	19.9	0.500	"	20.0	3.05	84.2	70-130	10.9	15	
Xylenes (total)	60.5	1.00	"	60.0	10.2	83.8	70-130	10.0	15	
Surr: 4-BFB (PID)	*58.2*		"	*50.0*		*116*	*75-120*			

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060146 - EPA 5030										
Blank (0060146-BLK1)				Prepared & Analyzed: 06/06/00						
Benzene	ND	0.500	ug/l							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surr: 4-BFB (PID)	*50.3*		"	*50.0*		*101*	*75-120*			
LCS (0060146-BS2)				Prepared & Analyzed: 06/06/00						
Benzene	22.0	0.500	ug/l	20.0		110	70-130			
Toluene	19.2	0.500	"	20.0		96.0	70-130			
Ethylbenzene	20.7	0.500	"	20.0		104	70-130			
Xylenes (total)	62.0	1.00	"	60.0		103	70-130			
Surr: 4-BFB (PID)	*50.0*		"	*50.0*		*100*	*75-120*			

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060027 - EPA 7470										
Blank (0060027-BLK1)				Prepared & Analyzed: 06/01/00						
Mercury	ND	0.000200	mg/l							
LCS (0060027-BS1)				Prepared & Analyzed: 06/01/00						
Mercury	0.00490	0.000200	mg/l	0.00500		98.0	80-120			
Duplicate (0060027-DUP1)		**Source: P006001-01**		Prepared & Analyzed: 06/01/00						
Mercury	ND	0.000200	mg/l		ND				20	
Matrix Spike (0060027-MS1)		**Source: P006001-01**		Prepared & Analyzed: 06/01/00						
Mercury	0.00489	0.000200	mg/l	0.00500	ND	97.8	75-125			
Matrix Spike (0060027-MS2)		**Source: P006001-09**		Prepared & Analyzed: 06/01/00						
Mercury	0.00472	0.000200	mg/l	0.00500	ND	94.4	75-125			
Batch 0060437 - EPA 200/3005										
Blank (0060437-BLK1)				Prepared: 06/15/00 Analyzed: 06/16/00						
Arsenic	ND	0.00100	mg/l							
Barium	ND	0.00200	"							
Cadmium	ND	0.00100	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00200	"							
Lead	ND	0.00100	"							
Selenium	ND	0.00100	"							
Silver	ND	0.00100	"							
Zinc	ND	0.00500	"							

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060437 - EPA 200/3005										
LCS (0060437-BS1)				Prepared: 06/15/00 Analyzed: 06/16/00						
Arsenic	0.105	0.00100	mg/l	0.100		105	80-120			
Barium	0.101	0.00200	"	0.100		101	80-120			
Cadmium	0.103	0.00100	"	0.100		103	80-120			
Chromium	0.104	0.00100	"	0.100		104	80-120			
Copper	0.104	0.00200	"	0.100		104	80-120			
Lead	0.103	0.00100	"	0.100		103	80-120			
Selenium	0.108	0.0100	"	0.100		108	80-120			
Silver	0.0514	0.00100	"	0.0500		103	80-120			
Zinc	0.104	0.00500	"	0.100		104	80-120			
Duplicate (0060437-DUP1)	**Source: P006001-15**			Prepared: 06/15/00 Analyzed: 06/16/00						
Arsenic	0.00366	0.00100	mg/l		0.00348			5.04	20	
Barium	0.0225	0.00200	"		0.0226			0.443	20	
Cadmium	ND	0.00100	"		ND			0	20	Q-06
Chromium	ND	0.00100	"		ND			2.35	20	Q-06
Copper	ND	0.00200	"		ND			9.71	20	Q-06
Lead	ND	0.00100	"		ND			2.86	20	Q-06
Selenium	ND	0.00100	"		ND				20	
Silver	ND	0.00100	"		ND				20	
Zinc	0.00840	0.00500	"		0.00788			6.39	20	
Matrix Spike (0060437-MS1)	**Source: P006001-15**			Prepared: 06/15/00 Analyzed: 06/16/00						
Arsenic	0.112	0.00619	mg/l	0.100	ND	109	75-125			
Barium	0.127	0.00200	"	0.100	0.0226	104	75-125			
Cadmium	0.102	0.00100	"	0.100	ND	102	75-125			
Chromium	0.105	0.00100	"	0.100	ND	104	75-125			
Copper	0.105	0.00200	"	0.100	ND	104	75-125			
Lead	0.0970	0.00100	"	0.100	ND	96.3	75-125			
Selenium	0.102	0.0100	"	0.100	ND	102	75-125			
Silver	0.0518	0.00100	"	0.0500	ND	104	75-125			
Zinc	0.118	0.00500	"	0.100	0.00788	110	75-125			

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060437 - EPA 200/3005										
Matrix Spike Dup (0060437-MSD1)		**Source: P006001-15**		Prepared: 06/15/00 Analyzed: 06/16/00						
Arsenic	0.113	0.00641	mg/l	0.100	ND	110	75-125	0.889	20	
Barium	0.138	0.00200	"	0.100	0.0226	115	75-125	8.30	20	
Cadmium	0.106	0.00100	"	0.100	ND	106	75-125	3.85	20	
Chromium	0.109	0.00100	"	0.100	ND	108	75-125	3.74	20	
Copper	0.107	0.00200	"	0.100	ND	106	75-125	1.89	20	
Lead	0.105	0.00100	"	0.100	ND	104	75-125	7.92	20	
Selenium	0.104	0.0100	"	0.100	ND	104	75-125	1.94	20	
Silver	0.0507	0.00100	"	0.0500	ND	101	75-125	2.15	20	
Zinc	0.122	0.00500	"	0.100	0.00788	114	75-125	3.33	20	

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Dissolved Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060026 - EPA 7470										
Blank (0060026-BLK1)				Prepared & Analyzed: 06/01/00						
Mercury	ND	0.000200	mg/l							
LCS (0060026-BS1)				Prepared & Analyzed: 06/01/00						
Mercury	0.00526	0.000200	mg/l	0.00500		105	80-120			
Duplicate (0060026-DUP1)		**Source: P006001-01**		Prepared & Analyzed: 06/01/00						
Mercury	ND	0.000200	mg/l		ND				20	
Matrix Spike (0060026-MS1)		**Source: P006001-01**		Prepared & Analyzed: 06/01/00						
Mercury	0.00509	0.000200	mg/l	0.00500	ND	102	75-125			
Matrix Spike (0060026-MS2)		**Source: P005612-12**		Prepared & Analyzed: 06/01/00						
Mercury	0.00488	0.000200	mg/l	0.00500	ND	97.6	75-125			
Batch 0060032 - EPA 200/3005										
Blank (0060032-BLK1)				Prepared: 06/01/00 Analyzed: 06/03/00						
Arsenic	ND	0.00100	mg/l							
Barium	ND	0.00200	"							
Cadmium	ND	0.00100	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00200	"							
Lead	ND	0.00100	"							
Selenium	ND	0.00100	"							
Silver	ND	0.00100	"							
Zinc	ND	0.00500	"							

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Dissolved Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060032 - EPA 200/3005										
LCS (0060032-BS1)				Prepared: 06/01/00 Analyzed: 06/03/00						
Arsenic	0.0978	0.00100	mg/l	0.100		97.8	80-120			
Barium	0.100	0.00200	"	0.100		100	80-120			
Cadmium	0.0984	0.00100	"	0.100		98.4	80-120			
Chromium	0.0954	0.00100	"	0.100		95.4	80-120			
Copper	0.0957	0.00200	"	0.100		95.7	80-120			
Lead	0.102	0.00100	"	0.100		102	80-120			
Selenium	0.101	0.00100	"	0.100		101	85-115			
Silver	0.0512	0.00100	"	0.0500		102	80-120			
Zinc	0.0961	0.00500	"	0.100		96.1	80-120			
Duplicate (0060032-DUP1)		**Source: P005597-02**		Prepared: 06/01/00 Analyzed: 06/03/00						
Arsenic	0.0190	0.00100	mg/l		0.0188			1.06	20	
Barium	0.385	0.00200	"		0.383			0.521	20	
Cadmium	ND	0.00100	"		ND			22.8	20	Q-06
Chromium	0.0121	0.00100	"		0.0118			2.51	20	
Copper	0.0425	0.00200	"		0.0420			1.18	20	
Lead	0.0743	0.00100	"		0.0734			1.22	20	
Selenium	0.00136	0.00100	"		0.00174			24.5	20	Q-06
Silver	ND	0.00100	"		ND			0	20	
Zinc	0.0970	0.00500	"		0.0962			0.828	20	
Matrix Spike (0060032-MS1)		**Source: P005597-02**		Prepared: 06/01/00 Analyzed: 06/05/00						
Arsenic	0.110	0.0100	mg/l	0.100	0.0188	91.2	75-125			
Barium	0.500	0.00200	"	0.100	0.383	117	75-125			
Cadmium	0.104	0.00100	"	0.100	ND	104	75-125			
Chromium	0.116	0.00100	"	0.100	0.0118	104	75-125			
Copper	0.139	0.00200	"	0.100	0.0420	97.0	75-125			
Lead	0.178	0.00100	"	0.100	0.0734	105	75-125			
Selenium	0.0921	0.0100	"	0.100	ND	90.4	75-125			
Silver	0.0541	0.00100	"	0.0500	ND	108	75-125			
Zinc	0.192	0.00500	"	0.100	0.0962	95.8	75-125			

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060135 - EPA 3520/600 Series										
Blank (0060135-BLK1)				Prepared: 06/05/00 Analyzed: 06/12/00						
Acenaphthene	ND	0.100	ug/l							
Acenaphthylene	ND	0.100	"							
Anthracene	ND	0.100	"							
Benzo (a) anthracene	ND	0.100	"							
Benzo (a) pyrene	ND	0.100	"							
Benzo (b) fluoranthene	ND	0.100	"							
Benzo (ghi) perylene	ND	0.100	"							
Benzo (k) fluoranthene	ND	0.100	"							
Chrysene	ND	0.100	"							
Dibenzo (a,h) anthracene	ND	0.200	"							
Fluoranthene	ND	0.100	"							
Fluorene	ND	0.100	"							
Indeno (1,2,3-cd) pyrene	ND	0.100	"							
Naphthalene	ND	0.100	"							
Phenanthrene	ND	0.100	"							
Pyrene	ND	0.100	"							
Surr: 2-Fluorobiphenyl	*2.24*		"	*2.50*		*89.6*	*20-140*			
Surr: Nitrobenzene-d5	*2.51*		"	*2.50*		*100*	*35-138*			
Surr: p-Terphenyl-d14	*2.84*		"	*2.50*		*114*	*43-135*			
LCS (0060135-BS1)				Prepared: 06/05/00 Analyzed: 06/12/00						
Acenaphthene	1.05	0.100	ug/l	1.00		105	26-135			
Benzo (a) pyrene	0.876	0.100	"	1.00		87.6	38-137			
Pyrene	0.837	0.100	"	1.00		83.7	33-133			
Surr: 2-Fluorobiphenyl	*2.24*		"	*2.50*		*89.6*	*20-140*			
Surr: Nitrobenzene-d5	*2.42*		"	*2.50*		*96.8*	*35-138*			
Surr: p-Terphenyl-d14	*2.62*		"	*2.50*		*105*	*43-135*			

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	**Reported:**
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060135 - EPA 3520/600 Series										
LCS Dup (0060135-BSD1)				Prepared: 06/05/00 Analyzed: 06/12/00						
Acenaphthene	1.22	0.100	ug/l	1.00		122	26-135	15.0	60	
Benzo (a) pyrene	0.896	0.100	"	1.00		89.6	38-137	2.26	60	
Pyrene	0.863	0.100	"	1.00		86.3	33-133	3.06	60	
Surr: 2-Fluorobiphenyl	*2.41*		"	*2.50*		*96.4*	*20-140*			
Surr: Nitrobenzene-d5	*2.62*		"	*2.50*		*105*	*35-138*			
Surr: p-Terphenyl-d14	*2.83*		"	*2.50*		*113*	*43-135*			
Batch 0060206 - EPA 3520/600 Series										
Blank (0060206-BLK1)				Prepared: 06/07/00 Analyzed: 06/13/00						
Acenaphthene	ND	0.100	ug/l							
Acenaphthylene	ND	0.100	"							
Anthracene	ND	0.100	"							
Benzo (a) anthracene	ND	0.100	"							
Benzo (a) pyrene	ND	0.100	"							
Benzo (b) fluoranthene	ND	0.100	"							
Benzo (ghi) perylene	ND	0.100	"							
Benzo (k) fluoranthene	ND	0.100	"							
Chrysene	ND	0.100	"							
Dibenzo (a,h) anthracene	ND	0.200	"							
Fluoranthene	ND	0.100	"							
Fluorene	ND	0.100	"							
Indeno (1,2,3-cd) pyrene	ND	0.100	"							
Naphthalene	ND	0.100	"							
Phenanthrene	ND	0.100	"							
Pyrene	ND	0.100	"							
Surr: 2-Fluorobiphenyl	*2.95*		"	*2.50*		*118*	*20-140*			
Surr: Nitrobenzene-d5	*2.36*		"	*2.50*		*94.4*	*35-138*			
Surr: p-Terphenyl-d14	*2.97*		"	*2.50*		*119*	*43-135*			

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060206 - EPA 3520/600 Series										
LCS (0060206-BS1)				Prepared: 06/07/00 Analyzed: 06/13/00						
Acenaphthene	0.663	0.100	ug/l	1.00		66.3	26-135			
Benzo (a) pyrene	0.738	0.100	"	1.00		73.8	38-137			
Pyrene	0.703	0.100	"	1.00		70.3	33-133			
Surr: 2-Fluorobiphenyl	*2.32*		"	*2.50*		*92.8*	*20-140*			
Surr: Nitrobenzene-d5	*2.05*		"	*2.50*		*82.0*	*35-138*			
Surr: p-Terphenyl-d14	*2.30*		"	*2.50*		*92.0*	*43-135*			
Matrix Spike (0060206-MS1)	**Source: P006001-15**			Prepared: 06/07/00 Analyzed: 06/13/00						
Acenaphthene	0.877	0.100	ug/l	0.943	ND	82.5	26-135			
Benzo (a) pyrene	0.774	0.100	"	0.943	ND	82.1	38-137			
Pyrene	0.700	0.100	"	0.943	ND	74.2	33-133			
Surr: 2-Fluorobiphenyl	*2.20*		"	*2.36*		*93.2*	*20-140*			
Surr: Nitrobenzene-d5	*2.77*		"	*2.36*		*117*	*35-138*			
Surr: p-Terphenyl-d14	*2.40*		"	*2.36*		*102*	*43-135*			
Matrix Spike Dup (0060206-MSD1)	**Source: P006001-15**			Prepared: 06/07/00 Analyzed: 06/13/00						
Acenaphthene	0.827	0.100	ug/l	0.943	ND	77.2	26-135	5.87	60	
Benzo (a) pyrene	0.808	0.100	"	0.943	ND	85.7	38-137	4.30	60	
Pyrene	0.726	0.100	"	0.943	ND	77.0	33-133	3.65	60	
Surr: 2-Fluorobiphenyl	*2.55*		"	*2.36*		*108*	*20-140*			
Surr: Nitrobenzene-d5	*2.95*		"	*2.36*		*125*	*35-138*			
Surr: p-Terphenyl-d14	*2.40*		"	*2.36*		*102*	*43-135*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

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IT Corporation - Portland	Project: Willbridge (GATX)	
15055 SW Sequoia Parkway #140	Project Number: B15-100.2A	Reported:
Portland, OR 97224	Project Manager: John Renda	06/21/00 10:37

Notes and Definitions

Q-06	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
R-03	The reporting limit for this analyte was raised due to matrix interference.
R-05	Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-08	Surrogate recovery is above control limits. Since no analytes were detected in the sample, the quality of the data has not been affected.
S-09	Surrogate recovery is outside control limits due to matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
wet	Sample results reported on a wet weight basis
RPD	Relative Percent Difference

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1 of 1

CHAIN OF CUSTODY REPORT

Work Order #: PW6001

CLIENT: Willbridge GATX
REPORT TO: IT (PDX) Tim Stone
ADDRESS: 15055 SW Sequoia Pkwy Suite 140 Ptld OR 97224
PHONE (503) 624-7200 FAX (503) 620-7658

INVOICE TO: IT PDX (Tim Stone)
P.O. NUMBER:

PROJECT NAME: Willbridge GATX
PROJECT NUMBER: B15-100.24
SAMPLED BY: Cory LaVelle

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: [10] 7 5 4 3 2 1 <1 STD.
Petroleum Hydrocarbon Analyses: 5 4 3 2 1 <1 STD.
OTHER Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

#	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	BTEX	PAHs	Metals	Dissolved Metals	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA ID
1	MW 33	5/30/00 0945	X	X	X	X	W	7		
2	MW 40	5/30/00 1020	X	X	X		W	6		
3	MW 37	5/30/00 1055	X	X	X		W	6		
4	MW 63	5/30/00 1120	X	X	X		W	6		
5	MW 15	5/30/00 1140	X	X	X		W	6		
6	MW 21	5-30-00/1205	X	X	X	X	W	7		
7	MW 22	5-30-00/1240	X	X	X		W	6		
8	MW 32	5-30-00/1310	X	X	X		W	6		
9	MW 31	5-30-00/1410	X	X	X		W	6		
10	MW 26	5-30-00/1440	X	X	X		W	6		
11	MW 10	5-30-00/0910	X	X	X		W	6		
12	MW 11	5-30-00/0935	X	X	X		W	6		
13	MW 36	5-30-00/1020	X	X	X		W	6		
14	~~MW 23~~	~~5-30-00/ DRY~~					W	6		
15	MW 13	5-31-00/1155	X	X	X	X	W	7		

RELINQUISHED BY: Cory LaVelle — DATE: 5-31-00
PRINT NAME: Cory LaVelle — FIRM: IT corp — TIME: 1700

RECEIVED BY: Jessica Roberts
PRINT NAME: JROBERTS — FIRM: NCA — DATE: 5/31/00 — TIME: 1700

RELINQUISHED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

RECEIVED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

[redacted]

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CHAIN OF CUSTODY REPORT

Work Order #: PCW6001

CLIENT: Willbridge GATX
REPORT TO: IT (PDX) Tim Stone
ADDRESS: 15055 SW Sequoia Pkwy Suite 140 Ptld OR 97224
PHONE: (503) 624-7200 FAX: (503) 620 7658

INVOICE TO: IT PDX (Tim Stone)
P.O. NUMBER:

PROJECT NAME: Willbridge (GATX)
PROJECT NUMBER: 315-
SAMPLED BY: Cory Lakelle

TURNAROUND REQUEST in Business Days* (STD.)
Organic & Inorganic Analyses: [10] [7] [5] [4] [3] [2] [1] [<1]
Petroleum Hydrocarbon Analyses: [5] [4] [3] [2] [1] [<1]
[OTHER] Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	BTEX	PAHs	Metals	Dissolved Metals	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NC. ID
1.	MW8	5/31/00/1235	X	X	X		W	18	SPIKE	
2.	TripBlank	— —	X				W	2		
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										
15.										

RELINQUISHED BY: Cory Lakelle — DATE: 5-31-00
PRINT NAME: Cory Lakelle — FIRM: IT Corp — TIME: 1700

RECEIVED BY: Jessica Roberts — DATE: 5/31/00
PRINT NAME: JROBERTS — FIRM: NCA — TIME: 1700

RELINQUISHED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

RECEIVED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

ADDITIONAL REMARKS:

TEMP:

PAGE 2 OF 2

COP0015438

AOC 0922
CORRESP.

TOSCO REFINING COMPANY
DISTRIBUTION WEST AND 76 PRODUCTS COMPANY
PRELIMINARY INCIDENT NOTIFICATION (PIN) FORM
(Due within 8 hours of the incident)

Directions: To complete this form electronically, select "Tools" from the menu bar at the top of this screen, then "Protect Document", "Protect Document for "Forms" and click on the "OK" button. Use the TAB key or your mouse to move to the next field (Shift + TAB to move to the previous field). Use your mouse to check/uncheck the check boxes.

Date Prepared **9/12/00**

Time Prepared **1415 Hours**

Business Unit/Facility
Portland Terminal

Date and Time Of Occurrence **9/12/00 0800 hours**

(Check one)

☐ Serious Accident	Fatality, hospitalization of employee, lost workday case, injury/spill reportable to government agency, significant media coverage, significant threat to public/environment, citation/NOV, potential loss ≥$10,000.
☐ Minor Accident	Restricted workday or medical treatment case, first aid case, spill/incident not reportable to government agency, minor vehicle accident (no injury), potential loss <$10,000.
☒ Other Incident (Near Miss)	Events that, under slightly different circumstances, could have reasonably resulted in a serious or minor accident, as described above.

(Check all that apply)

☐ Fatality	☐ Injury	☐ Occupational Illness
☒ Spill/Leak/Release	☒ Environmental Impact	☐ Product Mix/Contamination
☐ Fire/Explosion	☐ Motor Vehicle Accident	☐ Property Damage/Loss/Theft
☐ Loss of Process	☐ Significant Media Coverage	
☐ Other (Describe)		

(Check all that apply)

☐ Employee	☐ Contractor	☐ Customer / General Public

DESCRIPTION (Describe the accident/incident--who, what, when, where, how, why. Attach any photos / sketches):
A 0800 an operator notified management that there was a heavy sheen in the boomed area around the municipal storm sewer adjacent to the Tosco dock. The source appears to be related to historical subsurface contamination in the area. All required agencies were notified.

CORRECTIVE ACTION TAKEN (Describe immediate action taken):
Recovered oil with absorbents, insrtalled new absorbent booms and are in the process of installing a interim pump and treat recovery system. The response was by Cowlitz Clean Sweep and the cost were covered under the Willbridge PRP Group.

HES07A 10/31/98

TOSCO

COP0015439

INVESTIGATION LEADER: **Marty Cramer**

Phone Number: **503-248-1517**

Prepared by: **Vito DeBellis** Title: **Supervisor of Operations**

Date: **9/12/00**

TOSCO

ENVIRONMENTAL MANAGEMENT, INC.

KHM

September 13, 2000
Project B17-05A

Mr. Gerald O'Regan
Chevron Products Company
6001 Bollinger Canyon Road, Building L
San Ramon, California 94583-5004

Mr. Martin Cramer
Tosco Refining Company
5528 NW Doane Avenue
Portland, Oregon 97210

RE: Repair of the 60-inch Storm Sewer
Tosco Willbridge Terminal
Portland, Oregon

Dear Gentlemen:

KHM Environmental Management, Inc. (KHM) has prepared this letter to provide documentation of the recent repair of the 60-inch storm sewer located at the above-referenced facility. This work was performed to seal three leaking joints in the storm sewer. The main goal of this work was to prohibit the infiltration of petroleum hydrocarbons from the subsurface into the storm sewer through these joints. KHM is providing services to Tosco on a direct-contract basis and is providing services to Chevron as a Network Associate with Delta Environmental Consultants, Inc.

The joints that were leaking were identified by using a hand held video camera. The storm sewer was entered on two separate occasions to inspect and record the condition of each joint in the storm sewer from Manhole 8A to approximately 150 feet from the outfall at the Willamette River. The video survey was stopped at this point because this was as far as the supplied-air line for the person operating the camera could reach. These video surveys identified two potentially leaky joints and one joint that was definitely leaking.

The potentially leaking joints had been previously repaired in 1998 and are located approximately 90 and 100 feet downgradient of Manhole 8A. The third joint is located approximately 150 feet upgradient in the storm sewer from the outfall at the Willamette River.

The repair of the suspected leaking joints was completed on June 14 and 15, 2000. The third leaking joint was repaired on August 7, 2000. Each joint was repaired by Gelco Services of Salem, Oregon. The repair was performed by constructing a grout collar around each of the joints. This collar was installed by drilling several holes along the

16771 NE 80TH STREET • SUITE 203
REDMOND, WASHINGTON • 98052
PHONE: (425) 558-0134
FAX: (425) 869-7494

7150 SW HAMPTON STREET • SUITE 240
TIGARD, OREGON • 97223
PHONE: (503) 639-2721
FAX: (503) 639-7932

CROCKETT, CALIFORNIA
PHONE: (510) 787-6756
FAX: (510) 787-2371

perimeter of each joint. These holes were drilled through the wall of the storm sewer from the inside of the pipe. Grout material was then injected into the trench backfill by pressure grouting through these holes. The grout collars extend around the entire circumference of the storm sewer pipe. During repair of the joint located approximately 90 feet from Manhole 8A, 17.5 gallons of grout was used to construct the grout collar. Approximately 20 gallons was used to repair the joint 100 feet from Manhole 8A. The last joint was repaired using 15 gallons of grout.

KHM appreciates the opportunity to be of assistance to Chevron and Tosco on this project. If you need further information or have any questions, please call (503) 233-4068.

Sincerely,
KHM Environmental Management, Inc.

Kelly A. Kline, RG
Senior Geologist

Ward Crell, RG
Principal Geologist

COP0015442

TOSCO

AOC 0922
CORRESP.

Date: December 14, 2000 **Time:** 12:58 PM

Number of Pages Including Cover Sheet: 5

To: DOUG LANGE/JOHN BARBAY	**From: MARTY CRAMER**
TPS	Tosco Portland Terminal
Portland, OR	5528 NW Doane Ave.
	Portland, OR 97210
Phone:	**Phone:** 503-248-1517
Fax: 503-240-1712	**Fax:** 503-248-1592

REMARKS

☐ **Urgent** ☐ **For Your Review** ☐ **Reply ASAP** ☐ **Please Comment**

Doug:

Per our conversation, here is the TPS Soil Data and Certification Sheet and summaries of the analytical data for the soil we intend to deliver to TPS for treatment next week. The soil is derived from a kerosene spill we had in our tank farm here at the Portland Terminal last summer. The upper 1-2 ft of soil was excavated last summer and stockpiled onsite and another 1-2 ft is scheduled for removal next week for an estimated total of 125 yds. We cannot dig much deeper as it may jeopardize the integrity of the adjacent tanks. Table I summarizes the results of the hydrocarbon analyses from soil borings in the spill areas. As shown, most of the samples indicate a match with the sample of kerosene source oil we gave to the lab for comparison purposes but there are a few deeper samples that did not match indicating historic contamination of other petroleum products is present. We do not expect to get that deep so the vast majority of soil sent to TPS will be impacted with kerosene only. The gasoline concentrations shown in Table I are characterized by the laboratory as likely being kerosene components that overlap in the gasoline range.

Because we did not perform any metals analyses on the soils following the spill, I have included a table from the Remedial Investigation report for the Willbridge Facilities site (including the Tosco Terminal) being submitted to DEQ tomorrow. Table 31b summarizes the metals concentrations in soils collected from an area approximately 100 ft from the spill area. This particular area was impacted by a gasoline spill in 1997. No other samples were collected for metals analyses within the tank farm where the recent kerosene spill occurred.

I hope this data is sufficient to enable TPS to determine the acceptability of the soil for treatment at your facility. If you need the lab reports I can send those under separate cover. If you have any questions or comments, please feel free to contact me at the above number.

Thanks,

Marty

Tacoma, WA
Soil Recycling Facility

TPS TECHNOLOGIES INC.

Soil Data and Certification Sheet

Date: Dec. 14, 2000

GENERATOR: Tosco Refining Co.	**CONSULTANT:**
Mailing Address: P.O. Box 76	Address:
Portland, OR 97207	
Contact: Marty Cramer	Contact:
Phone: (503) 248-1517	Phone: ( )
Fax: (503) 248-1592	Fax: ( )
SITE NAME: Tosco Portland Terminal	**TRANSPORTER:**
Street Address: 5528 NW Doane Ave	Address:
Portland, OR 97210	
Contact: Marty Cramer	Contact:
Phone: (503) 248-1517	Phone: ( )
Fax: (503) 248-1592	Fax: ( )

Site History

Type of contamination (gas, diesel, used oil, coal tar, etc) Kerosene Estimated quantity in tons: 175

How did soil contamination occur? Kerosene spill in tank farm

Source of Contamination: ☐ UST ☐ AST ☒ SPILL ☐ EMERGENCY RESPONSE ☐ OTHER

Name of Testing Lab: North Creek Contact: Crystal Burkhardt Phone: 503-906-9200

How and where at site were samples taken? Hand Auger at various locations in spill area

Please check appropriate box below and attach all required analytical reports, including test methodologies used. Unless otherwise noted, discrete grab samples should be collected with the following frequency: Three samples for the first 150 tons; five samples for 750 tons or less, seven samples for 1500 tons or less, ten samples for 3000 tons or less, and one additional sample for each 750 additional tons.

☐ I certify that the soil referenced herein is contaminated solely by virgin petroleum products from leaking underground storage tank(s).

Attach analysis for the following:
1. Total petroleum hydrocarbons (WTPH-G, WTPH-D, 418-1)
2. Benzene/ toluene/ ethylbenzene/ xylene (Method 8020 BTEX for gasoline soils only)
3. Total lead (Method 6010, 7420, or 7421 for gasoline soils only)

☒ I certify that some or all of the contaminants in the soil referenced herein is used oil or some other non-virgin petroleum product, or virgin petroleum or hydrocarbon product from a leaking above-ground storage tank or spill.

Attach analysis for the following:
1. Total petroleum hydrocarbons (WTPH-G, WTPH-D, or WTPH - 418.1 Modified)
2. Benzene/ toluene/ ethylbenzene/ xylene (Method 8020 BTEX for gasoline soils only)*
3. Halogenated Volatile Organics (Method 8010, 8021, or 8240)
4. Pesticides and PCB's (Method 8080)
5. Total metals concentration for (a) through (h): * (a) arsenic (b) barium (c) cadmium (d) chromium (e) lead (f) mercury (g) selenium (h) silver

* If elevated benzene and total metal concentrations are detected, additional analyses for TCLP benzene and TCLP metals may be required.

No soils referenced herein may be delivered until this certificate is received and approved by TPST, and TPST issues manifest(s) and assigns a delivery date. If any soils delivered to TPST are found to be "hazardous waste" pursuant to federal regulations or "dangerous waste" pursuant to state regulations, Client shall be solely responsible for their removal. If Client fails to so remove such soils, TPST, acting as Client's agent, may arrange for such removal at Client's expense.

This is a complete and accurate description of the soil referenced herein; no deliberate or willful omissions have been made and all known or suspected hazards have been disclosed herein. I further hereby certify that the soil is not "hazardous" or "dangerous" as defined by U.S. Environmental Protection Agency (EPA), State of Washington, or local regulations, and that no other knowledge concerning other TCLP constituents have been withheld. I further certify that the soils referenced herein contain no free liquids. All required analysis reports are attached.

Generator/Owner Authorized Signature: Marty Cramer Date: 12/14/00

Print Name: Martin Cramer Title: Project Manager

Revised 02/16/96

COP0015444

TABLE 1 (Page 1 of 2)
SUMMARY OF SOIL FIELD SCREENING RESULTS AND CHEMICAL ANALYTICAL DATA[1]
PORTLAND TERMINAL, PORTLAND, OREGON

Soil Sample Number	Date Sampled	Depth of Sample (feet)	Field Screening Results[2]		Gasoline-range Hydrocarbons (Northwest Method TPH-Gx) (mg/kg)	Diesel- and Oil-range Hydrocarbons (Northwest Method TPH-Dx) (mg/kg)		BETX Compounds[3] (EPA Method 8021B) (mg/kg)				Source Oil Match?[4]
			Headspace Vapor (ppm)	Sheen		Diesel	Oil	B	E	T	X	
Tosco Initial Soil Samples[5]												
SA-01	06/15/00	0.08	–	–	–	65,600	–	–	–	–	–	Match
SA-02	06/15/00	0.33	–	–	–	27,700	–	–	–	–	–	Match
SA-03	06/15/00	1.08	–	–	–	112,000	–	–	–	–	–	Match
SA-04	06/15/00	1.58	–	–	–	3,840	–	–	–	–	–	Match
SA-05	06/15/00	2.5	–	–	–	58.9	–	–	–	–	–	Match
PA-01	06/15/00	0.08	–	–	–	169,000	–	–	–	–	–	Match
PA-02	06/15/00	0.42	–	–	–	34,100	–	–	–	–	–	Match
PA-03	06/15/00	0.83	–	–	–	26,200	–	–	–	–	–	Match
PA-04	06/15/00	1.17	–	–	–	16,500	–	–	–	–	–	Match
PA-05	06/15/00	1.58	–	–	–	24,400	–	–	–	–	–	Match
PA-06	06/15/00	2.5	–	–	–	24,600	–	–	–	–	–	Match
PA-07	06/15/00	4.33	–	–	–	20,300	–	–	–	–	–	Match
GeoEngineers' Supplemental Soil Samples												
PA-1-4.5	06/21/00	4.5	1,195	MS	4,340	13,500	<500	<5.00	<5.00	<5.00	53.2	Match
PA-1-11.0	06/21/00	11.0	408	SS	167	299	<250	<0.200	<0.200	<0.200	0.601	No Match
PA-2-4.0	06/21/00	4.0	1,900	MS	4,680	15,900	<1,000	<5.00	<5.00	<5.00	56.4	Match
PA-2-12.5	06/21/00	12.5	450	SS	308	547	<500	<0.200	0.262	<0.200	1.63	Match
PA-3-2.5	06/21/00	2.5	145	NS	146	1,070	<500	<0.100	0.170	<0.100	1.04	Match
PA-4-3.0	06/21/00	3.0	20	NS	3.90	<25.0	<50	<0.050	<0.050	<0.050	0.0532	Match
SA-1-2.0	06/21/00	2.0	2,140	MS	986	3,560	<500	<1.00	1.83	<1.00	10.3	Match
SA-1-7.0	06/21/00	7.0	2,900	HS	6,290	3,350	<500	<5.00	70.4	18.0	490	No Match
SA-2-2.5	06/21/00	2.5	600	MS	856	2,110	<500	<0.50	1.24	<0.50	8.35	Match
SA-2-6.0	06/21/00	6.0	1,300	MS	340	346	<50	<0.500	0.823	<0.500	4.72	No Match
SA-3-1.5	06/21/00	1.5	1,200	HS	3,620	15,000	<1,000	<2.50	4.51	2.54	58.6	Match
SA-3-5.0	06/21/00	5.0	1,500	MS	896	3,370	<500	<0.500	2.22	0.845	9.43	Match
SA-4-1.5	06/21/00	1.5	518	MS	175	360	<500	<0.200	<0.200	<0.200	1.03	Match
SA-4-5.5	06/21/00	5.5	880	SS	187	143	<50	<0.200	0.475	<0.200	2.78	No Match

Notes appear on page 2 of 2.

TABLE 1 (Page 2 of 2)

Soil Sample Number	Date Sampled	Depth of Sample (feet)	Field Screening Results[2]		Gasoline-range Hydrocarbons (Northwest Method TPH-Gx) (mg/kg)	Diesel- and Oil-range Hydrocarbons (Northwest Method TPH-Dx) (mg/kg)		BETX Compounds[3] (EPA Method 8021B) (mg/kg)				Source Oil Match?[4]
			Headspace Vapor (ppm)	Sheen		Diesel	Oil	B	E	T	X	
DEQ Soil Cleanup Levels - SOCLEAN					NE	NE	NE	0.1	100	80	800	NA
DEQ Level 2 Soil Matrix Cleanup Standards					80	500	500	NE	NE	NE	NE	NA
Risk-Based Concentrations												
Ingestion, Dermal Contact, and Inhalation												
Residential					NE	NE	NE	8.2	2,000	1,700	4,100	NA
Occupational					NE	NE	NE	29	47,000	31,000	63,000	NA
Excavation Worker					NE	NE	NE	1,100	85,000	40,000	72,000	NA
Volatilization to Outdoor Air												
Residential					NE	NE	NE	11	330	540	360	NA
Occupational					NE	NE	NE	21	330	540	360	NA
Vapor Intrusion into Buildings												
Residential					NE	NE	NE	0.091	330	190	360	NA
Occupational					NE	NE	NE	0.5	330	540	360	NA
Leaching to Ground Water												
Residential					NE	NE	NE	0.044	330	390	360	NA
Occupational					NE	NE	NE	0.10	330	540	360	NA
EPA Region IX PRGs for Soil (mg/kg)												
Residential					NE	NE	NE	0.62	230	520	1,400	NA
Industrial					NE	NE	NE	1.4	230	520	4,500	NA
SSL (DAF = 1)[6]					NE	NE	NE	0.002	0.7	0.6	10	NA

Notes:

[1]Chemical analyses were conducted by North Creek Analytical of Portland, Oregon.

[2]See Attachment A for a description of field screening methods. NS = no sheen, SS = slight sheen, MS = moderate sheen, HS = heavy sheen

[3]B = benzene, E = ethylbenzene, T = toluene, X = xylenes.

[4]Results were verbally reported to Tosco by the analytical laboratory.

[5]Initial soil sampling conducted by Tosco and Cowlitz personnel.

[6]SSL (DAF = 1) = soil screening level for potential leachate from soil to ground water for a dilution - attenuation factor of one.

ppm = parts per million, mg/kg = milligrams per kilogram, "--" = not tested, NE = not established, NA = not applicable

"<0.050" indicates that the analyte was not detected at a concentration greater than the concentration indicated.

Shading indicates concentration greater than regulatory cleanup criteria or risk-based concentrations.

No. 4823030TR1.xls

Table 31b
Subsurface Soil Analytical Results - Total Metals

Willbridge Terminal
Portland, Oregon

Sample Identification	Date Sampled	Depth (ft.)	Arsenic (ppb)	Barium (ppb)	Cadmium (ppb)	Chromium (ppb)	Lead (ppb)	Mercury (ppb)	Selenium (ppb)	Silver (ppb)	Zinc (ppb)
Chevron											
C-RF 1	0/13/9	16	5030	85300	675	14700	ND	ND	ND	ND	38000
GATX											
G-HP 1	11/5/98	14	4540	000000	ND	15000	ND	ND	ND	ND	46000
G-HP 1 Duplicate	11/5/98	14	6820	90900	ND	17200	ND	70.9	735	ND	57200
G-HP 3	11/5/98	14	2930	71000	ND	15600	ND	ND	ND	ND	46600
G-HP 9	11/3/98	8	16400	000000	1040	30400	25300	ND	ND	ND	76000
G-RF 2	0/29/9	11	3080	000000	ND	27800	ND	ND	ND	ND	57200
G-RF 4	0/29/9	15	1590	000000	664	21800	ND	ND	ND	ND	46100
G-RF 4 Duplicate	0/29/9	15	2630	000000	8760	30800	15200	ND	ND	ND	69400
Tosco											
T-HP 1	11/3/98	24	2960	81100	ND	12900	ND	ND	ND	ND	43700
T-HP 3	11/4/98	24	3230	90200	ND	14800	ND	ND	ND	ND	64000
T-HP 6	0/14/9	3.5	3440	85200	529	12000	13300	ND	ND	ND	42800
T-RF 2	0/13/9	16	000000	000000	1230	29800	ND	ND	ND	ND	57100
UTIL											
G-HP 12	4/1/99	12	3050	60600	ND	19300	7140	ND	ND	ND	47000
G-HP 13	3/31/99	18	4540	61300	ND	19800	7910	ND	ND	ND	46000
UB-1	3/31/99	20	3620	100000	ND	16600	3050	ND	ND	ND	54400

Thursday, October 21, 1999

COLUMBIA RIVER SAND & GRAVEL

12/19/00 AOC 0422
CORRESP.

ATTN: Marty Cramer,

Our current dredging areas are From River marker 94 to River marker 106 on the Columbia River.

We use in excess of over 1 million gallons of water while dredging and 1 million gallons of water while off loading sand into our Holding ponds.

The fill sand dredged is very clean and consistent.

Sincerely

Wes Yolton
Sales Rep.
CR S+G.

THIS IS FOR THE BACKFILL USED TO FILL THE EXCAVATIONS ASSOCIATED W/ THE 6/00 KEROSENE SPILL.

PHONE (360) 694-1627 • FAX (360) 694-4809 • MAIL: P.O. BOX 1039, CAMAS, WA 98607
VANCOUVER PLANT: 3101 N.W. GATEWAY AVE., VANCOUVER, WA • PORTLAND PLANT: 10504 N.W. ST. HELENS RD., PORTLAND, OR

AOC 0922
WASTE

TPS TECHNOLOGIES INC.
A ThermoRetec Company

9333 N Harborgate Street
Portland, OR 97203
(503) 735-9525
(503) 240-1712 FAX

FAX TRANSMITTAL

DATE: 12-22-00

TO: Marty Chames / Tosco

FAX NUMBER: 503-248-1592

FROM: Sharon Sharon Quast

NUMBER OF PAGES INCLUDING COVER: 4

Thanks

MESSAGE Please print and sign your name at the "X"s on the attached manifest(s) and return to me via fax at 503-240-1712.
They say 2-3 more loads
5

DEC 22 '00 11:41AM TPS TECH/OREGON

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
	Generator		A09	05748	006

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): (name & address) TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) –	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): (name & address) TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Names: MARTY CRAMER — Generator ☒ Consultant ☐ — Signature and date: [signature] — Month: 12 Day: 22 Year: 01

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

COP0015450

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment	Responsible for Payment:	Transporter Truck #:	Facility #: Given by TPS:	Load #
	Generator		A09 05745	009

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
	Person to Contact:	
	FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): (name & address)	**Site Phone #:**	BTEX Levels
TOSCO/ PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	TPH Levels AVG. Levels
Designated Facility (Transport to): (name & address)	**Facility Phone #:**	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☒	Consultant ☐	Signature and date:	Month	Day	Year
MARTIN CRAMER				12	22	00

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

COP0015451

Generator and/or Consultant

5526 NW DOANE AVENUE PORTLAND, OR 97210 USA	Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5529 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1917 Person to Contact: MARY CRAMER FAX #: (503) –	BTEX Levels TPH Levels AVO Levels
Designated Facility (Transport to): *(name & address)* TEST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		32/00			
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☒ Consultant ☐	Signature and date:	Month	Day	Year
Marty Cramer			12	22	00

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Matt Brenes		12	22	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARRAY	

Please print or type

COP0015452

AOC 0922
WASTE

Soil Master (c) TPS Technologies, Inc.

Customer Job Report

Gross & Tare Weight Codes: M=Manual; S=Scale; T=Trk File

Job Number Name	SiteAddress	SiteCity	State	ZipCode
A09 -- 05745 TOSCO/PORTLAND TERMIN	5528 NW DOANE AVE.	PORTLAND	OR	97210

Load #	Date & Time Out	Transporter #	Truck & Trailer Number	Gross (lb)	Tare (lb)	Net (lb)	Net Wt (tons)
1	12/21/00 12:03			31,200M	18,520M	12,680	6.34
2	12/21/00 12:54			32,740M	18,340M	14,400	7.20
3	12/21/00 13:45			32,560M	18,560M	14,000	7.00
4	12/21/00 14:41			33,440M	18,600M	14,840	7.42
5	12/22/00 08:26			28,260M	18,780M	9,480	4.74
6	12/22/00 09:38			31,640M	19,960M	11,680	5.84
7	12/22/00 10:41			32,100M	19,600M	12,500	6.25
8	12/22/00 11:50			30,940M	19,240M	11,700	5.85
9	12/27/00 15:07			27,940M	16,300M	11,640	5.82
10	12/27/00 16:05			29,240M	13,280M	15,960	7.98
11	12/28/00 07:50			25,680M	13,260M	12,420	6.21
12	12/28/00 08:54			26,780M	13,260M	13,520	6.76
13	12/28/00 10:03			28,040M	13,300M	14,740	7.37
14	12/28/00 11:43			32,180M	13,280M	18,900	9.45

Completed Loads	Manifests Received	Completed Weight	Estimated Weight	TOTAL Net Wt:
100.00%	14	53.80%	175.00 (tons)	94.23 (tons)

COP0015453

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-21-00	Generator	PNE	A09	05745	001

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	 Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		3	12000	18520	12680
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				6340	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Walters	Jim Walters	12	21	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TPS INVOICING COPY

COP0015454

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-21-00	Generator	PNE AC	927 A09	05745	002

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			32740	18340	14400
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7.20	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Matt Brent | Signature and date: Matt Brent | Month 12 | Day 21 | Year 00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date: Sharon Quast

Please print or type.

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Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/21/00	Generator	PNE A	A09	05745	003

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			32560	18560	14000
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7.00	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Jim Walters | Signature and date: Jim Walters | Month 12 | Day 21 | Year 00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date: Sharon Quast

Please print or type.

TPS INVOICING COPY

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Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/22/05	Generator	PNE	A09	05745	001

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	 Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		28260	18780	9480	
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			4.74		

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Jim Brockway | Signature and date: Jim Brockway | Month: 12 | Day: 22 | Year: 05

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date: Sharon Quast

Please print or type.

TPS INVOICING COPY

COP0015457

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-21-00	Generator	PNE	A09	05745	005

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVO Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			33440	18608	14840
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7.52	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: Month Day Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Jim Walters | Signature and date: Jim Walters | Month 12 Day 21 Year 00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date: Sharon Quast

Please print or type.

TPS INVOICING COPY

COP0015458

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/22/00	Generator	PNE	A09	05745	006

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			31640	19960	11680
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				5,84	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Matt Brenes | Signature and date: Matt Brenes | Month: 12 | Day: 22 | Year: 00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date: Sharon Quast

Please print or type.

TPS INVOICING COPY

COP0015459

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-27-00	Generator	PNE	A09	05745	007

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** **Person to Contact:** **FAX #:**	**Customer Account Number with TPS:**
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	**BTEX Levels**
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) –	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:**	**Facility Permit Numbers**
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:** **Person to Contact:** **FAX #:**	**Transporter's US EPA ID No.:** **Transporter's DOT No.:** **Customer Account Number with TPS:**

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		32.00	196.00	125.00	
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			6.25		

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Matt Brenes	Signature and date: Matt Brenes	Month: 12	Day: 27	Year: 00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TPS INVOICING COPY

COP0015460

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #: Given by TPS:	Load #
12-22-00	Generator	PNE	A09 05745	009

Generator's Name and Billing Address:
TOSCO REFINING CO.
5528 NW DOANE AVENUE
PORTLAND, OR 97210 USA

Generator's Phone #: (503) 248-1517
Person to Contact: MARTY CRAMER
FAX #: (503) 248-1592
Generator's US EPA ID No.:
Customer Account Number with TPS: 1003586

Consultant's Name and Billing Address:

Consultant's Phone #:
Person to Contact:
FAX #:
Customer Account Number with TPS:

Generation Site (Transport from): *(name & address)*
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.
PORTLAND, OR 97210 USA

Site Phone #: (503) 248-1517
Person to Contact: MARY CRAMER
FAX #: (503) –
BTEX Levels
TPH Levels
AVG. Levels

Designated Facility (Transport to): *(name & address)*
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET
PORTLAND, OR 97203 USA

Facility Phone #: 503-735-9525
Person to Contact: SHARON QUAST
FAX #: 503-240-1712
Facility Permit Numbers:

Transporter Name and Mailing Address:

Transporter's Phone #:
Person to Contact:
FAX #:
Transporter's US EPA ID No.:
Transporter's DOT No.:
Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			35940	19260	16700
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				5.85	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Jim Brockway | Signature and date: | Month 12 | Day 22 | Year 00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date:

Please print or type.

TPS INVOICING COPY

COP0015461

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/27/00	Generator	PNE		A09 05745	008

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			27960	16301	1690
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				5.82	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: | Signature and date: | Month: 12 | Day: 27 | Year: 00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date:

Please print or type.

TPS INVOICING COPY

COP0015462

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/27/00	Generator	PNE	409	05745	010

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			29240	13280	15960
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7.98	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
John Brockman		12	27	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TPS INVOICING COPY

COP0015463

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/28/00	Generator	PNE	409	05745	011

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			25680	13260	12420
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				6.21	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Brockway		12	28	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TPS INVOICING COPY

COP0015464

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/28/10	Generator	PNE	409	05745	012

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	 Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			26780	13260	13520
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				6.76	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Brockway		12	28	10

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

TPS INVOICING COPY

COP0015465

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/28/06	Generator	PNE	A09	05745	013

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			28040	13300	14740
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7.37	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: J.M. Brockway | Signature and date: [signature] | Month: 12 | Day: 28 | Year: 06

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date: [signature]

Please print or type.

TPS INVOICING COPY

COP0015466

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/28/00	Generator	PNE	409	05745	014

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			32180		
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
J.M. Brockman	J. M. Brockman	12	28	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TPS INVOICING COPY

COP0015467

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020915

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -001 12/21/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	12:00:36pm	Gross Wt:	31,200	15.60	Manual Wt
0	OUT -->	12:02:33pm	Tare Wt:	18,520	09.26	Manual Wt
			NET WT:	12,680	06.34	

TRANSPORTER/DRIVER: PHE/WALTERS

Weighmaster

COP0015468

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-21-00	Generator	PNE	409	05745	001

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	 Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		3	12000	18520	12680
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				6-34	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Walters	Jim Walters	12	21	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TRANSPORTER'S COPY

COP0015469

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/1-00	Generator	PNE		A09 05745	

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		3/20D	18520		12680
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				6034	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Walters	Jim Walters	12	21	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN PARRAY	

Please print or type.

GENERATOR/consultant's COPY

COP0015470

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020916

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -002 12/21/00

Generator Site Information

TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information

TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				Lbs	TONS	
0	IN --->	12:49:37pm	Gross Wt:	32,740	16.37	Manual Wt
0	OUT -->	12:53:34pm	Tare Wt:	18,340	09.17	Manual Wt
			NET WT:	14,400	07.20	

TRANSPORTER/DRIVER: PNE/BRENES

Weighmaster _____

COP0015471

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-21-00	Generator	PNE	409	05745	002

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	 Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			32740	18340	14400
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7.20	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐	Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Matt Brent	Matt Brent	12	21	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TRANSPORTER'S COPY

COP0015472

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/21/00	Generator	PNE	409	05745	002

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	**Transporter's Phone #:** Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			30740	15340	15400
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7220	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Matt Brents	Matt Brents	12	21	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

GENERATOR/consultant's COPY

COP0015473

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020918

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -003 12/21/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	01:43:02pm	Gross Wt:	32,560	16.28	Manual Wt
0	OUT --->	01:43:14pm	Tare Wt:	18,560	09.28	Manual Wt
			NET WT:	14,000	07.00	

TRANSPORTER/DRIVER: PNE/WALTERS

Weighmaster

COP0015474

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/21/00	Generator	PNE	A09	05745	003

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** / **Person to Contact:** / **FAX #:**	**Customer Account Number with TPS:**
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	**BTEX Levels**
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503)	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:**	**Facility Permit Numbers**
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:** / **Person to Contact:** / **FAX #:**	**Transporter's US EPA ID No.:** / **Transporter's DOT No.:** / **Customer Account Number with TPS:**

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			32560	560	14000
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7.00	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐	Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Walters	Jim Walters	12	21	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TRANSPORTER'S COPY

COP0015475

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/21/00	Generator	PNE		05745	001

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503)	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			32560	560	14000
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7.00	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Walters	Jim Walters	12	21	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

GENERATOR/consultant's COPY

COP0015476

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020926

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -005 12/22/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	08:21:44am	Gross Wt:	28,260	14.13	Manual Wt
0	OUT -->	08:26:16am	Tare Wt:	18,780	09.39	Manual Wt
			NET Wt:	9,480	04.74	

TRANSPORTER/DRIVER: PNE/BROCKWAY

Weighmaster

COP0015477

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/22/03	Generator	PNE	A09	05745	004

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** Person to Contact: FAX #	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) –	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:** 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	**Transporter's Phone #:** Person to Contact: FAX #	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			28260	18780	9480
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				4.74	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐	Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Brockway		12	22	03

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TRANSPORTER'S COPY

COP0015478

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/22/05	Generator	FIVE	409	05745	001

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
	Person to Contact:	
	FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503)	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:** 503-735-9525	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		28260	18780	9480	
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			9720		

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
		12	22	05

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

GENERATOR/consultant's COPY

COP0015479

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020921

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -004 12/21/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	02:37:25pm	Gross Wt:	33,440	16.72	Manual Wt
0	OUT -->	02:40:47pm	Tare Wt:	18,600	09.30	Manual Wt
			NET WT:	14,840	07.42	

TRANSPORTER/DRIVER: PNE/WALTERS

Weighmaster: Shawn Quast

COP0015480

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-21-00	Generator	PNE	A09	05745	005

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503)	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		3	34400	18600	15840
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			72.42		

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐	Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Walters	Jim Walters	12	21	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TRANSPORTER'S COPY

COP0015481

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-21-00	Generator	PNE		A09 05745	001

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503)	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			33440	16600	16840
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			7.42		

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Walters	Jim Walters	12	21	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

GENERATOR/consultant's COPY

COP0015482

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020935

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -006 12/22/00

Generator Site Information

TOSCO/PORTLAND TERMINAL
5528 NW DUANE AVE.

PORTLAND, OR 97210 USA

Facility Information

TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	09:28:22am	Gross Wt:	31,640	15.82	Manual Wt
0	OUT -->	09:38:14am	Tare Wt:	19,960	09.98	Manual Wt
			NET WT:	11,680	05.84	

TRANSPORTER/DRIVER: PNE/VRENES

Weighmaster

COP0015483

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/22/00	Generator	PNE	A09	05745	006

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
	Person to Contact:	
	FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503)	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:** 503-735-9525	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ❑ Organic ❑ Clay ❑ Other ❑	0 - 10% ❑ 10 - 20% ❑ 20% - over ❑	Gas ❑ Diesel ❑ Other ❑			31640	19960	11680
Sand ❑ Organic ❑ Clay ❑ Other ❑	0 - 10% ❑ 10 - 20% ❑ 20% - over ❑	Gas ❑ Diesel ❑ Other ❑				5.84	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ❑ Consultant ❑	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Matt Brenes	Signature and date: Matt Brenes	Month	Day	Year
		12	22	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TRANSPORTER'S COPY

COP0015484

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/22/00	Generator	PUC	A09	05745	006

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO DISTRIBUTION CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: ~~MARTY CRAMER~~ FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: Person to Contact: (503) 248-1517 ~~MARY CRAMER~~ FAX #: (503)	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			21640	9960	11680
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				5,84	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Matt Brenes | Signature and date: Matt Brenes | Month: 12 | Day: 22 | Year: 00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date:

Please print or type.

GENERATOR/consultant's COPY

COP0015485

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020939

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest #

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	10:33:24am	Gross Wt:	32,100	16.05	Manual Wt
0	OUT -->	10:40:51am	Tare Wt:	19,600	09.80	Manual Wt
			NET WT:	12,500	06.25	

TRANSPORTER/DRIVER: PNE/BRENES

Weighmaster

COP0015486

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-27-00	Generator	PNE	A09	05745	001

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** Person to Contact: FAX #	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) –	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:** 503-735-9525	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:** Person to Contact: FAX #	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		32/00	19600	12500	
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				6.25	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by mc/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐	Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Matt Briones	Matt Briones	12	22	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TRANSPORTER'S COPY

COP0015487

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
7-27-00	Generator	PNE	409	05745	001

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
	Person to Contact:	
	FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503)	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:** 503-735-9525	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		32/00	196000	72500	
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				6.25	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Matt Brenes	Signature and date:	Month	Day	Year
		12	32	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

GENERATOR/consultant's COPY

COP0015488

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020946

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -000 12/22/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DUANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	11:44:34am	Gross Wt:	30,940	15.47	Manual Wt
0	OUT --->	11:49:37am	Tare Wt:	19,240	09.62	Manual Wt
			NET WT:	11,700	05.85	

TRANSPORTER/DRIVER: PNE/BROOKWAY

Weighmaster

COP0015489

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-22-00	Generator	PNE		A09 05745	001

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
	Person to Contact:	
	FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	~~(503) 248-1517~~ Person to Contact: MARY CRAMER FAX #: (503)	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:** 503-735-9525	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			39940	19240	11.7 TONS
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				5.85	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Jim Lockey	Signature and date:	Month	Day	Year
		12	22	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

TRANSPORTER'S COPY

COP0015490

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12-22-09	Generator	PNE		A09 05745	001

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO PEFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
	Person to Contact:	
	FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Person to Contact: (503) 248-1517 MARY CRAMER FAX #:	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:** 503-735-9525	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			39940	17210	11.730
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				5.85	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: | Signature and date: | Month | Day | Year

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST JOHN BARRAY | Signature and date:

Please print or type.

GENERATOR/consultant's COPY

COP0015491

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020970

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -009 12/27/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
@	IN --->	02:59:02pm	Gross Wt:	27,940	13.97	Manual Wt
@	OUT -->	03:06:37pm	Tare Wt:	16,300	08.15	Manual Wt
			NET WT:	11,640	05.82	

TRANSPORTER/DRIVER: PNE/BROCKWAY

Weighmaster

COP0015492

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/27/00	Generator	PNE	R09	05745	008

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:**	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:** Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			27960	16301	1640
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				5.82	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
[illegible]	[signature]	12	30	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	[signature]

Please print or type.

TRANSPORTER'S COPY

COP0015493

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/27/10	Generator	PNE	A09	05745	008

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** **Person to Contact:** **FAX #:**	**Customer Account Number with TPS:**
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	**BTEX Levels**
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503)	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:** 503-735-9525	**Facility Permit Numbers**
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:** **Person to Contact:** **FAX #:**	**Transporter's US EPA ID No.:** **Transporter's DOT No.:** **Customer Account Number with TPS:**

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			79840	16300	16540
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				582	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST & JOHN BARBAY	

Please print or type.

GENERATOR/consultant's COPY

COP0015494

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020971

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -010 12/27/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	03:59:09pm	Gross Wt:	29,240	14.62	Manual Wt
0	OUT -->	04:04:29pm	Tare Wt:	13,280	06.64	Manual Wt
			NET Wt:	15,960	07.98	

TRANSPORTER/DRIVER: PNE/BRUCKWAY

Weighmaster

COP0015495

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/27/00	Generator	PNE	409	05745	010

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:**	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N. HARBORGATE STREET PORTLAND, OR 97203 USA	503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			29240	13280	15960
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7.98	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
[illegible]	[signature]	12	27	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TRANSPORTER'S COPY

COP0015496

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/27/02	Generator	PNE	409	05745	1116

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
	Person to Contact:	
	FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:**	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			29240	13260	15960
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				7.48	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
		12	27	02

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARRAY	

Please print or type.

GENERATOR/consultant's COPY

COP0015497

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020972

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -011 12/28/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	07:44:55am	Gross Wt:	25,680	12.84	Manual Wt
0	OUT -->	07:49:54am	Tare Wt:	13,260	06.63	Manual Wt
			NET WT:	12,420	06.21	

TRANSPORTER/DRIVER: PNE/BROCKWAY

Weighmaster: Sharon Carr

COP0015498

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/28/00	Generator	PNE	409	05745	011

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:**	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	
Transporter Name and Mailing Address:	**Transporter's Phone #:** Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			25680	13760	12420
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				6.21	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
[illegible]	[signature]	12	28	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	Sharon Quast

Please print or type.

TRANSPORTER'S COPY

COP0015499

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/26/07	Generator	PWE	409	05745	011

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** **Person to Contact:** **FAX #:**	**Customer Account Number with TPS:**
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	**Transporter's Phone #:** **Person to Contact:** **FAX #:**	**Transporter's US EPA ID No.:** **Transporter's DOT No.:** **Customer Account Number with TPS:**

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			25680	13260	12420
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐				6.21	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐	Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
[illegible]	[illegible]	12	26	07

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	[signature]

Please print or type.

GENERATOR/consultant's COPY

COP0015500

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020974

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -012 12/28/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	08:48:14am	Gross Wt:	26,780	13.39	Manual Wt
0	OUT -->	08:54:25am	Tare Wt:	13,260	06.63	Manual Wt
			NET WT:	13,520	06.76	

TRANSPORTER/DRIVER: PNE/BROCKWAY

Weighmaster:

COP0015501

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/28/10	Generator	PNE	409	05745	013

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			26780	13260	13520
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			6.76		

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Jim Cockrum		12	28	10

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

TRANSPORTER'S COPY

COP0015502

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/28/10	Generator	PNE	409	05745	

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ❑ Organic ❑ Clay ❑ Other ❑	0 - 10% ❑ 10 - 20% ❑ 20% - over ❑	Gas ❑ Diesel ❑ Other ❑			26780	13760	13020
Sand ❑ Organic ❑ Clay ❑ Other ❑	0 - 10% ❑ 10 - 20% ❑ 20% - over ❑	Gas ❑ Diesel ❑ Other ❑				6.76	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ❑ Consultant ❑	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
		12	28	

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARRAY	

Please print or type.

GENERATOR/consultant's COPY

COP0015503

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR020976

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -013 12/28/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	09:55:27am	Gross Wt:	28,040	14.02	Manual Wt
0	OUT -->	10:02:33am	Tare Wt:	13,300	06.65	Manual Wt
			NET WT:	14,740	07.37	

TRANSPORTER/DRIVER: PNE/BROCKWAY

Weighmaster

COP0015504

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/28/00	Generator	PNE	A09	05745	013

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	 Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ❑ Organic ❑ Clay ❑ Other ❑	0 - 10% ❑ 10 - 20% ❑ 20% - over ❑	Gas ❑ Diesel ❑ Other ❑			28040	13300	14740
Sand ❑ Organic ❑ Clay ❑ Other ❑	0 - 10% ❑ 10 - 20% ❑ 20% - over ❑	Gas ❑ Diesel ❑ Other ❑				7.37	

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ❑ Consultant ❑	Signature and date:	Month	Day	Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
J.M. Cockings		12	28	00

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

TRANSPORTER'S COPY

COP0015505

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/28/00	Generator	PNE	A09	05745	013

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			28	14/10	13300 / 14240
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					237

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Jim [illegible] | Signature and date: | Month | Day | Year

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date: [signature]

Please print or type.

GENERATOR/consultant's COPY

COP0015506

TPST SOIL RECYCLERS OF OREGON

9333 N. Harborgate Street Portland, OR 97203

OR 020982

WEIGHMASTER CERTIFICATE – LICENSE #68636

THIS IS TO CERTIFY that the following described soil commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, as prescribed by the Division of Measurement Standards of the Oregon Department of Agriculture.

Manifest # A09 -05745 -014 12/28/00

Generator Site Information
TOSCO/PORTLAND TERMINAL
5528 NW DOANE AVE.

PORTLAND, OR 97210 USA

Facility Information
TPST SOIL RECYCLERS OF OREGON
9333 N HARBORGATE STREET

PORTLAND, OR 97203 USA

				LBS	TONS	
0	IN --->	11:33:15am	Gross Wt:	32,180	16.09	Manual Wt
0	OUT -->	11:40:20am	Tare Wt:	13,280	06.64	Manual Wt
			NET WT:	18,900	09.45	

TRANSPORTER/DRIVER: PNE/BROCKWAY

Weighmaster Sharon Ortt

COP0015507

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/28/01	Generator	PNE	A09	05745	01

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐			52180		
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: | Signature and date: | Month: 12 | Day: 28 | Year: 01

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: SHARON QUAST / JOHN BARBAY | Signature and date:

Please print or type.

TRANSPORTER'S COPY

COP0015508

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
12/08/10	Generator	PWE	409	05745	

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	**Consultant's Phone #:** / Person to Contact: / FAX #	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)*	**Site Phone #:** (503) 248-1617 Person to Contact: MARY CRAMER FAX #: (503)	BTEX Levels TPH Levels AVG. Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA		
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:** 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA		
Transporter Name and Mailing Address:	**Transporter's Phone #:** / Person to Contact: / FAX #	Transporter's US EPA ID No.: / Transporter's DOT No.: / Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		12 YD			
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

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Print or Type Name:	Signature and date:	Month	Day	Year
		12		

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARRAY	

Please print or type.

GENERATOR/consultant's COPY

COP0015509

nca™
North Creek Analytical, Inc.
Environmental Laboratory Network
www.ncalabs.com

11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 (425) 420-9200 FAX 420-9210
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210
20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 FAX 382-7588

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: Tosco Refining Co.
REPORT TO: Marty Crame RS
ADDRESS: 5528 NW Doane St.
Portland OR 97210
PHONE: 503-248-1514 FAX: 248-1592

INVOICE TO: ← Same
P.O. NUMBER: 350604

PROJECT NAME: TK 2669
PROJECT NUMBER:
SAMPLED BY: Scott Gilfillan CCS

TURNAROUND REQUEST in Business Days*

Organic & Inorganic Analyses: 10 | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: STD. 10 | 5 | 4 | 3 | 2 | 1 | <1

OTHER Please Specify

*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES: TPH D Ext (see Remarks)	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. Hole A @ 2'9"	01/02/01 1240	X	Soil	1		
2. Hole A @ 5'6"	01/02/01 1251	X		1		
3. Hole A @ 8'1"	01/02/01 1306	X		1		
4. Hole A @ 9'6"	01/02/01 1318	X		1		
5. Hole A @ 10'5"	01/02/01 1330	X		1		
6. Hole B @ surface	01/02/01 1334	X		1		
7. Hole B @ 5"	01/02/01 1336	X		1		
8. Hole B @ 3'0"	01/02/01 1351	X		1		
9. Hole C @ surface	01/02/01 1354	X		1		
10. Hole C @ 6"	01/02/01 1359	X		1		
11. Hole C @ 2'10"	01/02/01 1417	X	Soil	1		
12.						
13.						
14.						
15.						

RELINQUISHED BY: Scott Gilfillan DATE:
PRINT NAME: Scott Gilfillan FIRM: CCS TIME:

RECEIVED BY: Sarah Passage DATE: 01/02/01
PRINT NAME: Sarah Passage FIRM: NCA TIME: 1620

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Please compare to source oil samples submitted 12/22 for Tank 2669 to see if they are same

TEMP:

COC REV 3/99 PAGE OF

COP0015510

TPS TECHNOLOGIES INC.
A ThermoRetec Company

9333 N Harborgate Street
Portland, OR 97203
(503) 735-9525
(503) 240-1712 FAX

FAX TRANSMITTAL

DATE: 12/28/00

TO: Marty Cramer / Tosco

FAX NUMBER: 503-248-1592

FROM: Sharon Quast

NUMBER OF PAGES INCLUDING COVER: 2

MESSAGE Please print and sign your name at the "X"s on the attached manifest(s) and return to me via fax at 503-240-1712. You are close on the wheel barrow loads — They are in 5yd truck. He says ½ load left so this should be the last one. I'll have Scottsdale office get you invoice ASAP. Thanks — Sharon

DEC 28 '00 11:18AM TPS TECH/OREGON

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Generator and/or Consultant

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
	Generator		A09	05745	01

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	(503) 248-1517	
	Person to Contact: MARTY CRAMER	
	FAX #: (503) 248-1592	Customer Account Number with TPS: 1003586

Consultant's Name and Billing Address:	Consultant's Phone #:	
	Person to Contact:	
	FAX #:	Customer Account Number with TPS:

Generation Site (Transport from): *(name & address)*	Site Phone #:	BTEX Levels
TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	(503) 248-1517	
	Person to Contact: MARY CRAMER	TPH Levels
	FAX #: (503)	AVG. Levels

Designated Facility (Transport to): *(name & address)*	Facility Phone #:	Facility Permit Numbers
TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	503-735-9525	
	Person to Contact: SHARON QUAST	
	FAX #: 503-240-1712	

Transporter Name and Mailing Address:	Transporter's Phone #:	Transporter's US EPA ID No.:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

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Print or Type Name:	Generator ☒ Consultant ☐	Signature and date:	Month	Day	Year
MARTIN CRAMER			12	28	00

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

2/2 d

DEC 28 '00 11:18AM TPS TECH/OREGON

TPS FACILITY COPY

COP0015512

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
	Generator		A09	05745	01

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	 Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

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MARTIN CRAMER			12	28	00

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Print or Type Name:	Signature and date:	Month	Day	Year

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Discrepancies:

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Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

DEC 28 '00 09:00AM TPS TECH/OREGON P.3/3

COP0015513

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #: Given by TPS:	Load #
	Generator		A09 05745	012

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1527 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	 Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1527 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPST SOIL RECYCLERS OF OREGON 9333 N HARBORGATE STREET PORTLAND, OR 97203 USA	Facility Phone #: 503-735-9525 Person to Contact: SHARON QUAST FAX #: 503-240-1712	Facility Permit Numbers
Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					
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Print or Type Name:	Generator ☒ Consultant ☐	Signature and date:	Month	Day	Year
MARTY CRAMER			12	28	00

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Print or Type Name:	Signature and date:	Month	Day	Year

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

DEC 28 '00 08:59AM TPS TECH/OREGON P.2/3

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
	Generator		A09	05745	011

Generator and/or Consultant

Generator's Name and Billing Address: TOSCO REFINING CO. 5528 NW DOANE AVENUE PORTLAND, OR 97210 USA	Generator's Phone #: (503) 248-1517 Person to Contact: MARTY CRAMER FAX #: (503) 248-1592	Generator's US EPA ID No. Customer Account Number with TPS: 1003586
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	Customer Account Number with TPS:
Generation Site (Transport from): *(name & address)* TOSCO/PORTLAND TERMINAL 5528 NW DOANE AVE. PORTLAND, OR 97210 USA	Site Phone #: (503) 248-1517 Person to Contact: MARY CRAMER FAX #: (503) -	BTEX Levels TPH Levels AVG. Levels
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Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

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Print or Type Name:	Generator ☒ Consultant ☐	Signature and date:	Month	Day	Year
Marty Cramer			12	27	00

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Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type.

COP0015515

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #: Given by TPS:	Load #
	Generator		A09 05745	010

Generator and/or Consultant

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Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX #:	 Customer Account Number with TPS:
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Transporter Name and Mailing Address:	Transporter's Phone #: Person to Contact: FAX #:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS:

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Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

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Print or Type Name: Generator ☒ Consultant ☐ | Signature and date: | Month 12 | Day 27 | Year 00

Transporter

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Print or Type Name:	Signature and date:	Month	Day	Year

Recycling Facility

Discrepancies:

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Print or Type Name:	Signature and date:
SHARON QUAST / JOHN BARBAY	

Please print or type

DEC 27 '00 04:18PM TPS TECH/OREGON P.2/3

Case Narrative

APL 0922 CORRECT.

CLIENT: TOSCO
PROJECT: G153 Release
PROJECT #: Portland
NCA #: P0L0654

January 20, 2001

1.0 DESCRIPTION OF CASE

North Creek Analytical, Portland received 10 soil samples on 12/21/00 from TOSCO for analysis by NWTPH-Gx, BTEX and NWTPH-Dx as requested on the chain of custody. Notes from Marty Cramer further requested comparison of hydrocarbons, in this submittal, with soils analyzed after a kerosene release in June, 2000 (NCA # P006346).

2.0 SAMPLE LIST

Refer to the *Chain of Custody* documents for a summary of sample information.

Each group of samples received is given an NCA# (SDG#), proceeded by a 'P' for Portland. This number consists of a one-digit code for the year, an alpha code for the month, and a sequential number for the group within the month. Each sample within the group is numbered sequentially by placing a dash after the NCA#. All samples were received, entered into the NCA LIMs system, and stored according to NCA sample handling procedures.

3.0 COMMENTS ON ANALYSIS

3.1 Analysis

The samples were analyzed following the procedures outlined in the applicable methods. Refer to the NCA report for specific prep methods used. The samples were refrigerated at approximately 4°C and were extracted and analyzed within the EPA recommended holding times without incident.

NWTPH-Gx and BTEX

Hyrdocarbons present and GC/FID traces were consistent with kerosene. The low levels of xylene present in soil is consistent with kerosene contaminated soils. The volatile chromatograms did not contain any hydrocarbon response indicating solvents or fuels other than kerosene. Forensic patterns were created using GC/FID traces from NWTPH-Dx method due to it's wide hydrocarbon range (C-6 to C-40+).

Hydrocarbon Identification

Subsurface Samples PA and SA Locations

Surface samples from the June, 2000 Kerosene spill were analyzed and reported in NCA work order # P006346. Samples collected from approximately 2-3 feet below surface will be discussed below:

Case Narrative

CLIENT: TOSCO
PROJECT: G153 Release
PROJECT #: Portland
NCA #: P0L0654

January 20, 2001

Sample PA-5-2.5

Chromatographic trace for this sample contains evidence of two petroleum products, kerosene and lubricating oil. The kerosene matches well with standards received by NCA after the G153 release. The heavy oil matches standards for common motor and lubricating oils. This product does not appear to be related to bunker or other residual fuel oils that have been detected at the TOSCO facility.

Samples PA-6-2.5, PA-7-2.0, PA-8-2.8, SA-5-2.0, SA-8-2.0

Kerosene is the only hydrocarbon present in these samples. The hydrocarbon envelope maximum response is at n-alkane C13. This represents a chromatographic shift from fresh kerosene which maximizes close to C-12. These samples are clearly undergoing degradation of light n-alkanes. The process (dissolution or biodegradation) cannot be determined from NWTPH-Dx analysis.

Samples PA-9-2.5, SA-7-2.75

Kerosene pattern is only slightly altered by weathering. The hydrocarbon envelope maximum response is C-12.

Samples SA-6-2.9, SA-9-2.4

Both samples are more altered than the others in the set. The hydrocarbon envelope for sample SA-6-2.9 is shifted right with tailing to n-alkane C-21. This may be due to alteration in part from biological degradation. SA-9-2.4 is highly weathered, exhibiting a near complete depletion of n-alkanes. The normal gaussian shape of the hydrocarbon envelope is preserved, indicating that soil may have experienced significant water washing and dissolution of soluble alkanes.

Kent Patton, Technical Director
North Creek Analytical, Portland

Kerosene Spill Soil Sample Results
(all results in mg/kg)

Area/ Sample No	Sample Depth (ft)	Heavy Oil	Diesel/ Kerosene	Gasoline	Xylenes	Ethyl Benzene	Toluene	Benzene	Notes
Pump Area – Initial Samples									
PA-01	0.08	NT	169,000	NT	NT	NT	NT	NT	Matches source oil
PA-02	0.42	NT	34,100	NT	NT	NT	NT	NT	Matches source oil
PA-03	0.83	NT	28,200	NT	NT	NT	NT	NT	Matches source oil
PA-04	1.17	NT	16,500	NT	NT	NT	NT	NT	Matches source oil
PA-05	1.58	NT	24,400	NT	NT	NT	NT	NT	Matches source oil
PA-06	2.5	NT	24,600	NT	NT	NT	NT	NT	Matches source oil
PA-07	4.33	NT	20,300	NT	NT	NT	NT	NT	Matches source oil
Pump Area – Supplemental Samples									
PA-1-4.5	4.5	ND	13,500	4,340	53.2	ND	ND	ND	Matches source oil
PA-1-11.0	11.0	ND	229	167	0.601	ND	ND	ND	No match – weathered
PA-2-4.0	4.0	ND	15,900	4,680	56.4	ND	ND	ND	Matches source oil
PA-2-12.5	12.5	ND	547	308	1.63	0.262	ND	ND	Matches source oil
PA-3-2.5	2.5	ND	1,070	146	1.04	0.17	ND	ND	Matches source oil
PA-4-3.0	3.0	ND	ND	3.90	0.0532	ND	ND	ND	Matches source oil
Separator/Lift Station Area – Initial Samples									
SA-01	0.08	NT	65,600	NT	NT	NT	NT	NT	Matches source oil
SA-02	0.33	NT	27,700	NT	NT	NT	NT	NT	Matches source oil
SA-03	1.08	NT	112,000	NT	NT	NT	NT	NT	Matches source oil
SA-04	1.58	NT	3,840	NT	NT	NT	NT	NT	Matches source oil
SA-05	2.5	NT	58.9	NT	NT	NT	NT	NT	Matches source oil
Separator/Lift Station Area – Supplemental Samples									
SA-1-2.0	2.0	ND	3,560	986	10.3	1.83	ND	ND	Matches source oil
SA-1-7.0	7.0	ND	3,350	6,290	490	70.4	18	ND	No match – contains gasoline
SA-2-2.5	2.5	ND	2,110	856	8.35	1.24	ND	ND	Matches source oil
SA-2-6.0	6.0	ND	346	340	4.72	0.823	ND	ND	No match – contains gasoline
SA-3-1.5	1.5	ND	15,000	3,620	58.6	4.51	2.54	ND	Matches source oil
SA-3-5.0	5.0	ND	3,370	896	9.43	2.22	0.845	ND	Matches source oil
SA-4-1.5	1.5	ND	360	175	1.03	ND	ND	ND	Matches source oil
SA-4-5.5	5.5	ND	143	187	2.78	0.475	ND	ND	No match

ADDITIONAL COSTS FOR REMOVAL OR TREATING SOIL

ENGINEERING = $5K
SHORING = $50K
PIPE SUPPORTS = $5K
EXCAVATION = $45K

DISPOSAL = $10K
CONTINGENCY = $35K (30%)

TOTAL = $140K

COP0015519

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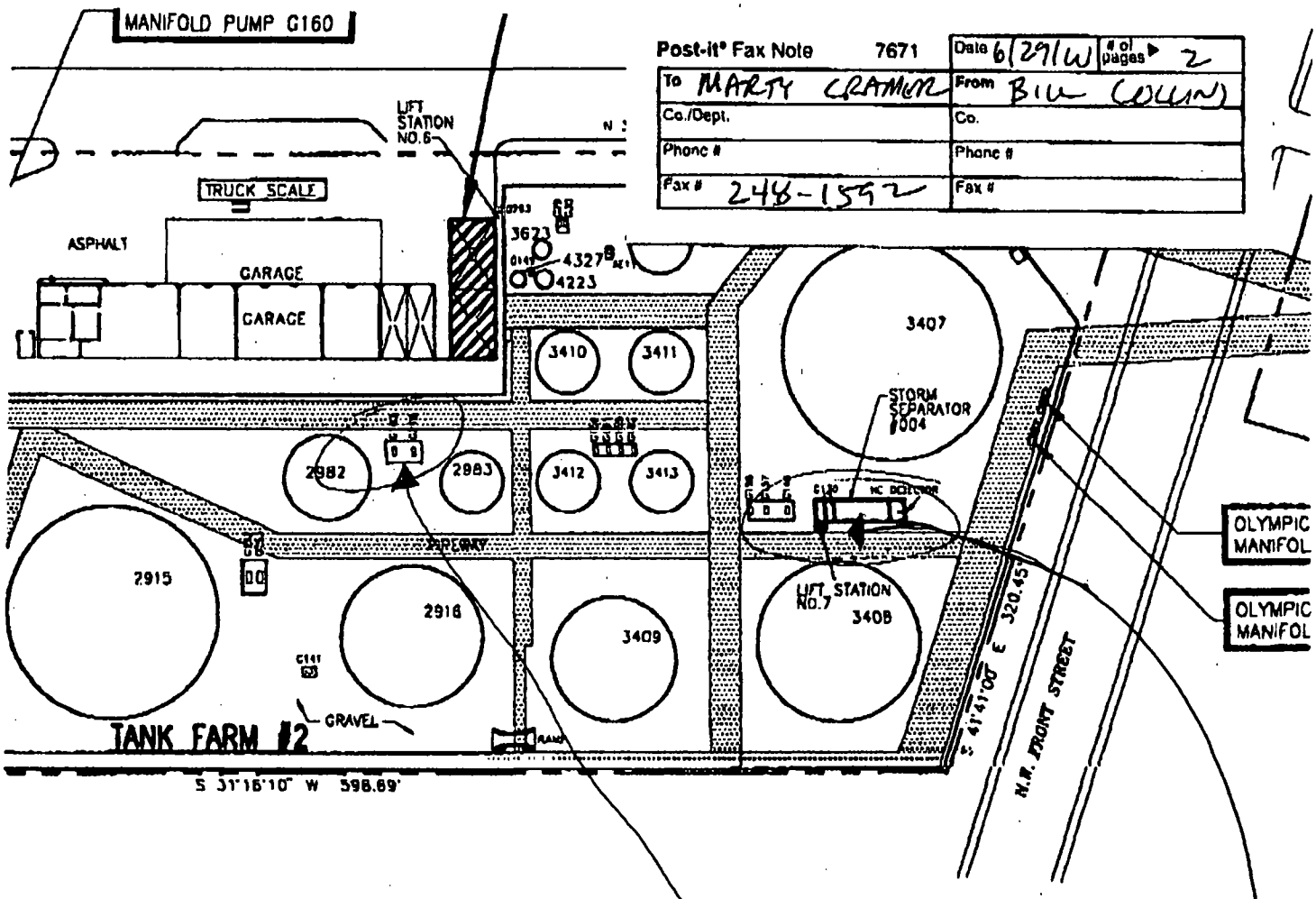
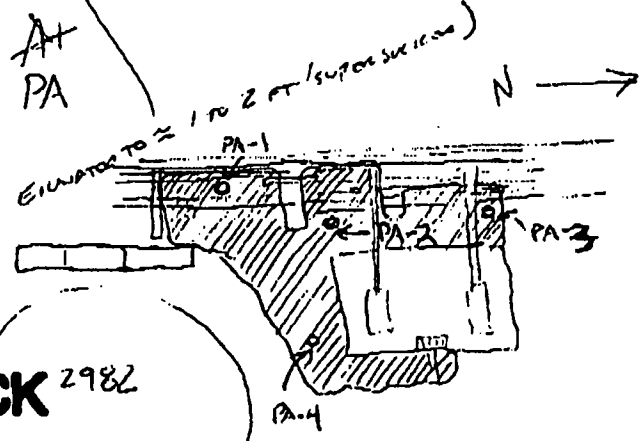
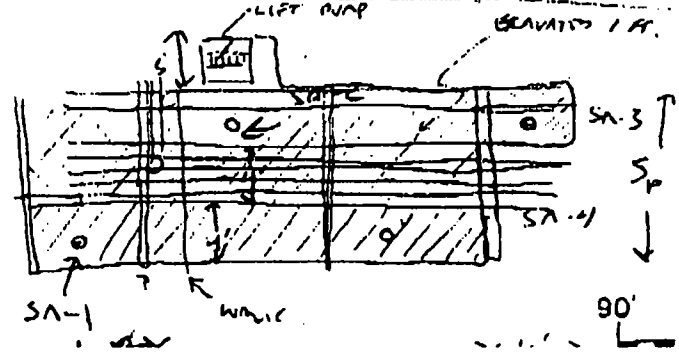
To MARTY CRAMER	From BILL COLLINS
Co./Dept.	Co.
Phone #	Phone #
Fax # 248-1592	Fax #



- DIESEL/BLACK OIL PUMP OFF AREA
- LUBE OIL TRUCK LOADING RACK
- BLACK OIL/RFO TRUCK LOADING RACK
- LUBE OIL/RFO TRUCK UNLOADING AREA

DRAFT



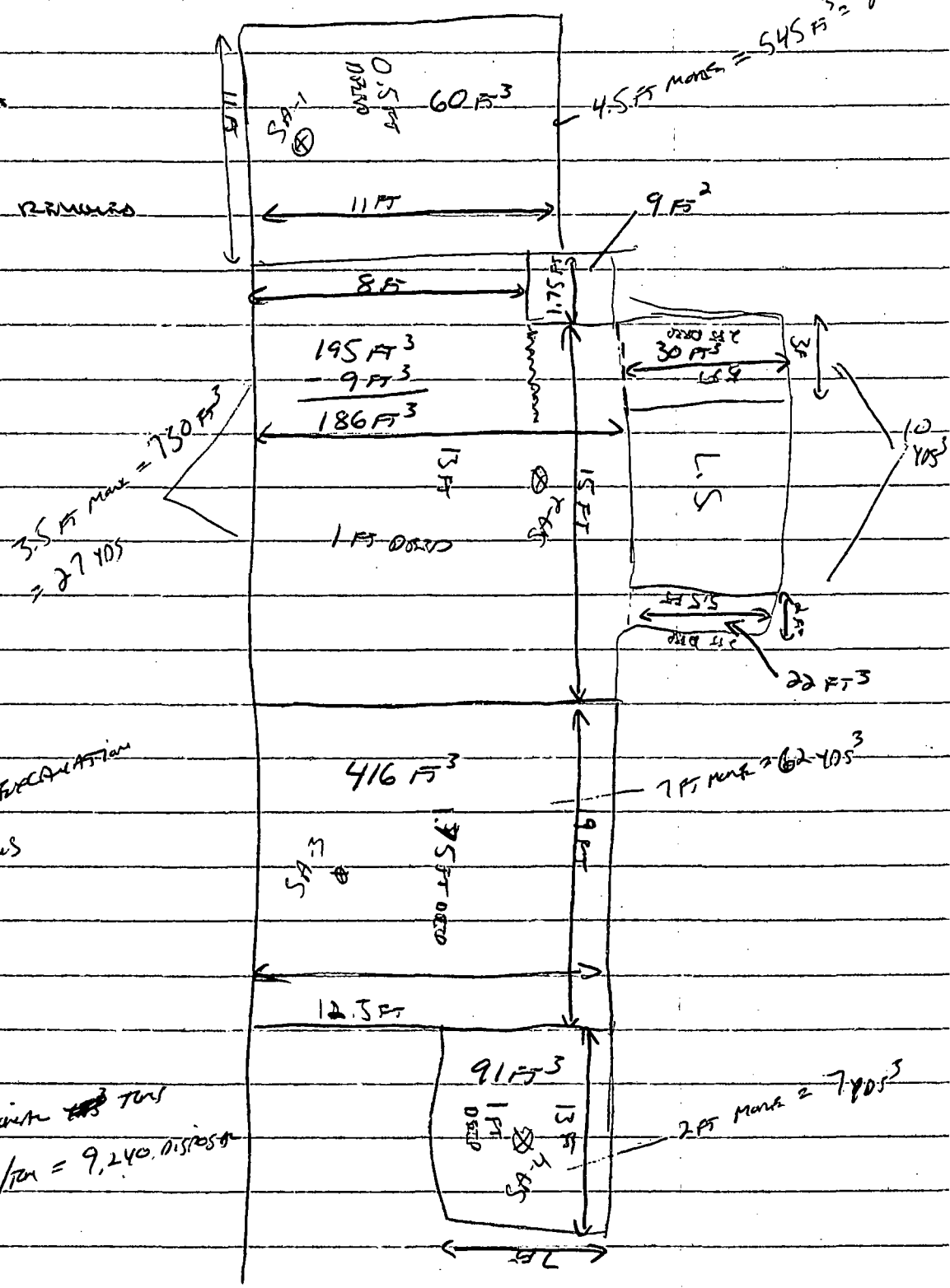


COP0015520

7/3/00

LIFT STATION/ SEPARATOR AREA

805 FT³ SOIL REMOVED
= 30 YDS³



86 YDS³ ADDITIONAL EXCAVATION
= 189 TONS

TOTAL SA & PA ADDITIONAL ~~TONS~~ TONS REMOVED = 330 × $28/TON = 9,240. DISPOSAL

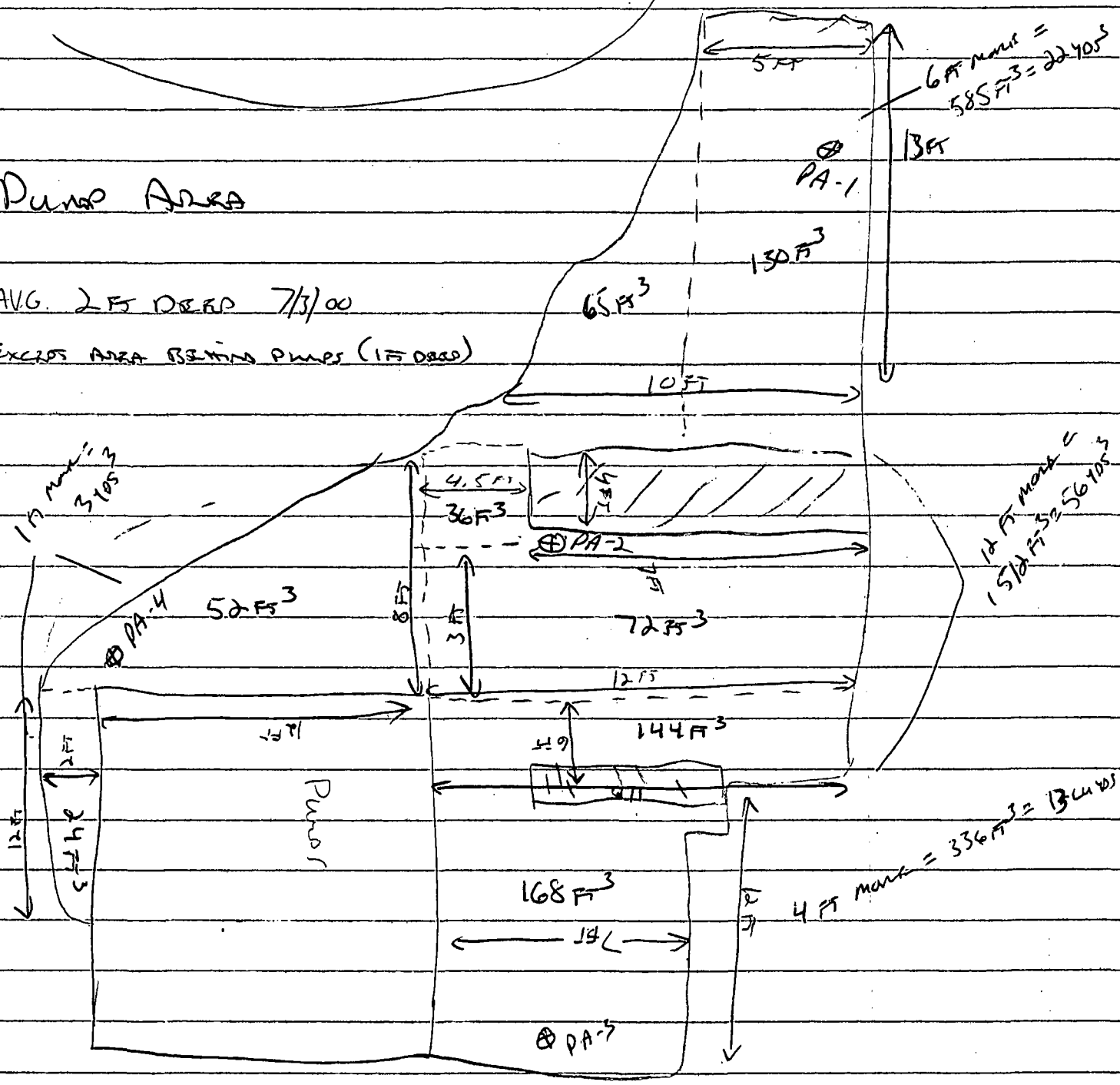
6538

7/3/00

Pump Area

AVG. 2 FT DEEP 7/3/00

EXCESS AREA BEHIND PUMPS (1 FT DEEP)



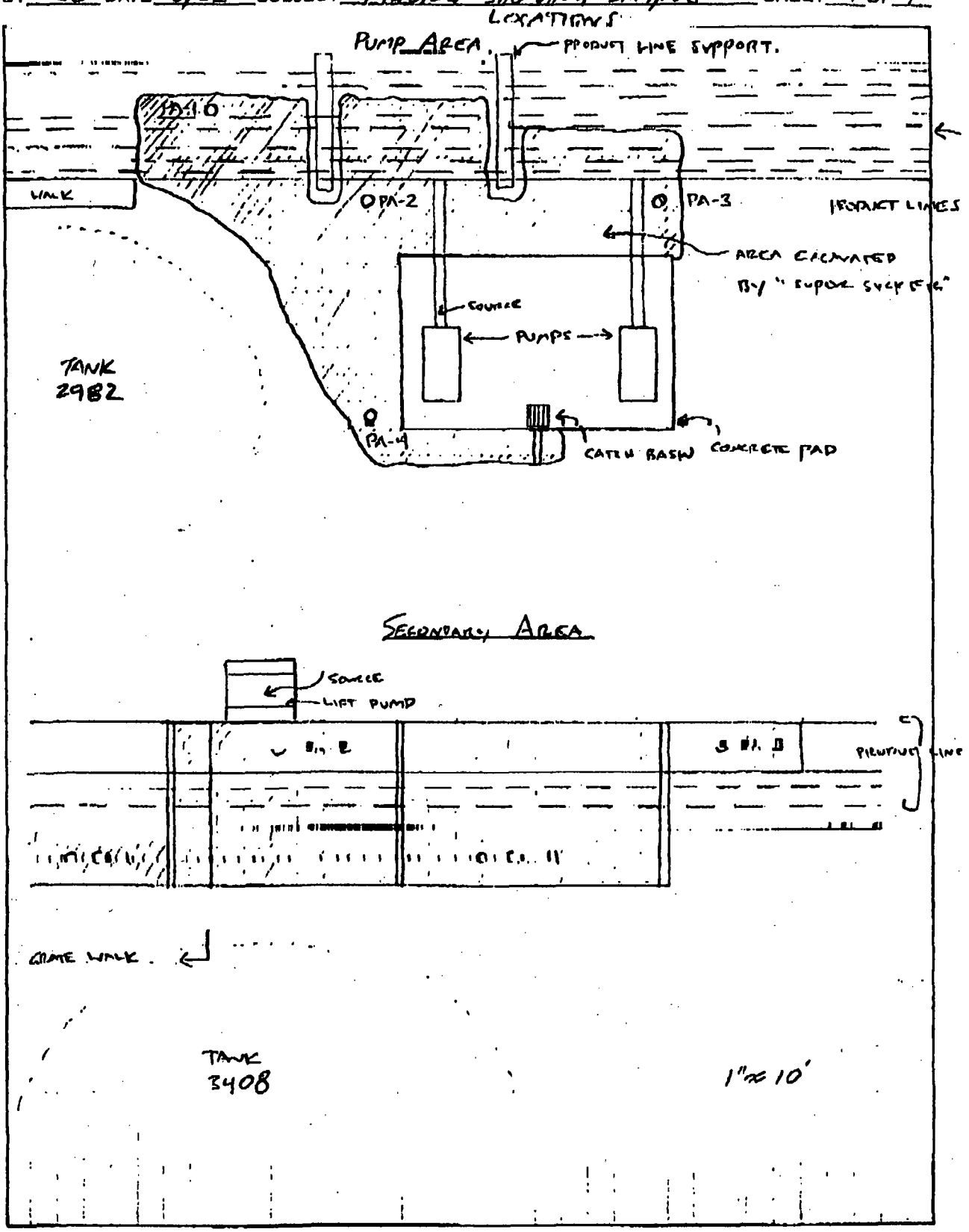
691 FT³ SOIL REMOVED

= 26 YDS³

ADDITIONAL 94 YDS³ WILL LIKELY REQUIRE REMOVAL = 141 TONS

JOB Portland Terminal FILE NO 4823-030-[illegible]

BY TJO DATE 6/[illegible] SUBJECT Figure showing sample locations SHEET 1 OF 1



Geo Engineers CHECKED BY DRAFT DATE

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PA-01	P006346-01	Soil	06/15/00 20:24	06/16/00 15:28
PA-02	P006346-02	Soil	06/15/00 20:27	06/16/00 15:28
PA-03	P006346-03	Soil	06/15/00 20:30	06/16/00 15:28
PA-04	P006346-04	Soil	06/15/00 20:32	06/16/00 15:28
PA-05	P006346-05	Soil	06/15/00 20:34	06/16/00 15:28
PA-06	P006346-06	Soil	06/15/00 20:38	06/16/00 15:28
PA-07	P006346-07	Soil	06/15/00 21:10	06/16/00 15:28
SA-01	P006346-08	Soil	06/15/00 20:47	06/16/00 15:28
SA-02	P006346-09	Soil	06/15/00 20:52	06/16/00 15:28
SA-03	P006346-10	Soil	06/15/00 20:53	06/16/00 15:28
SA-04	P006346-11	Soil	06/15/00 20:57	06/16/00 15:28
SA-05	P006346-12	Soil	06/15/00 21:05	06/16/00 15:28
Source Oil	P006346-13	Other wet	06/16/00 10:30	06/16/00 15:28

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PA-01 (P006346-01) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**169000**	5000	mg/kg dry	200	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	10000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
PA-02 (P006346-02) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**34100**	1250	mg/kg dry	50	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	2500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
PA-03 (P006346-03) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**28200**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
PA-04 (P006346-04) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**16500**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/20/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
PA-05 (P006346-05) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**24400**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
PA-06 (P006346-06) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**24600**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PA-07 (P006346-07) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**20300**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
SA-01 (P006346-08) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**65600**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
SA-02 (P006346-09) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**27700**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
SA-03 (P006346-10) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**112000**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
SA-04 (P006346-11) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**3840**	250	mg/kg dry	10	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*121 %*	*50-150*							
SA-05 (P006346-12) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**58.9**	25.0	mg/kg dry	1	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*107 %*	*50-150*							

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Source Oil (P006346-13) Other wet					Sampled: 06/16/00 Received: 06/16/00				
Diesel Range Organics	**932000**	100000	mg/kg wet	1000	NWTPH-Dx	06/16/00	06/19/00	0060490	R-02
Heavy Oil Range Hydrocarbons	ND	200000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Miscellaneous Physical/Conventional Chemistry Parameters
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PA-01 (P006346-01) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**81.5**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-02 (P006346-02) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**82.8**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-03 (P006346-03) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**88.3**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-04 (P006346-04) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**88.5**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-05 (P006346-05) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**87.6**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-06 (P006346-06) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**89.0**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-07 (P006346-07) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**90.5**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
SA-01 (P006346-08) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**88.8**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
SA-02 (P006346-09) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**91.2**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Miscellaneous Physical/Conventional Chemistry Parameters
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SA-03 (P006346-10) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**80.0**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
SA-04 (P006346-11) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**81.9**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
SA-05 (P006346-12) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**88.3**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060490 - TPH-D Extraction										
Blank (0060490-BLK1)				Prepared: 06/16/00 Analyzed: 06/19/00						
Diesel Range Organics	ND	25.0	mg/kg wet							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.82*		"	*5.00*		*96.4*	*50-150*			
LCS (0060490-BS1)				Prepared: 06/16/00 Analyzed: 06/19/00						
Diesel Range Organics	115	25.0	mg/kg wet	127		90.6	50-150			
Heavy Oil Range Hydrocarbons	62.0	50.0	"	75.9		81.7	50-150			
Surr: 1-Chlorooctadecane	*4.95*		"	*5.00*		*99.0*	*50-150*			
Duplicate (0060490-DUP1)	**Source: P006346-01**			Prepared: 06/16/00 Analyzed: 06/19/00						
Diesel Range Organics	166000	5000	mg/kg dry		169000			1.79	50	R-02
Heavy Oil Range Hydrocarbons	ND	10000	"		ND				50	R-02
Surr: 1-Chlorooctadecane	*NR*		"	*6.13*			*50-150*			*S-01*
Duplicate (0060490-DUP2)	**Source: P006346-12**			Prepared: 06/16/00 Analyzed: 06/19/00						
Diesel Range Organics	68.8	25.0	mg/kg dry		58.9			15.5	50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*5.09*		"	*5.66*		*89.9*	*50-150*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

www.ncalabs.com

Seattle 11720 North Creek Pkwy N, Suite 400; Bothell, WA 98011-8223
425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Notes and Definitions

A-01	Quantified against kerosene standard.
R-02	The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
wet	Sample results reported on a wet weight basis
RPD	Relative Percent Difference

NCA

P006346

OAL Oregon Analytical Laboratory

14855 SW Scholls Ferry Rd
Beaverton OR 97007
(503) 590-5300
FAX (503) 590-1404
1-800-644-0967

Chain of Custody Record
Laboratory Analysis Request

10.2 °C

COPY

Sampling: ☒ Grab ☐ Comp
OAL Hours
ISCO
www.oalab.com

Page 1 of 2
Site Visit ☐

Client Information
Company: TOSCO
Contact: MARTY CRAMER
Address: 5528 NW DUANE AVE
PORTLAND, OR 97210
Phone #: 248-1517 Fax #: 248-1592

Billing Information
Company: SAME
Contact:
Address:
Phone #: Fax #:

Project Information G163 RELEASE
Project Name: [illegible]
Project #: PORTLAND
P.O. #:
Comments:

Sampler's Name: MARTY CRAMER
Signature: [signature]
Quote #:
NOTE: If quote number is not referenced, standard pricing will be applied.
Provide Fax Results ☐ Yes ☐ No

Remarks
NEED TO DISTINGUISH BETWEEN FRESH KEROSENE & OTHER PETROLEUM CONTAMINATION

[N] Normal – 10 working days
[S] Special – 5 working days
[R] Rush – 24-72 hrs
[O] Other –

Sample Identification	Date	Time	FOR LAB USE ONLY OAL Login #	# of Containers	Matrix: Soil	Matrix: Water	Matrix: Other (Note in Remarks)	Analyses: Volatiles 820 / 8260 / 8240 8010 / 8020	Semivolatiles 625 / 8270 PAH(SIM)8270 PAH8310	Organochlor Pest 608 / 8081 PCB 608 / 8082	NW TPH-HCID Quantify? ☐ Yes ☐ No	NW TPH Quantification G X DX/OIL	BTEX 602 / 8021 ☐ MTBE ☐ Naphthalene	Metals ☐ Total ☐ TCLP ☐ Dissolved As Ba Cd Cr Pb Hg Se Ag Other						Turnaround	Remarks
PA-01	6/15	2024		1	X							X									
PA-02	↓	2027		1	X							X									
PA-03		2030		1	X							X									
PA-04		2032		1	X							X									
PA-05		2034		1	X							X									
PA-06		2038		1	X							X									
PA-07		2110		1	X							X									
SA-01		2047		1	X							X									
SA-02	↓	2052		1	X							X									

Relinquished		Relinquished		Relinquished	
Signature: [signature]	Date: 6/16/00	Signature: [signature]	Date: 6/16/00	Signature:	Date:
Print Name: Martin Cramer	Time: 2:32	Print Name: Kent L Pallon	Time: 3:28	Print Name:	Time:
Company: TOSCO		Company: NCA		Company:	
Received		**Received**		**Received**	
Signature: [signature]	Date: 6/16/00	Signature: [signature]	Date: 6/16/00	Signature:	Date:
Print Name: Kent D Pallon	Time: 2:32	Print Name: Bob Fahsholz	Time: 15:28	Print Name:	Time:
Company: NCA		Company:		Company:	

☐ Courier ☐ UPS ☐ FedEx ☐ Other
Received @ _____ °C
Appropriate Containers ☐ Yes ☐ No
_____ 4oz./8oz. Jars
_____ VOA Vials
_____ Plastic Bottles
_____ Glass Bottles
_____ Other _____

GE 71982 (Oct 99)

COP0015532

19C14

KCDL0046

Oregon Analytical Laboratory
14855 SW Scholls Ferry Rd
Beaverton OR 97007
(503) 590-5300
FAX (503) 590-1404
1-800-644-0967

COPY

Chain of Custody Record
Laboratory Analysis Request

10.2°C

Sampling: ☒ Grab ☐ Comp
OAL Hours _____
ISCO _____
www.oalab.com

Page 2 of 2
Site Visit ☐

Client Information
Company TOSCO
Contact MARTY CRAMER
Address 5528 NW DOANE AVE
PORTLAND, OR 97210
Phone # 248-1517 Fax # 248-1592

Billing Information
Company SAME
Contact _____
Address _____
Phone # _____ Fax # _____

Project Information
Project Name _____
Project # _____
P.O. # _____
Comments _____

Sampler's Name _____
Signature _____

Quote # _____
NOTE: If quote number is not referenced, standard pricing will be applied.
Provide Fax Results ☐ Yes ☐ No

Remarks
NEED TO DISTINGUISH BETWEEN FRESH KEROSENE & OTHER PETROLEUM CONTAMINATION

	Sample Identification	Date	Time	FOR LAB USE ONLY OAL Login #	# of Containers	Matrix: Soil	Water	Other (Note in Remarks)	Volatiles 8260 / 8240 8010 / 8020	Semivolatiles 625 / 8270 PAH(SIM)8270 PAH8310	Organochlor Pest 608 / 8081 PCB 608 / 8082	NW TPH-HCID Quantify? ☐ Yes ☐ No	NW TPH Quantification G X D/X/OIL	BTEX 602 / 8021 ☐ MTBE ☐ Naphthalene	Metals ☐ Total ☐ TCLP ☐ Dissolved As Ba Cd Cr Pb Hg Se Ag Other _____
1	SA-03	6/15	2055		1	X							X		
2	SA-04	↓	2057		1	X							X		
3	SA-05	↓	2105		1	X							X		
4	SOURCE OIL	6/16	1030		1			X							
5															
6															
7															
8															
9															

Turnaround
[N] Normal – 10 working days
[S] Special – 5 working days
[R] Rush – 24-72 hrs
[O] Other – _____

Remarks
KEROSENE (HEATING OIL #1)

Relinquished	Date	Time
Signature	6/16/00	2:32
Print Name MARTY CRAMER		
Company TOSCO		

Received	Date	Time
Signature	6/16/00	2:32
Print Name KENT D. PATTON		
Company		

Relinquished	Date	Time
Signature	6/16/00	3:28 PM
Print Name KENT PATTON		
Company NCN		

Received	Date	Time
Signature	6/16/00	15:28
Print Name BOB FALCHETTI		
Company		

Relinquished	Date	Time
Signature		
Print Name		
Company		

Received	Date	Time
Signature		
Print Name		
Company		

☐ Courier ☐ UPS ☐ FedEx ☐ Other
Received @ _____ °C
Appropriate Containers ☐ Yes ☐ No
_____ 4oz./8oz. Jars
_____ VOA Vials
_____ Plastic Bottles
_____ Glass Bottles
_____ Other _____

GE 71982 (Oct 99)

COP0015533

AOC 0922
CORRESP.

Case Narrative

CLIENT: TOSCO
PROJECT: Tank 2669
PROJECT #:
NCA #: P1A0034

January 20, 2001

1.0 DESCRIPTION OF CASE

North Creek Analytical, Portland received 11 soil samples on 01/02/01 from TOSCO for analysis by NWTPH-Dx, as requested on the chain of custody. Notes from Scott Gilfillan further requested comparison of hydrocarbons in soils with MDO product and soil samples taken from Tank 2669 and delivered to NCA on 12/22/00 (NCA # P0L0709).

2.0 SAMPLE LIST

Refer to the *Chain of Custody* documents for a summary of sample information.

Each group of samples received is given an NCA# (SDG#), proceeded by a 'P' for Portland. This number consists of a one-digit code for the year, an alpha code for the month, and a sequential number for the group within the month. Each sample within the group is numbered sequentially by placing a dash after the NCA #. All samples were received, entered into the NCA LIMs system and stored according to NCA sample handling procedures.

3.0 COMMENTS ON ANALYSIS

3.1 Analysis

The samples were analyzed following the procedures outlined in the applicable methods. Refer to the NCA report for specific prep methods used. The samples were refrigerated at approximately 4°C and were extracted and analyzed within the EPA recommended holding times without incident.

Hydrocarbon Identification

Samples from "Hole A": P1A0034-01, 02, 03, 04, 05

At all depth intervals taken from Hole A, the chromatographic traces are consistent with product taken from the MDO tank # 2669, and soils previously analyzed in NCA P0L0709. Age of release could not be determined based on analysis performed. All soil samples are significantly depleated in heavy waxes present in the product. The time required for these waxes (normal-alkane hydrocarbons) to biodegrade is dependent on local conditions. The chemical makeup of the product is relatively unchanged by depth, the chromatographic trace for Hole A@10'5" compares well with Hole A@2'9".

Samples from "Hole B": P1A0034-06, 07, 08

Sample extracts from the surface to 3 feet contain hydrocarbons characteristic of highly weathered bunker fuel oil or a heavy residual oil. This hydrocarbon does not resemble MDO. If bunker oil was the original source oil for the hydrocarbons in Hole B, the time since release is estimated at 25+ years.

Case Narrative

CLIENT: TOSCO
PROJECT: Tank 2669
PROJECT #:
NCA #: P1A0034

January 20, 2001

Samples from "Hole C": P1A0034-09, 10, 11

The surface and 2'10" samples are similar to Hole B, bunker/residual oil. The sample at 6" produces a chromatogram of a highly weathered middle distillate fuel and a trace of residual fuel. The middle distillate fuel in Hole C@6" is greater than 25 years old. None of the Hole C samples resemble the MDO product found in Hole A.

Kent Patton, Technical Director
North Creek Analytical, Portland

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696
TTY (503) 229-6993

January 24, 2001

Marty Cramer
Tosco Refining
5528 NW Doane Avenue
Portland, OR 97210

AOC 0922
AGENCY CORRESP.

Re: Diesel Fuel Spill
OERS No. 01-0181

Dear Mr. Cramer:

On January 24, 2001, the Department of Environmental Quality (DEQ) received a report of a spill or release of marine diesel fuel from an aboveground storage tank located at your facility. The information received indicates your company first discovered or suspected the occurrence of the release on December 21, 2000. You are requested to take and/or continue all containment and cleanup actions possible to prevent the spread of the spill to public waters, groundwater or soils beyond the original spill site.

In accordance with Oregon Administrative Rules (OAR) 340-108-040 (copy attached), you are required to submit a written report describing the spill. I have enclosed a spill report outline as a guideline so that all information that is necessary for the documentation and review of your spill report is received. We ask you to submit this information no later than February 13, 2001. Please submit the report to:

Chris Kaufman, DEQ, 2020 SW 4th, #400, Portland, Oregon, 97201-5884.

Responsible parties are required to pay costs incurred by DEQ for oversight of the investigation and cleanup of the spill or release (Oregon Revised Statutes 465.255). DEQ oversight costs include direct and indirect costs. Direct costs include site-specific expenses and legal costs. Indirect costs are those general management and support costs of the DEQ allocable to oversight of this cleanup and not charged as direct, site-specific costs.

If you have any questions about this request, please contact Chris Kaufman at (503) 229-5614.

Enclosures: OAR 340-108
Spill Report Outline

COP0015536

Tosco Refining Company
A Division of Tosco Corporation
Portland Terminal
5528 Northwest Doane Avenue
Portland, Oregon 97210

TOSCO

February 14, 2001

Mr. Chris Kaufman
Oregon DEQ
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-5884

Re: Written Spill Report
Diesel Fuel Spill OERS No. 01-0181

Dear Mr. Kaufman:

In response to your correspondence dated January 24, 2001 and in accordance with OAR 340-108-040, please find the enclosed written report concerning the recent marine diesel oil release from Tank 2669 at the Tosco Portland Terminal. As explained in my voice mail, please accept my apologies for the slight delay in submitting this report as I have been very busy with other projects including the formation of a PRP group to address sediment contamination in Portland Harbor.

If you have any questions or require additional information, please feel free to contact me at (503) 248-1517 or John Sherman, Terminal Superintendent, at (503) 248-1538.

Sincerely,

Martin Cramer
Project Manager, Remediation

File: Portland/OilSpill/Spills/2669DEQrptsub.doc

Enclosures

cc: John Sherman, Tosco

SPILL/RELEASE REPORT

1 - GENERAL INFORMATION

OERS No. 01-0181

a. Company/Individual Name: Tosco Refining Co.

b. Address: 5525 NW Doane Ave

Portland, OR

c. Company Contact Person: John Sherman

d. Phone Number(s): (503) 248-1538

e. Specific on-site location of the release (and address if different from above):

Same

Please provide a map of the site showing area(s) where the release occurred, any sample collection locations, location of roads/ditches/surface water bodies, etc.

2 - RELEASE INFORMATION

a. Date/Time Release started: Unknown Date/Time stopped: 12/19/00 - 1700 hrs

b. Release was reported to (specify Date/Time/Name of Person contacted where applicable):

ODEQ 1/24/01 - 1130 hrs - Mike Greenburg

OERS 1/24/01 - 1030 hrs - Colleen

NRC

Other (describe):

c. Person(s) reporting release: Marty Cramer

d. Name, quantity and physical state (gas, liquid, solid or semi-solid) of material(s) released:

Marine Diesel Oil, Liquid, 55-Gals.

Please attach copies of material safety data sheets (MSDS) for released material(s).

e. The release affected: ___ Air ? Groundwater ___ Surface Water X Soil ___ Sediment

f. Name and distance to nearest surface water body(s), even if unaffected (include locations of creeks, streams, rivers and ditches that discharge to surface water on maps):

Willamette River - Approx. 1500 FT N.E. of Spill Location

Has the release reached the surface water identified above?: ___ Yes X No

Could the release potentially reach the surface water identified above? ___ Yes X No

Explain: See Attached Narrative

g. Depth to nearest aquifer/groundwater: 12 FT to 14 FT

Is nearest aquifer/groundwater potable (drinkable)? ___ Yes X No

Has the release reached the nearest aquifer/groundwater? ___ Yes ? No

Explain: See Attached Narrative

h. Release or potential release to the air occurred? ___ Yes _X_ No

Explain: RELEASE TO SUBSURFACE SOIL ONLY

i. Was there a threat to public safety? ___ Yes _X_ No

j. Is there potential for future releases? ___ Yes _X_ No

Explain: HOLE IN BOTTOM OF TANK REPAIRED AND TWO COATS OF EPOXY LINING MATERIAL WERE APPLIED TO UPPER SURFACE OF TANK BOTTOM

k. Describe other effects/impacts from release (emergency evacuation, fish kills, etc.):

NONE

l. Describe how the release occurred. Include details such as the release source, cause, contributing weather factors, activities occurring prior to or during the release, dates and times of various activities, first responders involved in containment activities, etc.:

SEE ATTACHED NARRATIVE

3 - SITE INFORMATION

a. Adjacent land uses include (check all that apply and depict on site maps):
___ Residential _X_ Commercial ___ Light Industrial _X_ Heavy Industrial
___ Agricultural ___ Other (describe): _____

b. What is the population density surrounding the site: MINIMAL - PRIMARILY INDUSTRIAL

c. Is the site and/or release area secured by fencing or other means? _X_ Yes ___ No

d. Soil types (check all that apply): ___ alluvial ___ bedrock ___ clay _X_ sandy
_X_ silt ___ silty loam ___ artificial surface (cement/asphalt/etc.)

e. Describe site topography: RELATIVELY FLAT WITH LOCALIZED GRADIENTS TOWARDS STORM WATER CATCH BASINS AND PIPING TRENCHES

4 - CLEANUP INFORMATION

a. Was site cleanup performed? ___ Yes __X__ No
If No, explain: SEE ATTACHED NARRATIVE

b. Who performed the site cleanup?
Company Name: N/A
Address: _____
_____
Cleanup Supervisor: _____
Phone Number(s): _____

c. Has all contamination been removed from the site? ___ Yes __X__ No
If No, explain: SEE ATTACHED NARRATIVE

d. Estimated volume of contaminated soil removed: None

e. Estimated volume of contaminated soil left in place: 10 yds^3

f. Was a hazardous waste determination made for cleanup materials? ___ Yes __X__ No

g. Based on the determination, are the cleanup materials hazardous wastes?
___ Yes __X__ No If Yes, list all waste codes: N/A

h. Was contaminated soil or water disposed of at an off-site location? ___ Yes __X__ No
If yes, attach copies of receipts/manifests/etc., and provide the following information:
Facility Name: _____
Address: _____
_____
Facility Contact: _____
Phone Number(s): _____

i. Is contaminated soil or water being stored and/or treated on-site? ___ Yes __X__ No
If yes, please describe the material(s), storage and/or treatment area, and methods utilized (attach additional sheets if necessary):

j. Describe cleanup activities including what actions were taken, dates and times actions were initiated and completed, volumes of contaminated materials that were removed, etc. (attach additional sheets or contractor reports if necessary or more convenient):
N/A

5 - SAMPLING INFORMATION

Attach copies of all sample data and indicate locations of sample collection on maps.

a. Were samples of contaminated soil collected? X Yes ___ No ___ N/A
b. Were samples of contaminated water collected? ___ Yes ___ No X N/A
c. Were samples collected to show that all contamination had been removed?
___ Yes ___ No X N/A
d. Describe sampling activities, results and discuss rationale for sampling methods:

SEE ATTACHED NARRATIVE.

6 - SPILL REPORT CHECKLIST

To ensure that you have gathered all the information requested by the Department in this Spill/Release Report, please complete the following checklist:

X Map(s) of the site showing buildings, roads, surface water bodies, ditches, waterways, point of the release, extent of contamination, areas of excavation and sample collection locations attached.

X Material Safety Data Sheet (MSDS) for released material(s) attached.

X Sampling data/analytical results attached.

N/A Receipts/manifests (if any) for disposal of cleanup materials attached.

N/A Contractor reports (if any) attached.

Tosco Portland Terminal
Tank 2669 Release Report Narrative
OERS # 01-0181

2 – Release Information

f. Marine diesel oil (MDO) released from a small hole in the bottom of Tank 2669 could not reach the Willamette River as it appears to be entirely adsorbed by the underlying soil.

g. It is unlikely the release has reached the groundwater directly as a soil boring installed beneath the tank found the lower extent of vertical penetration to be approximately 10 ft. which is approximately 2 to 4 ft above the water table.

l. A small hole was discovered in the bottom of Tank 2669 during a routine API 653 internal inspection of the tank. The tank was first emptied of its contents of Marine Diesel Oil (MDO) and the typical accumulation of tank bottoms removed. This was followed by pressure washing of the tank floor and sides to allow for a complete inspection. The inspection revealed a few rust areas near the center of the tank floor that were scraped with a knife to determine roughly how deep the rust or corrosion penetrated into the floor. During this scraping process, a small hole about the size of a pencil tip was discovered. Because it was unclear if there was really a hole in the tank floor or the pressure washing and/or scraping created the hole, it was not reported as a release at that time.

A larger hole was cut in the floor on 12/21 to allow grab samples of soil to be collected down to 1 ft. below the hole and submitted to NCA for NWTPH-Dx and fingerprinting analyses. Although there was an odor to the samples, the tank was constructed in 1931 and we were concerned it could have been pre-existing contamination from historical operations. Additionally, a common tank construction practice during that time was to impregnate the soil beneath a tank with bunker oil to minimize corrosion. The analytical results received on 12/29 (see attached lab report dated 12/29/2000) indicated the soil samples were impacted with MDO but the penetration depth and quantity of the release were still unknown.

On January 2, 2001 a hand auger was used to collect deeper soil samples at the leak location (Hole A) and assess the depth of penetration. Two additional holes were cut in the tank floor 5 ft (Hole B) and 10 ft (Hole C) away to facilitate hand augering in those locations and assess the lateral spread of the release. Samples were collected to a depth of 10.5 ft in Hole A but only approximately 3 ft in Holes B and C as the soil was very dry and the hole repeatedly caved in and soil continually fell out of the sampler prior to it reaching the surface. The samples were again submitted to NCA and the preliminary TPH results were received on 1/5 but the fingerprinting results were not received by Tosco until 1/23 (see attached lab report dated 1/20).

Based on the analytical results, the release penetrated to a maximum depth of 10 ft with soil concentrations decreasing rapidly below about 6 ft. Calculations were then made (see attached explanation) to estimate the quantity released followed by a call to OERS to report the release. Data from Holes B and C suggest there

was historical contamination present, possibly from bunker fuel used to treat the underlying soil for corrosion control during tank construction.

The cause of the release was corrosion of the top of tank floor that the inspectors thought could have been due to salt water accumulation in that area of the tank floor. Small quantities of salt water can be introduced into products during transport by marine vessels from the refinery to our terminal.

4 – Cleanp Information

a. Cleanup was not performed due to the release being located beneath the tank and removal of the impacted soils would compromise the integrity of the tank even if the removed material was replaced. Additionally, the facility is under a DEQ consent order to assess and remediate historical contamination at the site. This release will be addressed directly or indirectly by that project.

c. See above response

5 – Sampling Information

d. See discussion under 2-I. above

Calculations for Tank 2669 Leak

Based on the hand auger sample analytical results and the soil type being silty sand (fairly permeable), it is assumed the MDO penetrated primarily vertically with moderate lateral spread (1:1 ratio) forming a cone shaped impact zone. Analytical results suggest vertical penetration terminated at about 10 ft bgs as the 9.5 ft sample contained 33 mg/kg and the 10.5 ft sample was ND. Because the upper foot of soil was sampled more intensively than the lower 9 feet and contained considerably higher concentrations, the analytical results from the upper three samples were averaged together to obtain a single data point which was then averaged with the results of the other four samples to obtain an overall average MDO soil concentration. The heavy oil range concentrations found in samples at 0, 0.4, and 5.5 ft were ignored as they were assumed to be the result of pre-existing contamination or overlap with diesel range results.

Based on the above, a spill volume was calculated as follows:

- Assume maximum depth of 10 ft
- Assume lateral spread of 1:1
- Assume average MDO concentration of 11,704 mg/kg
- Assume density of silty sand is 2.65 g/cc or 125 lbs/ft^3
- Assume cone shaped impact area
- Assume MDO specific gravity of 0.85 thus a density of 7.09 lbs/gal

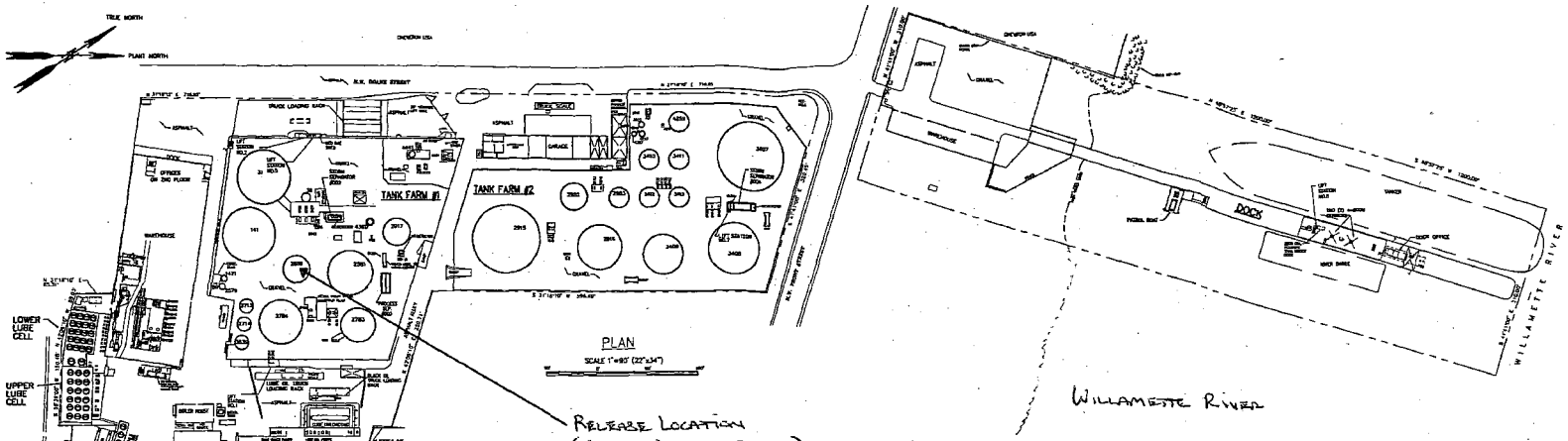
Impact Area;

$\pi \times 5\ ft^2 \times 10 \times 1/3 = 262 ft^2$

Volume of MDO contained in impact area;

$262 ft^2/1 \times 125$ lbs/$ft^2 \times 1$ kg/2.2 lbs x 11,704 mg/kg x 1 lb/453,592 mg = 384 lbs
384 lbs/1 x 1 gal/7.09 lbs = 54.2 gals

Therefore, the approximate volume of MDO that likely leaked from Tank 2669 is 55 gallons.



TANK DATA

TANK NO.	DIAMETER	HEIGHT	SERVICE	BARRELS	LOCATION
31	95'-5"	28'-9"	RFO	37,084	TF #1
36	15'-0"	14'-7"	SLOPS	520	TF #1
141	95'-5"	34'-0"	LFO	43,363	TF #1
1471	10'-9"	28'-8 1/2"	GDL 10W	463	TF #1
2581	78'-0"	48'-7"	CUTTER STOCK	38,733	TF #1
2879	10'-9"	29'-8"	GDL 10W	480	TF #1
2969	48'-0"	35'-3"	MARINE DIESEL	11,318	TF #1
2713	24'-0"	35'-0"	UNAX 46	2,854	TF #1
2714	24'-0"	35'-0"	GDL 15/40	2,854	TF #1
2783	66'-0"	48'-7"	DECANT	23,440	TF #1
2784	78'-0"	40'-10"	DIESEL NO.2	34,554	TF #1
2915	120'-0"	42'-0"	UNLEADED REGULAR	84,570	TF #2
2916	78'-0"	48'-0"	HO NO.1 /00 NO.2	60,880	TF #2
2917	48'-0"	48'-0"	450 NEUTRAL	15,480	TF #1
2982	48'-0"	36'-0"	HEATING OIL NO.1	11,400	TF #2
2983	36'-0"	42'-0"	150 NEUTRAL	7,510	TF #2
3407	120'-0"	40'-0"	BASE	80,575	TF #2
3408	80'-0"	40'-0"	SUPER UNLEADED	40,329	TF #2
3409	70'-0"	40'-0"	ETHANOL	27,400	TF #2
3410	35'-0"	42'-0"	AVGAS	7,185	TF #2
3411	35'-0"	42'-0"	SUPER UNLEADED	7,195	TF #2
3412	35'-0"	42'-0"	HEATING OIL NO.1	7,195	TF #2
3413	35'-0"	42'-0"	BASE	7,195	TF #2
3414	30'-0"	42'-0"	190 B/S	5,290	TF #3
3415	30'-0"	42'-0"	90 NEUTRAL	5,290	TF #3
3416	30'-0"	42'-0"	150 NEUTRAL	5,290	TF #3
3417	30'-0"	42'-0"	80 NEUTRAL	5,290	TF #3
3379	120'-0"	40'-0"	RFO	80,600	TF #3
3639	25'-0"	36'-0"	GDL 30	2,150	TF #1
3623	10'-9"	30'-0"	SLOPS	480	TF #2
3739	30'-0"	42'-0"	190 B/S	5,400	TF #3

TANK DATA

TANK NO.	DIAMETER	HEIGHT	SERVICE	BARRELS	LOCATION
3740	30'-0"	42'-0"	450 NEUTRAL	7,200	TF #3
3741	10'-9"	30'-0"	RAM MLT	480	U.L. CELL
3742	10'-9"	30'-0"	MP 8090	480	U.L. CELL
3743	10'-9"	30'-0"	TRAC FLD	480	U.L. CELL
3744	10'-9"	30'-0"	GR 100	480	U.L. CELL
3745	10'-9"	30'-0"	ACR 665	480	U.L. CELL
3746	10'-9"	30'-0"	LUB 7916A	480	U.L. CELL
3747	10'-9"	30'-0"	HTT 436	480	U.L. CELL
3757	10'-9"	30'-0"	PR9052002	480	U.L. CELL
3760	10'-9"	30'-0"	GR 460	480	U.L. CELL
3761	120'-0"	40'-0"	DIESEL NO.2	80,600	TF #3
4191	10'-9"	30'-0"	LUBHOSER	480	U.L. CELL
4192	10'-9"	30'-0"	TLA555	480	U.L. CELL
4223	10'-9"	30'-0"	GAS SLOPS	480	TF #2
4241	10'-9"	30'-0"	UNX AW32	480	U.L. CELL
4242	10'-9"	30'-0"	UNX AW32	480	U.L. CELL
4243	10'-9"	30'-0"	PM 220	480	U.L. CELL
4244	10'-9"	30'-0"	GR 22	480	TF #3
4245	10'-9"	30'-0"	150 B/S	480	TF #3
4252	50'-0"	32'-0"	NO.5 FUEL OIL	10,000	TF #3
4253	50'-0"	32'-0"	RFO	10,000	TF #3
4254	50'-0"	32'-0"	PS-300	10,000	TF #3
4255	50'-0"	32'-0"	D.O.S.	10,000	TF #3
4256	35'-0"	32'-0"		5,000	TF #3
4257	25'-0"	16'-0"	D.O.S.	1,000	TF #3
4258	10'-9"	30'-0"		480	TF #3
4259	35'-0"	32'-0"	TRANSMIX	5,480	TF #2
4268	10'-9"	30'-0"	FLUSH	480	TF #3
4281	10'-9"	30'-0"	ATF MP	480	U.L. CELL
4309	12'-5"	32'-0"	RAM MLT	715	U.L. CELL

TANK DATA

TANK NO.	DIAMETER	HEIGHT	SERVICE	BARRELS	LOCATION
4302	10'-9"	30'-0"		480	TF #3
4303	10'-9"	30'-0"	90 NEUTRAL	480	TF #3
4305	8'-6"	24'-0"		240	TF #3
4306	30'-0"	42'-2 1/2"	150 NEUTRAL	5,300	TF #3
4318	80'-0"	43'-3"	MFO	35,810	TF #3
4320	15'-0"	32'-2 1/2"	LUBE MIX	1,000	TF #3
4321	15'-0"	32'-2 1/2"	LUBE MIX	1,000	TF #3
4322	15'-0"	32'-2 1/2"	LUBE MIX	1,000	TF #3
4323	15'-0"	32'-2 1/2"	LUBE MIX	1,000	TF #3
4327	8'-8"	24'-0"	SLOPS	240	TF #2
4331	12'-6"	32'-0"	DELVAC 1200	715	U.L. CELL
4332	10'-0"	30'-0"	SUP-AIR	480	U.L. CELL
4333	10'-9"	30'-0"	MYD AW46	480	U.L. CELL
4334	10'-9"	30'-0"	EMPTY	480	U.L. CELL
4335	10'-9"	30'-0"	UNAX 32	480	TF. F
4336	10'-9"	30'-0"	EMPTY	480	TF. F
4337	10'-9"	30'-0"	UNAX 46	480	TF. F
4338	3'-6"	14'-0"	LUBE OIL ADD.	24	WAREHSE
4339	3'-6"	14'-0"	LUBE OIL ADD.	24	WAREHSE
4340	3'-6"	14'-0"	LUBE OIL ADD.	24	WAREHSE
4341	3'-6"	14'-0"	LUBE OIL ADD.	24	WAREHSE
4342	3'-6"	14'-0"	LUBE OIL ADD.	24	WAREHSE
4343	3'-6"	14'-0"	LUBE OIL ADD.	24	WAREHSE
4344	3'-6"	14'-0"	LUBE OIL ADD.	24	WAREHSE
4345	3'-6"	14'-0"	LUBE OIL ADD.	24	WAREHSE
4346	3'-6"	14'-0"	LUBE OIL ADD.	24	WAREHSE
4347	3'-6"	14'-0"	LUBE OIL ADD.	24	WAREHSE
4369	10'-9"	30'-0"	450 N	480	TF #1
4388	9'-4"	23'-9"	FLUSH	290	L.L. CELL
4389	9'-4"	23'-9"	UNIDEX 46	290	L.L. CELL
4390	9'-4"	23'-9"	SAE 150	290	L.L. CELL

TANK DATA

TANK NO.	DIAMETER	HEIGHT	SERVICE	BARRELS	LOCATION
4391	9'-4"	23'-9"		290	L.L. CELL
4392	9'-4"	23'-9"		290	L.L. CELL
4393	9'-4"	23'-0"	FB15/40	290	L.L. CELL
4394	9'-4"	23'-9"	HT/A 30	290	L.L. CELL
4395	9'-4"	23'-9"	FLUSH	290	L.L. CELL
4397	9'-4"	23'-9"	MP GEAR 85W/140	290	L.L. CELL
4398	9'-4"	23'-9"	SUPER SAE10W-30	290	L.L. CELL
4399	9'-4"	23'-9"	SUPER 10/30	290	L.L. CELL
4400	9'-4"	23'-9"	GUARDOL SAE 40	290	L.L. CELL
4401	9'-4"	23'-9"	SUP AIF	290	L.L. CELL
4402	9'-4"	23'-9"	AIF TYPE F	290	L.L. CELL
4403	9'-4"	23'-9"	SUPER 10/40	290	L.L. CELL
4404	9'-4"	23'-9"	GUARDOL 10/30	290	L.L. CELL
4405	9'-4"	23'-9"	LUBRIZOL 5178F	290	L.L. CELL
4406	9'-4"	23'-9"	ECA 4337	290	L.L. CELL
4407	9'-4"	23'-9"	ARCLOMOL R001U	290	L.L. CELL
4408	9'-4"	23'-9"	TLA 6716	290	L.L. CELL
4436			UNOLAMS8		
4437			UNOLAMS8		
4441	10'-9"	30'-0"	GASOLINE ADDITIVE	480	TF #2
F-103	12'-6"	32'-0"	EXXON 100	690	TF. F
F-104	10'-9"	32'-0"	EXXON 100	516	TF. F
F-10			EMPTY		TF. F
F-11			EMPTY		TF. F
F-12			TURBOCOOL		TF. F
F-13					
F-14			FLUSH		

DRAWING NO.	REFERENCE DRAWINGS

REV. NO.	DATE	REVISED	DRAWN BY	CKD. BY
A	02/12/98	UPDATED FOR SWPCP	DAB	SM

TOSCO
Tosco Corporation Company
5528 NW Doane St.
Portland, Oregon 97210

ALPHA ENGINEERS and CONSTRUCTORS, INC.
19 NW 5th AVE, SUITE 204, PORTLAND, OR. 97209 tel (503)227-3367 fax (503)227-3344

DRAWN BY	D.A.BYNUM
CKD BY	MK
APPD BY	K.P
SCALE	AS SHOWN
DATE	02/12/98

PORTLAND TERMINAL
PORTLAND, OREGON
FIGURE 4-2
SITE PLAN

DRAWING NO.	SHEET	REV.
0608-C-1000	1 OF 1	A

COP0015545

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Marine Diesel Oil

Product Code: Multiple

Synonyms: Diesel Fuel Marine
Marine Diesel - Dyed
Marine Fuel Oil
Marine Gas Oil
Residual Marine Fuel Oil
Residual Marine Gas Oil

Generic Name: Mid distillate

Chemical Family: Petroleum hydrocarbon

Responsible Party: Tosco Corporation
72 Cummings Point Road
Stamford, CT 06901

Help Desk 8am - 4pm Pacific Time, Mon-Fri: 1-800-762-0942

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800)424-9300
Others: (703)527-3887 (collect)

California Poison
Control System
Cont. US: (800)356-3129
Outside US: (415)821-5338

Health Hazards: Causes severe skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards: Flammable liquid and vapor. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

- Physical Form: Liquid
- Appearance: Dyed red to dark brown
- Odor: Characteristic petroleum

NFPA HAZARD CLASS: Health: 0 (Least)
Flammability: 2 (Moderate)

Reactivity: 0 (Least)

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% Volume	EXPOSURE GUIDELINE		
		Limits	Agency	Type
Diesel Fuel No. 2 CAS# 68476-34-6	98-100	100* mg/m3	ACGIH	TWA-SKIN
Naphthalene CAS# 91-20-3	<1	10 ppm	ACGIH	TWA
		15 ppm	ACGIH	STEL
		10 ppm	OSHA	TWA
		500 ppm	NIOSH 1990	IDLH

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

*Proposed ACGIH (1999)

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Severe skin irritant. Contact may cause redness, itching, burning, and severe skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not acutely toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): No information available. Studies by other exposure routes suggest a low degree of toxicity by inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract,

nausea, diarrhea and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, and fatigue).

Cancer: No information available on the cancer hazard of this material. However, a component is a possible cancer hazard (see Sections 11 and 14).

Target Organs: There is limited evidence from animal studies that overexposure may cause injury to the kidney (see Section 11).

Developmental: Inadequate data available for this material.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and kidney disorders.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Immediately remove contaminated shoes, clothing, and constrictive jewelry and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Note To Physicians: High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an

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innocuous appearing external wound. Often these injuries require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point: 140 - 158°F/60 - 70°C PMCC
OSHA Flammability Class: Combustible Liquid
LEL%: 0.3 / UEL%: 10.0
Autoignition Temperature: 446 - 500°F/230 - 260°C

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

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Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practice.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with

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an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn when skin contact is possible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Flash Point: 140 - 158°F / 60 - 70°C PMCC
Flammable/Explosive Limits (%): LEL: 0.3 / UEL: 10.0
Autoignition Temperature: 446 - 500°F / 230 - 260°C
Appearance: Dyed red to dark brown
Physical State: Liquid
Odor: Characteristic petroleum
pH: Not applicable
Vapor Pressure (mm Hg): 0.40

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Vapor Density (air=1): >3
Boiling Point/Range: 320-725°F / 160-385°C
Freezing/Melting Point: No Data
Solubility in Water: Negligible
Specific Gravity: 0.81-0.89 @15°C
Percent Volatile: Negligible
Evaporation Rate (nBuAc=1): <1
Viscosity: 32.6-40.0 SUS @100°F
Bulk Density: 7.08 lbs/gal

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of storage and handling. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Incompatible Materials: Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc.

Hazardous Decomposition Products: The use of hydrocarbon fuels in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. See Section 11 for additional information on hazards of engine exhaust.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Diesel Fuel No. 2 (CAS# 68476-34-6)

Carcinogenicity: Chronic dermal application of certain middle distillate streams contained in diesel fuel No. 2 resulted in an increased incidence of skin tumors in mice. This material has not been identified as a carcinogen by NTP, IARC, or OSHA. Diesel exhaust is a probable cancer hazard based on tests with laboratory animals.

Target Organ(s): Limited evidence of renal impairment has been noted from a few case reports involving excessive exposure to diesel fuel No. 2.

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Naphthalene (CAS# 91-20-3)

Carcinogenicity: Female mice exposed via inhalation to naphthalene developed alveolar adenomas. This effect was not seen in male mice. It has not been identified as a carcinogen by NTP, IARC or OSHA.

12. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

13. TRANSPORT INFORMATION

DOT Proper Shipping Name / Technical Name: Diesel Fuel
Hazard Class or Division: 3
ID #: NA1993
Packing Group: III

14. REGULATORY INFORMATION

This material contains the following chemicals subject to the reporting requirements of **SARA** 313 and 40 CFR 372:

COMPONENT	CAS NUMBER	WEIGHT %
-- None Known --		

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Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of **California Proposition 65** (CA Health & Safety Code Section 25249.5):

COMPONENT	EFFECT
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant

Diesel engine exhaust, while not a component of this material, is on the Proposition 65 list of chemicals known to the State of California to cause cancer.

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any. Diesel exhaust is a probable cancer hazard based on tests in laboratory animals. It has been identified as a carcinogen by IARC.

EPA (CERCLA) Reportable Quantity: --None--

15. DOCUMENTARY INFORMATION

Issue Date: 04/03/00
Previous Issue Date: 11/12/97
Product Code: Multiple
Previous Product Code: Multiple

16. DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product

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for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

COP0015556

www.ncalabs.com

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223
425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

Case Narrative

CLIENT: TOSCO
PROJECT: Tank 2669
PROJECT #:
NCA #: P1A0034

January 20, 2001

1.0 DESCRIPTION OF CASE

North Creek Analytical, Portland received 11 soil samples on 01/02/01 from TOSCO for analysis by NWTPH-Dx, as requested on the chain of custody. Notes from Scott Gilfillan further requested comparison of hydrocarbons in soils with MDO product and soil samples taken from Tank 2669 and delivered to NCA on 12/22/00 (NCA # P0L0709).

2.0 SAMPLE LIST

Refer to the *Chain of Custody* documents for a summary of sample information.

Each group of samples received is given an NCA# (SDG#), proceeded by a 'P' for Portland. This number consists of a one-digit code for the year, an alpha code for the month, and a sequential number for the group within the month. Each sample within the group is numbered sequentially by placing a dash after the NCA #. All samples were received, entered into the NCA LIMs system and stored according to NCA sample handling procedures.

3.0 COMMENTS ON ANALYSIS

3.1 Analysis

The samples were analyzed following the procedures outlined in the applicable methods. Refer to the NCA report for specific prep methods used. The samples were refrigerated at approximately 4°C and were extracted and analyzed within the EPA recommended holding times without incident.

Hydrocarbon Identification

Samples from "Hole A": P1A0034-01, 02, 03, 04, 05

At all depth intervals taken from Hole A, the chromatographic traces are consistent with product taken from the MDO tank # 2669, and soils previously analyzed in NCA P0L0709. Age of release could not be determined based on analysis performed. All soil samples are significantly depleated in heavy waxes present in the product. The time required for these waxes (normal-alkane hydrocarbons) to biodegrade is dependent on local conditions. The chemical makeup of the product is relatively unchanged by depth, the chromatographic trace for Hole A@10'5" compares well with Hole A@2'9".

Samples from "Hole B": P1A0034-06, 07, 08

Sample extracts from the surface to 3 feet contain hydrocarbons characteristic of highly weathered bunker fuel oil or a heavy residual oil. This hydrocarbon does not resemble MDO. If bunker oil was the original source oil for the hydrocarbons in Hole B, the time since release is estimated at 25+ years.

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541.383.9310 fax 541.382.7588

Case Narrative

CLIENT: TOSCO
PROJECT: Tank 2669
PROJECT #:
NCA #: P1A0034

January 20, 2001

Samples from "Hole C": P1A0034-09, 10, 11

The surface and 2'10" samples are similar to Hole B, bunker/residual oil. The sample at 6" produces a chromatogram of a highly weathered middle distillate fuel and a trace of residual fuel. The middle distillate fuel in Hole C@6" is greater than 25 years old. None of the Hole C samples resemble the MDO product found in Hole A.

Kent Patton, Technical Director
North Creek Analytical, Portland

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541.383.9310 fax 541.382.7588

TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	01/05/01 17:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Hole A @2'9"	P1A0034-01	Soil	01/02/01 12:40	01/02/01 16:20
Hole A @5'6"	P1A0034-02	Soil	01/02/01 12:51	01/02/01 16:20
Hole A @8'1"	P1A0034-03	Soil	01/02/01 13:06	01/02/01 16:20
Hole A @9'6"	P1A0034-04	Soil	01/02/01 13:18	01/02/01 16:20
Hole A @10'5"	P1A0034-05	Soil	01/02/01 13:30	01/02/01 16:20
Hole B @surface	P1A0034-06	Soil	01/02/01 13:34	01/02/01 16:20
Hole B @5"	P1A0034-07	Soil	01/02/01 13:36	01/02/01 16:20
Hole B @3'0"	P1A0034-08	Soil	01/02/01 13:51	01/02/01 16:20
Hole C @surface	P1A0034-09	Soil	01/02/01 13:54	01/02/01 16:20
Hole C @6"	P1A0034-10	Soil	01/02/01 13:59	01/02/01 16:20
Hole C @2'10"	P1A0034-11	Soil	01/02/01 14:17	01/02/01 16:20

North Creek Analytical - Portland

Crystal Burkholder, Project Manager

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541.383.9310 fax 541.382.7588

TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	01/05/01 17:14

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Hole A @2'9" (P1A0034-01) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**1330**	250	mg/kg dry	10	NWTPH-Dx	01/03/01	01/03/01	1010068	R-02
Heavy Oil Range Hydrocarbons	ND	500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*108 %*	*50-150*							*S-09*
Hole A @5'6" (P1A0034-02) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**10400**	250	mg/kg dry	10	NWTPH-Dx	01/03/01	01/04/01	1010068	R-02
Heavy Oil Range Hydrocarbons	**692**	500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-12*
Hole A @8'1" (P1A0034-03) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**2170**	250	mg/kg dry	10	NWTPH-Dx	01/03/01	01/04/01	1010068	R-02
Heavy Oil Range Hydrocarbons	ND	500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*113 %*	*50-150*							
Hole A @9'6" (P1A0034-04) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**39.2**	25.0	mg/kg dry	1	NWTPH-Dx	01/03/01	01/04/01	1010068	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*98.1 %*	*50-150*							
Hole A @10'5" (P1A0034-05) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**29.3**	25.0	mg/kg dry	1	NWTPH-Dx	01/03/01	01/04/01	1010068	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*88.6 %*	*50-150*							
Hole B @surface (P1A0034-06) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**6330**	1000	mg/kg dry	40	NWTPH-Dx	01/03/01	01/03/01	1010068	R-02
Heavy Oil Range Hydrocarbons	**9590**	2000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

North Creek Analytical - Portland

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	01/05/01 17:14

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Hole B @5" (P1A0034-07) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**5450**	1000	mg/kg dry	40	NWTPH-Dx	01/03/01	01/03/01	1010068	R-02
Heavy Oil Range Hydrocarbons	**6800**	2000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
Hole B @3'0" (P1A0034-08) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**548**	50.0	mg/kg dry	2	NWTPH-Dx	01/03/01	01/04/01	1010068	R-02
Heavy Oil Range Hydrocarbons	**617**	100	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*74.2 %*	*50-150*							
Hole C @surface (P1A0034-09) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**8890**	1250	mg/kg dry	50	NWTPH-Dx	01/03/01	01/03/01	1010068	R-02
Heavy Oil Range Hydrocarbons	**14300**	2500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
Hole C @6" (P1A0034-10) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**110**	50.0	mg/kg dry	2	NWTPH-Dx	01/03/01	01/04/01	1010068	R-02
Heavy Oil Range Hydrocarbons	ND	100	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*87.3 %*	*50-150*							
Hole C @2'10" (P1A0034-11) Soil					Sampled: 01/02/01 Received: 01/02/01				
Diesel Range Organics	**199**	50.0	mg/kg dry	2	NWTPH-Dx	01/03/01	01/04/01	1010068	R-02
Heavy Oil Range Hydrocarbons	**269**	100	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*77.6 %*	*50-150*							

North Creek Analytical - Portland

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	01/05/01 17:14

Miscellaneous Physical/Conventional Chemistry Parameters

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Hole A @2'9" (P1A0034-01) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**93.2**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	
Hole A @5'6" (P1A0034-02) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**92.3**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	
Hole A @8'1" (P1A0034-03) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**90.9**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	
Hole A @9'6" (P1A0034-04) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**77.7**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	
Hole A @10'5" (P1A0034-05) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**78.1**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	
Hole B @surface (P1A0034-06) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**97.2**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	
Hole B @5" (P1A0034-07) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**96.6**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	
Hole B @3'0" (P1A0034-08) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**96.6**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	
Hole C @surface (P1A0034-09) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**97.1**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	01/05/01 17:14

Miscellaneous Physical/Conventional Chemistry Parameters
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Hole C @6" (P1A0034-10) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**96.4**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	
Hole C @2'10" (P1A0034-11) Soil					Sampled: 01/02/01 Received: 01/02/01				
% Solids	**96.2**	1.00	% by Weight	1	NCA SOP	01/04/01	01/04/01	1010111	

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	01/05/01 17:14

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1010068 - EPA 3550 Fuels										
Blank (1010068-BLK1)				Prepared: 01/03/01 Analyzed: 01/04/01						
Diesel Range Organics	ND	25.0	mg/kg wet							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.51*		"	*4.80*		*94.0*	*50-150*			
LCS (1010068-BS1)				Prepared: 01/03/01 Analyzed: 01/04/01						
Diesel Range Organics	125	25.0	mg/kg wet	129		96.9	50-150			
Heavy Oil Range Hydrocarbons	65.1	50.0	"	79.0		82.4	50-150			
Surr: 1-Chlorooctadecane	*5.64*		"	*4.80*		*117*	*50-150*			
Duplicate (1010068-DUP1)		**Source: P1A0034-03**		Prepared: 01/03/01 Analyzed: 01/04/01						
Diesel Range Organics	2140	250	mg/kg dry		2170			1.39	50	R-02
Heavy Oil Range Hydrocarbons	ND	500	"		ND				50	R-02
Surr: 1-Chlorooctadecane	*NR*		"	*5.28*			*50-150*			*S-12*
Duplicate (1010068-DUP2)		**Source: P1A0034-07**		Prepared & Analyzed: 01/03/01						
Diesel Range Organics	4950	1000	mg/kg dry		5450			9.62	50	R-02
Heavy Oil Range Hydrocarbons	6390	2000	"		6800			6.22	50	R-02
Surr: 1-Chlorooctadecane	*NR*		"	*4.97*			*50-150*			*S-01*

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	01/05/01 17:14

Miscellaneous Physical/Conventional Chemistry Parameters - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1010111 - Dry Weight										
Duplicate (1010111-DUP1)		**Source: P0L0827-03**		Prepared: 01/04/01	Analyzed: 01/05/01					
% Solids	75.3	1.00	% by Weight		75.4			0.133	10	
Duplicate (1010111-DUP2)		**Source: P1A0005-03**		Prepared: 01/04/01	Analyzed: 01/05/01					
% Solids	73.4	1.00	% by Weight		75.6			2.95	10	
Duplicate (1010111-DUP3)		**Source: P1A0013-01**		Prepared: 01/04/01	Analyzed: 01/05/01					
% Solids	81.4	1.00	% by Weight		87.7			7.45	10	
Duplicate (1010111-DUP4)		**Source: P1A0041-02**		Prepared: 01/04/01	Analyzed: 01/05/01					
% Solids	90.5	1.00	% by Weight		90.5			0	10	

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	01/05/01 17:14

Notes and Definitions

R-02	The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-09	Surrogate recovery is outside control limits due to matrix interference.
S-12	Unable to calculate surrogate recovery due to high analyte concentration.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
wet	Sample results reported on a wet weight basis
RPD	Relative Percent Difference

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Crystal Burkholder, Project Manager

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CHAIN OF CUSTODY REPORT

Work Order #: P1A0084

CLIENT: Tosco Refining Co.
REPORT TO: Marty Cramer
ADDRESS: 5528 NW Doane St.
Portland OR 97210
PHONE: 503-248-1514 FAX: 248-1592

INVOICE TO: ← Same
P.O. NUMBER: 350608

PROJECT NAME: TK 2669
PROJECT NUMBER:
SAMPLED BY: Scott Gilfillan CCS

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 STD | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 10 STD | 5 | 4 | 3 | 2 | 1 | <1
OTHER — Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	TPH D Ext (see Remarks)	MATRIX (W, S, O)	# OF CONT	COMMENTS	NCA LAB ID
1. Hole A @ 2'9"	01/02/01 1240	X	Soil	1		
2. Hole A @ 5'6"	01/02/01 1251	X		1		
3. Hole A @ 8'1"	01/02/01 1306	X		1		
4. Hole A @ 9'6"	01/02/01 1318	X		1		
5. Hole A @ 10'5"	01/02/01 1330	X		1		
6. Hole B @ surface	01/02/01 1334	X		1		
7. Hole B @ 5"	01/02/01 1336	X		1		
8. Hole B @ 3'0"	01/02/01 1351	X		1		
9. Hole C @ surface	01/02/01 1354	X		1		
10. Hole C @ 6"	01/02/01 1359	X		1		
11. Hole C @ 2'10"	01/02/01 1417	X	Soil	1		
12.						
13.						
14.						
15.						

REQUESTED ANALYSES

24hr TAT per Marty Cramer 1/3/00

"Compare to POLD709-04 source oil"

RELINQUISHED BY: Scott Gilfillan DATE:
PRINT NAME: Scott Gilfillan FIRM: CCS TIME:

RECEIVED BY: DATE: 010201
PRINT NAME: Sarah Passage FIRM: NCA TIME: 1620

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: PLEASE COMPARE TO SOURCE OIL SAMPLE SUBMITTED 12/22 FOR TANK 2669 to see IF THEY ARE SAME

TEMP: 15.8

COC REV 3/99 PAGE OF

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29 December, 2000

Marty Cramer
TOSCO
5528 NW Doane St
Portland, OR 97210

RE: Tank 2669

Enclosed are the results of analyses for samples received by the laboratory on 12/22/00 08:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Crystal Burkholder
Project Manager

Work Orders included in this report:
P0L0709

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	12/29/00 12:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-0	P0L0709-01	Soil	12/21/00 14:50	12/22/00 08:45
TB-5	P0L0709-02	Soil	12/21/00 15:00	12/22/00 08:45
TB-12	P0L0709-03	Soil	12/21/00 15:10	12/22/00 08:45
MDO (source oil)	P0L0709-04	Other wet	12/21/00 15:45	12/22/00 08:45

Chromatograms produced by sample extracts were directly compared with MDO source oil sample. The chromatographic traces(patterns) for TB-0, TB-5 and TB-12 matched the MDO source oil. Chromatograms are included for your review.

All samples were extracted by NWTPH-Dx. Concentrations reported are based on standard diesel fuel and motor oil calibrations.

North Creek Analytical - Portland

Crystal Burkholder, Project Manager

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	12/29/00 12:30

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
TB-0 (P0L0709-01) Soil					Sampled: 12/21/00 Received: 12/22/00				
Diesel Range Organics	**54900**	2500	mg/kg dry	100	NWTPH-Dx	12/26/00	12/28/00	0120795	R-02
Heavy Oil Range Hydrocarbons	**5870**	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
TB-5 (P0L0709-02) Soil					Sampled: 12/21/00 Received: 12/22/00				
Diesel Range Organics	**45700**	2500	mg/kg dry	100	NWTPH-Dx	12/26/00	12/28/00	0120795	R-02
Heavy Oil Range Hydrocarbons	**8240**	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
TB-12 (P0L0709-03) Soil					Sampled: 12/21/00 Received: 12/22/00				
Diesel Range Organics	**36500**	2500	mg/kg dry	100	NWTPH-Dx	12/26/00	12/28/00	0120795	R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
MDO (source oil) (P0L0709-04) Other wet					Sampled: 12/21/00 Received: 12/22/00				
Diesel Range Organics	**370000**	20400	mg/kg wet	100	NWTPH-Dx	12/26/00	12/28/00	0120795	R-02
Heavy Oil Range Hydrocarbons	**55500**	40800	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	12/29/00 12:30

Miscellaneous Physical/Conventional Chemistry Parameters

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
TB-0 (P0L0709-01) Soil					Sampled: 12/21/00 Received: 12/22/00				
% Solids	**90.4**	1.00	% by Weight	1	NCA SOP	12/27/00	12/27/00	0120824	
TB-5 (P0L0709-02) Soil					Sampled: 12/21/00 Received: 12/22/00				
% Solids	**91.1**	1.00	% by Weight	1	NCA SOP	12/27/00	12/27/00	0120824	
TB-12 (P0L0709-03) Soil					Sampled: 12/21/00 Received: 12/22/00				
% Solids	**91.6**	1.00	% by Weight	1	NCA SOP	12/27/00	12/27/00	0120824	

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	12/29/00 12:30

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120795 - EPA 3550 Fuels										
Blank (0120795-BLK1)				Prepared: 12/26/00 Analyzed: 12/27/00						
Diesel Range Organics	ND	25.0	mg/kg wet							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.95*		"	*4.80*		*103*	*50-150*			
LCS (0120795-BS1)				Prepared: 12/26/00 Analyzed: 12/27/00						
Diesel Range Organics	125	25.0	mg/kg wet	129		96.9	50-150			
Heavy Oil Range Hydrocarbons	67.4	50.0	"	79.0		85.3	50-150			
Surr: 1-Chlorooctadecane	*6.14*		"	*4.80*		*128*	*50-150*			
Duplicate (0120795-DUP1)	**Source: P0L0637-01**			Prepared: 12/26/00 Analyzed: 12/28/00						
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	185	50.0	"		ND			117	50	Q-14
Surr: 1-Chlorooctadecane	*7.38*		"	*5.69*		*130*	*50-150*			
Duplicate (0120795-DUP2)	**Source: P0L0709-02**			Prepared: 12/26/00 Analyzed: 12/28/00						
Diesel Range Organics	44200	2500	mg/kg dry		45700			3.34	50	R-02
Heavy Oil Range Hydrocarbons	11000	5000	"		8240			28.7	50	R-02
Surr: 1-Chlorooctadecane	*NR*		"	*5.27*			*50-150*			*S-01*

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	12/29/00 12:30

Miscellaneous Physical/Conventional Chemistry Parameters - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0120824 - Dry Weight										
Duplicate (0120824-DUP1)		**Source: P0L0372-01**		Prepared & Analyzed: 12/27/00						
% Solids	74.1	1.00	% by Weight		74.2			0.135	10	
Duplicate (0120824-DUP2)		**Source: P0L0412-01**		Prepared & Analyzed: 12/27/00						
% Solids	84.0	1.00	% by Weight		81.4			3.14	10	
Duplicate (0120824-DUP3)		**Source: P0L0535-01**		Prepared & Analyzed: 12/27/00						
% Solids	90.0	1.00	% by Weight		88.2			2.02	10	
Duplicate (0120824-DUP4)		**Source: P0L0653-02**		Prepared & Analyzed: 12/27/00						
% Solids	59.7	1.00	% by Weight		60.3			1.00	10	

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Crystal Burkholder, Project Manager

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TOSCO	Project: Tank 2669	
5528 NW Doane St	Project Number: na	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	12/29/00 12:30

Notes and Definitions

Q-14	The Spike Recovery and/or RPD is outside of control limits due to a non-homogeneous sample matrix.
R-02	The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
wet	Sample results reported on a wet weight basis
RPD	Relative Percent Difference

North Creek Analytical - Portland

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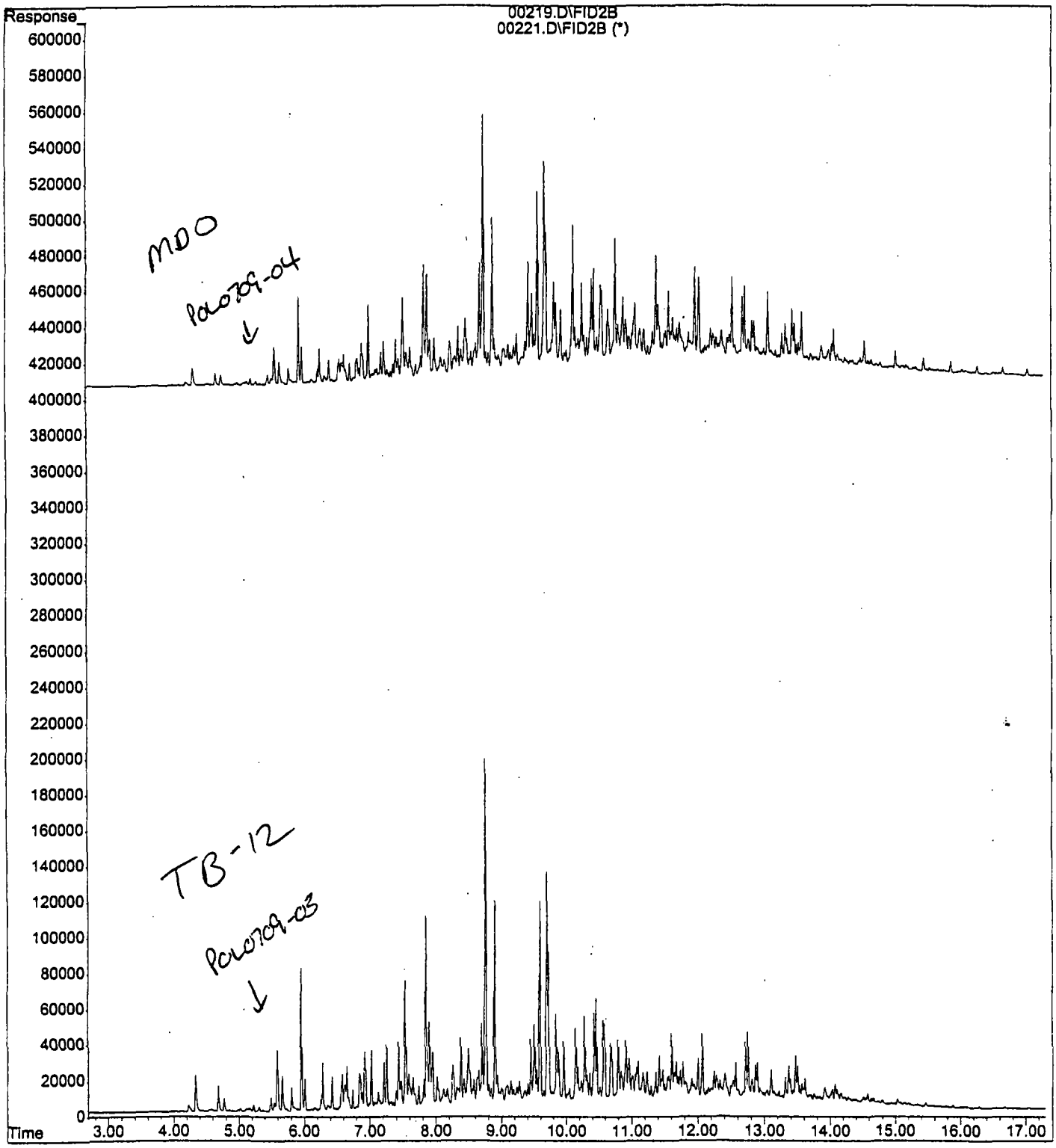
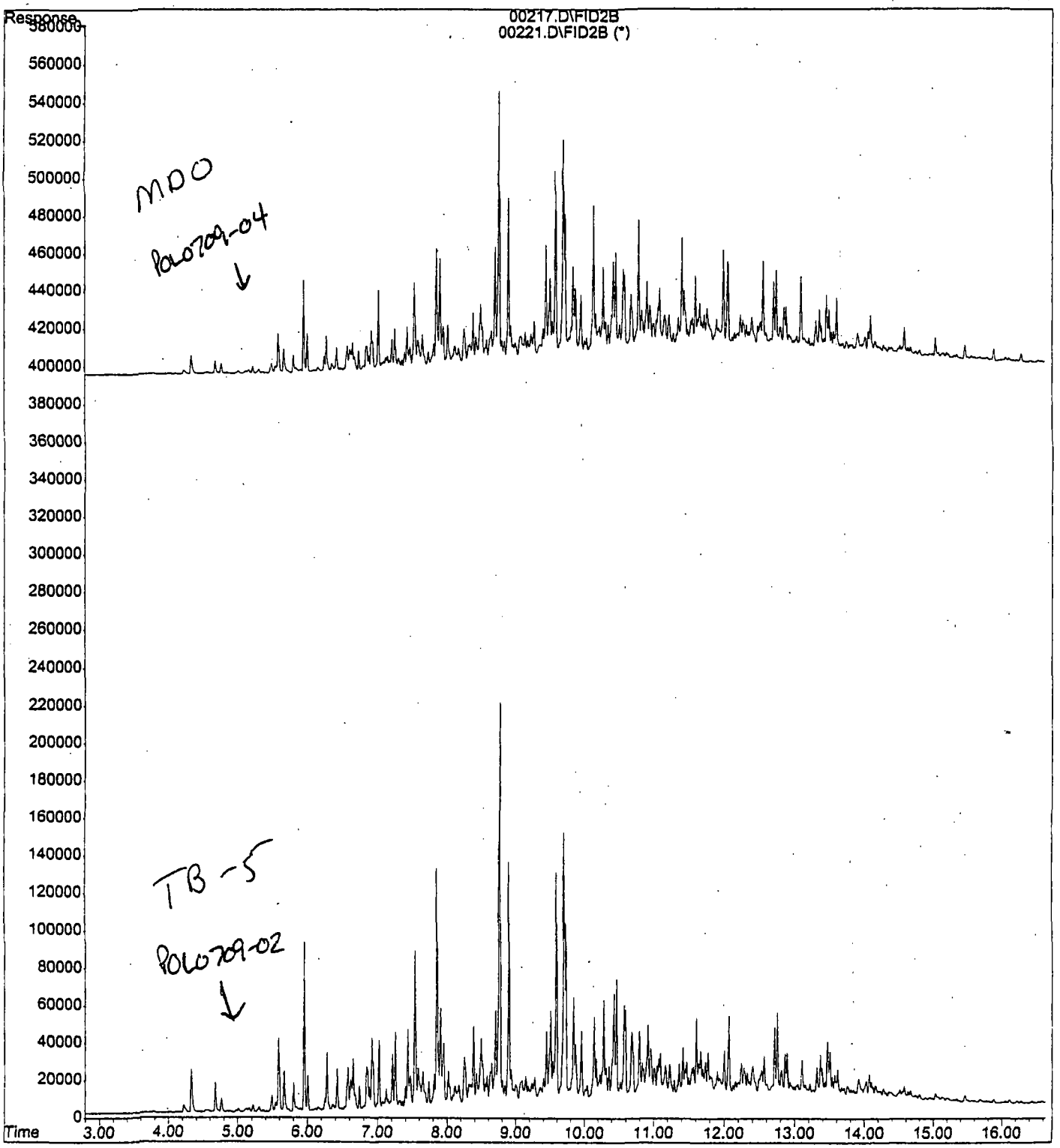
Crystal Burkholder, Project Manager

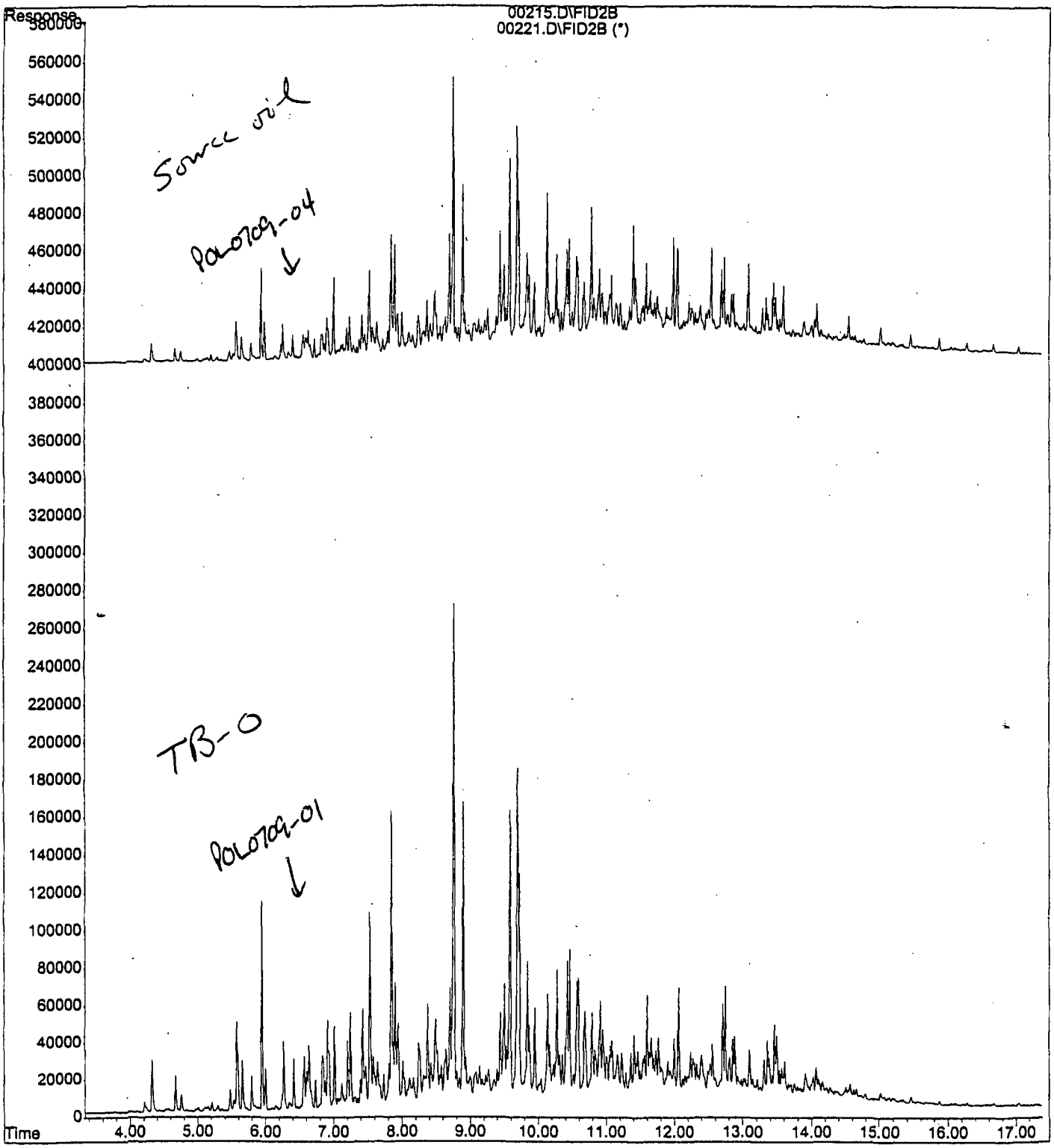
File : F:\2\DATA\001227.SEC\00219.D
Operator : KLP
Acquired : 28 Dec 2000 2:34 pm using AcqMethod NWF.M
Instrument : DualFID2
Sample Name: P0L0709-03
Misc Info : 100X
Vial Number: 63



File : F:\2\DATA\001227.SEC\00217.D
Operator : KLP
Acquired : 28 Dec 2000 1:56 pm using AcqMethod NWF.M
Instrument : DualFID2
Sample Name: P0L0709-02
Misc Info : 100X
Vial Number: 62



File : F:\2\DATA\001227.SEC\00215.D
Operator : KLP
Acquired : 28 Dec 2000 1:16 pm using AcqMethod NWF.M
Instrument : DualFID2
Sample Name: P0L0709-01
Misc Info : 100X
Vial Number: 61



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CHAIN OF CUSTODY REPORT

Work Order #: POLO 709

CLIENT: Tosco Refining Co.
REPORT TO: Marty Cramer
ADDRESS: 5528 NW Doane Ave
Portland, OR 97210
PHONE: (503) 248-1517 FAX: (503) 248-1592
PROJECT NAME: Tank 2669
PROJECT NUMBER:
SAMPLED BY: Tom Lyons

INVOICE TO: Same
P.O. NUMBER: 350608

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: STD. 5 | 4 | 3 | X | 1 | <1 STD.
OTHER Please Specify or ASAP
*Turnaround Requests less than standard may incur Rush Charges

REQUESTED ANALYSES

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	TPH D-EXT	HC											MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. TB-0	12/21/00 - 1450	X												S	1		
2. TB-5	12/21/00 - 1500	X												S	1		
3. TB-12	12/21/00 - 1510	X												S	1		
4. MDO (Source Oil)	12/21/00 - 1545	X												O	1		
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	
11.																	
12.																	
13.																	
14.																	
15.																	

RELINQUISHED BY: [signature]		DATE: 12/22/00	RECEIVED BY: [signature]		DATE: 12/22/00
PRINT NAME: Marty Cramer	FIRM: Tosco	TIME: 0846	PRINT NAME: Joy Chang	FIRM: NCA	TIME: 8:45 AM
RELINQUISHED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS: Please compare signature of HC in soil samples with source oil to see if they match and assess the relative degree of weathering to determine if HCs are fairly recent

TEMP:

COC REV 3/99

PAGE OF

COP0015578

Cramer, Marty:

From: Cramer, Marty:
Sent: Wednesday, January 24, 2001 12:42 PM
To: Sherman, John:; DeBellis, Vito:; Lyons, Thomas:; Gilfillan, Shawn:
Cc: Silva, Larry:; Caddell, Steve:
Subject: Leak Reporting for Tank 2669

AOC 0922
CORRESP.

John et. al.:

(The readers digest version is show in bold)

Per our recent discussion, **I phoned OERS (the Oregon spill reporting office) today at 1030hrs and reported a leak from Tank 2669**. I told them the leak was first discovered in late December during an routine internal cleaning and inspection of the tank but did not report it at that time because:

- The hole was extremely small (head of a pencil) and a high probability it was actually caused by the pressure washing and/or scraping of the rusted area with a knife that preceded discovery of the hole
- The samples originally collected on 12/21 in the upper foot of soil beneath the hole contained both diesel and heavy oil constituents suggesting the contamination may have been pre-existing and not from the hole
- Additional samples were then collected with a hand auger to assess the vertical extent of contamination and the collected soil samples submitted for analyses along with a request for a forensics evaluation to determine if the contamination source was the marine diesel oil contained in the tank
- The forensics evaluation was not received until yesterday at which time the concentrations were used to calculate spill volume which was completed this morning

Based on my calculations making several assumptions such as the contaminated area is cone shaped extending down from the hole, lateral spread vs. vertical penetration was on a 1:1 ratio, maximum penetration depth of 10 ft, and more, **I estimated a spill volume of 55 gallons** which is what was reported to OERS. I have attached a write-up of my calculations if anyone is interested. The person at OERS that I spoke to is Colleen and the **case number assigned to this incident is #2001-0181.**

Mike Greenburg of DEQ's spill response group called me shortly after and **I explained** the situation to him in detail and explained that the Tosco Terminal, along with the adjacent Chevron and GATX terminals, is **already under a consent order for cleanup and this incident should be referred to our project manager, Jill Kiernan in DEQ's site cleanup group for further action, if any**, which has been the case for spills that have occurred in the past. **He agreed** and said he would call Jill and discuss it with her but **will likely still send us their standard spill report form to fill out** so we should receive that in a few days.

If anyone has any questions, feel free to call.

2669LeakCalcs.doc

Marty

COP0015579

AOC 0922

CORRESP.

PTLD SPILL - AUTO SAMPLER LEAK 1/31/01

CUTTER STOCK

- NOTIFIED @ 10:35 OF SPILL AT DOCK
- " LARRY SILVA @ 10:42
- FITTING INSTALLED 1430 HRS - 1/30 @ FILLED SHORTLY THEREAFTER - NO PRESSURE TEST
- INSTALLED BELOW DOCK AS ON TOP OF DOCK WOULD NOT HAVE PRESSURE
- There is ~~IS~~ ANOTHER SAMPLE PORT ON ANOTHER PIPE IN SAME AREA
- BOOM IN WATER BY 10:50
- BLEW OUT LINE BY 11:40
- REMOVED VALVE @ 11:50
- COMPLETED INSTALLING SORBENT BOOM @ 12:05 HRS
- COAST GUARD NOT C

ACTION ITEMS

1) clean piling
2) MONITOR SHEEN - REPLACE HARD BOOM W/ ~~[illegible]~~ SORBENT
3) ADDRESS PLUG INTEGRITY → PRESSURE TEST
4) SAFETY - HARNESS & TIE OFF WHILE LOOKING
5) OTHER VALVE → REMOVE & INSPECT OTHER VALVE ~~AFTER~~ LINE BLOWN DOWN, PLUG & ~~[illegible]~~ SUSPEND PAN BENEATH
6) PRESSURE TEST BOTH LINES
7) SCRAPE ACCUMULATION OFF PILING W/ BOAT BENEATH TO CATCH SCRAPINGS

ENVIRONMENTAL MANAGEMENT, INC.

0422
REPORTS

April 2, 2001
Project B17-05E

Mr. Gerald O'Regan
Chevron Products Company
6001 Bollinger Canyon Road, Building L
San Ramon, California 94583-5004

Mr. Martin Cramer
Tosco Refining Company
5528 NW Doane Avenue
Portland, Oregon 97210

RE: Conceptual Design
Cutoff Wall at 60-inch Storm Sewer
Tosco Willbridge Terminal
Portland, Oregon

Dear Gentlemen:

KHM Environmental Management, Inc. (KHM) has prepared this document to present the conceptual design of the cutoff wall at the 60-inch storm sewer. The intent of this document is to solicit comments from Chevron Products Company (Chevron) and Tosco Refining Company (Tosco) prior to preparing the Draft Engineering Design Report for the final corrective action at this site. The Draft Engineering Design Report is required to obtain approval for the construction of this corrective action from the regulatory agencies. KHM is providing services to Tosco on a direct-contract basis and KHM is providing services to Chevron as a Network Associate with Delta Environmental Consultants, Inc.

SUMMARY OF FINAL CORRECTIVE ACTION

The remedy selected to prevent seepage of separate-phase hydrocarbons (SPH) into the Willamette River is the use of a cutoff wall barrier coupled with extraction of the SPH and groundwater upgradient of the barrier. The cutoff wall will be used to intercept SPH and groundwater along dominant groundwater flow paths adjacent to the 60-inch storm sewer. A plan depicting the cutoff wall barrier is shown on Figure 1.

SPH and groundwater will be removed immediately upgradient of the cutoff wall from existing Wells RW-1 and RW-2 and the proposed well on shown on Figure 1. In-well pneumatic pumps will be used to extract total fluids from each well. The remedial system will include SPH separation through a gravity-flow oil/water separator. A collection tank will store separated SPH, and groundwater will be conveyed to a batch tank. The

COP0015581

groundwater will be routed through filters and two activated carbon units in series prior to discharge to the sanitary sewer.

CUTOFF WALL

A plan and cross-section of the proposed cutoff wall is shown on Figures 2 and 3. The barrier will include the following design parameters:

- Length of approximately 170 linear feet. The cutoff wall will extend upgradient to tie into the top of the existing silt ridge. The presence of the silt ridge was determined through a previous soil boring investigation. The location of the cutoff wall was based upon the extent of SPH in the storm sewer trench and the existing ground surface. The trench was located near the outfall to limit the amount of fill material needed behind the cutoff wall. Through discussions with the City of Portland (City), it was agreed upon that the last three sections of the 60-inch storm sewer would be removed so that the hydrocarbon-affected soil beneath the sections could be removed and the cutoff wall installed. Additionally, the City indicated that only one of these sections will need to be replaced.

- Depths ranging from 15 to 20 below existing grade. Sheet pile lengths will range from 15 to 20 feet. Sheet piles will be installed at varying depths such that the sheet pile extends a minimum of 4 feet into the existing silt layer. The top of the sheet pile will extend to the to the ordinary high water line at elevation of approximately 16 feet (City of Portland Datum). A cross section depicting the cutoff wall along its length is shown on Figure 3.

- Method of construction. The barrier will include the installation of sheet piles along the line shown on Figure 2 and to depths shown on the cross section in Figure 3. Sheet piles will be vibrated into place using a trackhoe with hammer attachment. As an option, joints may be sealed with the installation of a cementitious sealant between sheet piles. The installed barrier with joint sealants have a maximum transmissivity of 2.7×10^{-6} centimeters per second.

We will proceed in preparing the Draft Engineering Design Report following your review of this conceptual design.

COP0015582

KHM appreciates the opportunity to be of assistance to Chevron and Tosco on this project. If you need further information or have any questions, please call (503) 233-4068.

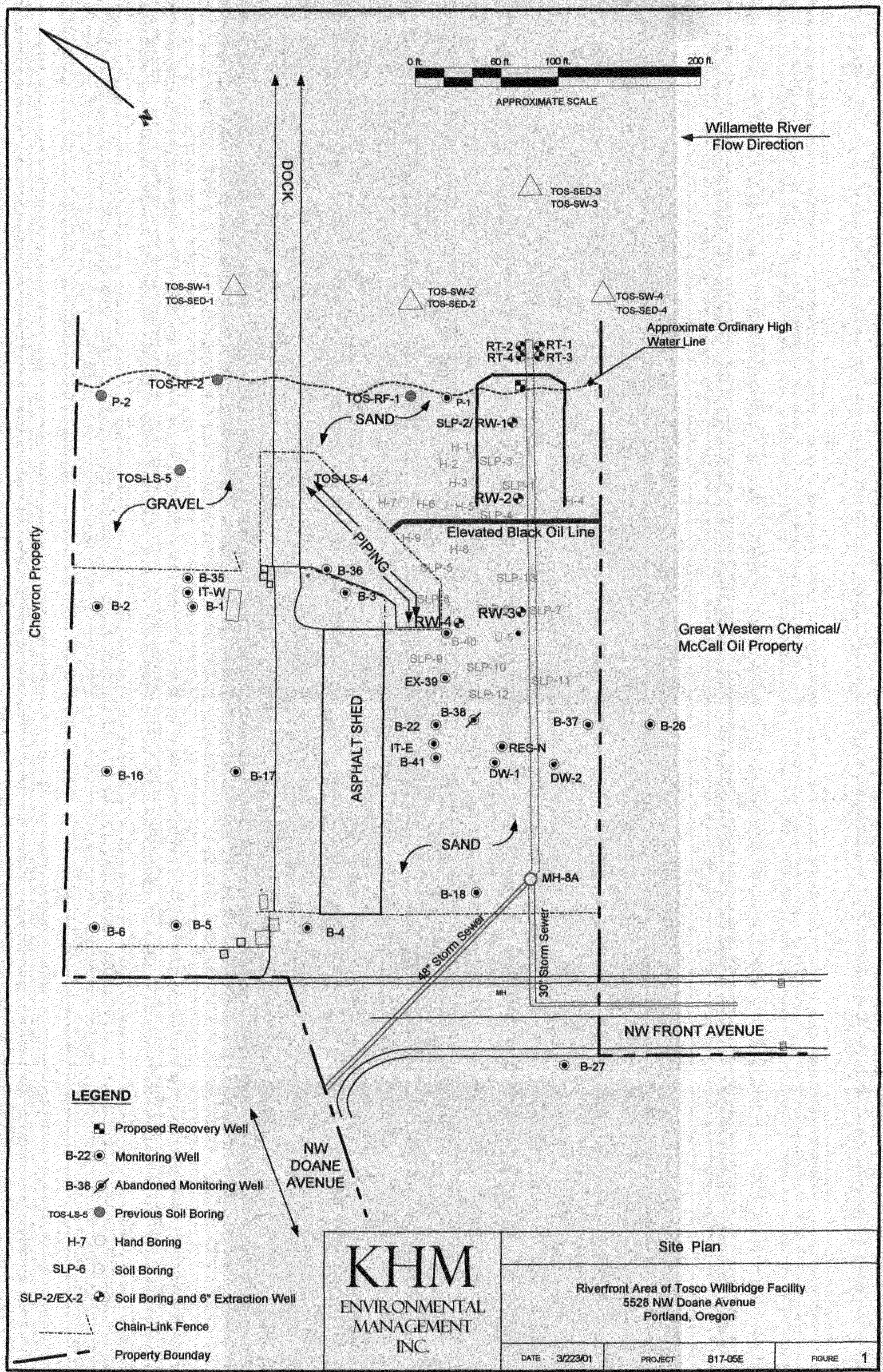
Sincerely,
KHM Environmental Management, Inc.

Kelly A. Kline, RG
Senior Geologist

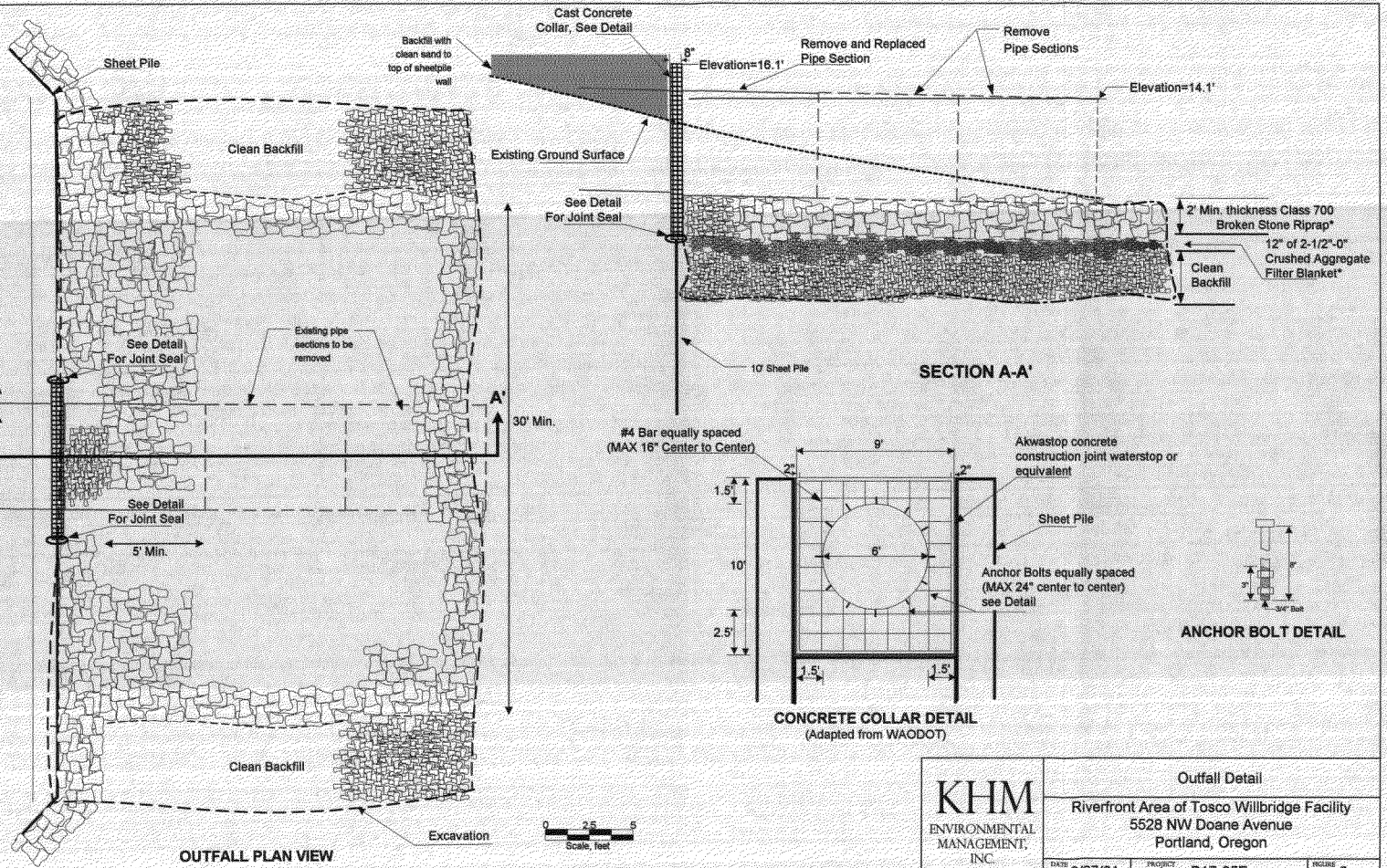
Ward Crell, RG
Principal Geologist

Attachments
Figure 1 – Site Plan
Figure 2 – Plan View of Cutoff Wall
Figure 3 – Cross Section of Cutoff Wall

COP0015583


N
0 ft.
60 ft.
100 ft.
200 ft.
APPROXIMATE SCALE
Willamette River
Flow Direction
DOCK
TOS-SED-3
TOS-SW-3
TOS-SW-1
TOS-SED-1
TOS-SW-2
TOS-SED-2
TOS-SW-4
TOS-SED-4
Approximate Ordinary High
Water Line
RT-2
RT-1
RT-4
RT-3
TOS-RF-2
P-2
TOS-RF-1
P-1
SAND
SLP-2/ RW-1
H-1
H-2
SLP-3
H-3
SLP-1
RW-2
H-7
H-6
H-5
SLP-4
H-4
TOS-LS-5
TOS-LS-4
GRAVEL
Elevated Black Oil Line
H-9
H-8
PIPING
SLP-5
SLP-13
B-36
B-35
IT-W
B-3
B-2
B-1
SLP-8
SLP-6
SLP-7
RW-3
RW-4
B-40
U-5
Chevron Property
Great Western Chemical/
McCall Oil Property
SLP-9
SLP-10
SLP-11
EX-39
SLP-12
B-38
B-37
B-26
B-22
IT-E
RES-N
B-41
DW-1
DW-2
B-16
B-17
ASPHALT SHED
SAND
MH-8A
B-18
B-6
B-5
B-4
48" Storm Sewer
30" Storm Sewer
MH
NW FRONT AVENUE
B-27
NW
DOANE
AVENUE
LEGEND
Proposed Recovery Well
B-22 Monitoring Well
B-38 Abandoned Monitoring Well
TOS-LS-5 Previous Soil Boring
H-7 Hand Boring
SLP-6 Soil Boring
SLP-2/EX-2 Soil Boring and 6" Extraction Well
Chain-Link Fence
Property Bounday
KHM
ENVIRONMENTAL
MANAGEMENT
INC.
Site Plan
Riverfront Area of Tosco Willbridge Facility
5528 NW Doane Avenue
Portland, Oregon
DATE 3/223/01
PROJECT B17-05E
FIGURE 1

COP0015584



*Referred to riprap and filter design from City of Portland Storm Sewer System Design, September 4, 1990

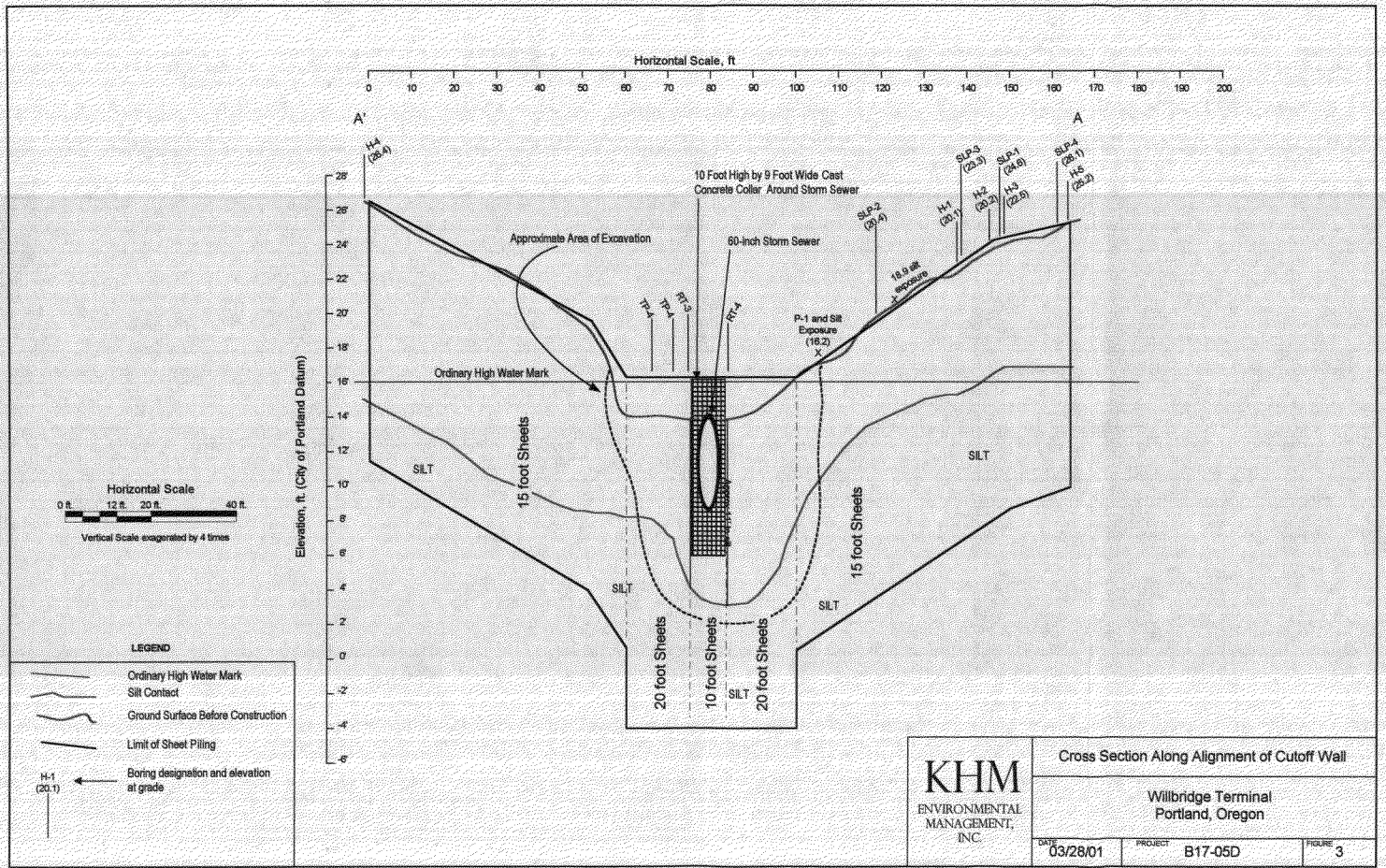
KHM
ENVIRONMENTAL
MANAGEMENT,
INC.

Outfall Detail

Riverfront Area of Tosco Willbridge Facility
5528 NW Doane Avenue
Portland, Oregon

DATE	PROJECT	FIGURE
3/27/01	B17-05E	2

COP0015585



KHM
ENVIRONMENTAL MANAGEMENT, INC.

Cross Section Along Alignment of Cutoff Wall

Willbridge Terminal
Portland, Oregon

DATE	PROJECT	FIGURE
03/28/01	B17-05D	3

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AOC 0922
CORRESPONDENCE

TOSCO

April 3, 2001

TO: S. M. CADDELL

FROM: J. W. SHERMAN

Attached for your review is the report on the June 15, 2000 kerosene release in Tank Farm 2 at the Portland Terminal. This investigation and report was conducted at the direction of counsel and remains under attorney-client privilege. The original documents will remain at the Portland Terminal pending further direction.

CC: Roy Clark

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Portland Terminal
Kerosene Release
June 15, 2000

INTRODUCTION

On Thursday, June 15, 2000, the Portland Terminal experienced a kerosene release. Following the release an investigation team comprised of John Sherman, Portland Terminal Superintendent, Doug Kleopfer, Phoenix Terminal Superintendent, Shawn Gilfillan, Senior Health and Safety Specialist and John Dang, Tosco Engineering was convened to conduct an investigation. The group met at the Portland Terminal on June 22. Terminal personnel, contractors and vendors were interviewed regarding the events leading up to and after the incident and recommendations addressing key issues was developed.

INCIDENT SUMMARY

On June 15, 2000 at 1305 hours a ¾" gate valve used as a sample port in the kerosene system in tank farm #2 was found open by Terminal Superintendent John Sherman and Tacoma Maintenance Technician Tom Lyons while on a tour of the facility. (Refer to Facility Plot Plan A). A kerosene pump, pump number G-163, was running and product was being discharged at a rate of approximately 120 gpm (refer to pump curve for G-163 in appendix). The pump was shutdown and the valve closed by 1307 hours. At this time the discharge was stopped. At 1310 hours Steve Nelson, the Tosco head operator on duty, and Walt Eisenman, terminal maintenance technician responded to the release. They were followed by Vito DeBellis, Supervisor of Operations, Shawn Gilfillan, Senior Health and Safety Specialist and Wagar Carey, 76 Lubricants maintenance technician over the next 10 minutes.

No injuries occurred during the release. All product was contained on the facility in tank farm #2 and did not involve any exposure to the Willamette River. Notification was made to the appropriate agencies beginning at 1330 hours. The terminal spill response contractor, Cowlitz Clean Sweep, was called a t 1320 hours and responded at 1345 hours. Recovery of free product began at 1400 hours. Removal of contaminated soil began a t 1555 hours and continued until the integrity of pipe footings and tank support required engineering oversight.

DAMAGE/EXTENT OF RELEASE

A total of 6,538 gallons of kerosene was released through the sample valve. 2,688 gallons were recovered. 3,850 gallons remain unaccounted for. No free product was found when retrieving soil samples for analysis. When the release was discovered, significant spray was being deflected out of the pump pad due to the design of the pump piping and placement of the sample port. The concrete spill containment and drainage for the pump pad had filled and product was flowing out of the containment area to the ground. The spill containment for the pump pad flows to lift station 7, (a sump pump) which transfers process water to a process oil water separator in another area of the facility. When the lift station was checked, the pump was not running and product was found flowing out of the lift station onto the ground and under an adjacent pipeway. When this condition was noted, the lift station pump was turned on in the manual mode and began to transfer the product to the process oil water separator system. The product was recovered from the oil water system and placed in transmix storage.

The release occurred in two areas: at the kerosene pump G-163 between tanks 2982 and 2983 and at lift station 7 adjacent to tank 3408. The release at the pump pad covered 1250 square feet. The lift station release covered 1500 square feet. It is estimated that product flowed for a maximum of 13 hours before discovery. The head terminal operator on duty at midnight on June 14/15, Robin Gross, was in tank farm 2 at midnight to read the tank gauges. He walked within 10' of the discharge point to read the gauge on tanks 2982 and 2983. He was in the tank farm again at 0400 on June 15 for a security round. The security round has a clock station at tank 2916 (see Facility Plot Plan B) and adjacent to Lift Station 7.

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INVESTIGATION SUMMARY AND ACTIONS

The investigation focused on several areas:

1. Identification of employees and contractors on site
2. Internal and external access to the tank farm
3. Possible employee involvement (intentional and non-intentional)
4. Examination of the kerosene pump and valve for applicability to service
5. Failure analysis of the valve
6. Examination of the water system for applicability to service
7. Conclusion
8. Recommendations to prevent reoccurrence

7. IDENTIFICATION OF EMPLOYEES AND CONTRACTORS ON SITE.

The following employees and contractors were on site at the time of the release:

Tosco employees:

John Sherman	Vito DeBellis	Shawn Gilfillan	Walt Eisenman
Steve Nelson	Andrew Janke	Ralph Sandercock	Wagar Carey
Tom Lyons	Marty Cramer	Jane Keafer	Laurie Kays
Gary LeFebvre	David Hauck	Jim Kost	Raymond Franco
Dale Hoffman	Richard Horrocks	David Taylor	Robert Twitty
Velda Altig			

Contractors:

Jim Neely, Northwest Metal Fab	Tim Vanluanen, Northwest Metal Fab
Howard Wilson, Electrical Construction Company	Nik Vitguen, Gelco
Jason Easter, Gelco	Bryan Shas, Gelco
Nate Hemphill, KHM Environmental	

Summer temporary hires:

Kathleen Sherman	Ailana Allen	Gary Upton

7. INTERNAL AND EXTERNAL ACCESS TO TANK FARM #2

Refer to Facility Plot Plan "B". Access to Tank Farm #2 is the same for contractors or company personnel. There are three entrances to the tank farm:

- The primary vehicle and foot traffic entrance is via a driveway located on the main exit alleyway from the terminal. (Access Point A)
- A gated staircase provides access from the ethanol pumpoff area. This gate is typically unlocked during normal working hours. (Access Point B)
- There is a 20' gate entrance on Doane Avenue which provides tank farm access near tank 4259. This gate is used for tank farm maintenance. Maintenance had been done in the tank farm earlier in the day and the gate was partially open at the time of the release. This access point is approximately 250 feet from the release point. (Access Point C)
- A concrete wall which averages 10' in height surrounds the tank farm. Access to the tank farm over this wall is unlikely.

7. POSSIBLE EMPLOYEE INVOLVEMENT: INTENTIONAL/NON-INTENTIONAL

Employee involvement has been divided into two areas: sabotage with the intent to cause damage and unintentional employee actions that resulted in the release.

There is no conclusive evidence that indicates the release was the result of deliberate employee actions. Several employees had been disciplined in the several months prior to the release. However, their actions in the days before and hours following the release were neither abnormal nor suspicious.

There is also no evidence that the release was due to carelessness by an employee or contractor. Transfer and receipt logs for the prior 13 hours did not show any kerosene receipts or transfers that would have required a product sample and the use of the valve responsible for the release. A review of employee job responsibilities during the preceding 24 hours and interviews with the employees and contractors didn't reveal any situations that would have required the use of the valve. When employees were specifically asked if they used the valve, no employee indicated that they had.

7. EXAMINATION OF THE KEROSENE PUMP AND VALVE FOR APPLICABILITY TO SERVICE

Alpha Engineers and Constructors, Inc. of Portland, Oregon examined the pump and valve involved in the release for applicability of service. The equipment is typical of that found in the petroleum industry and consistent with industry standards.

5. FAILURE ANALYSIS OF THE VALVE

Alpha Engineers and Constructors, Inc. of Portland, Oregon examined the valve involved in the release for possible failure during service. Their investigation is attached in appendix X. The main findings in the report were as follows:

- A detailed visual inspection of the kerosene system components in the area of the pump found no indication of recent movement or shifting which could have contributed to the failure.
- The valve involved in the release was manufactured by Henry Vogt Machining Company to Military Standard 167B – Mechanical Vibrations of Shipboard Equipment (see Appendix XXX). A copy of the vibration test on this style valve conducted by Aero Nav Laboratories, College Point NY, and a cut sheet of the valve have been included in the appendix. According to the Military Standard, equipment meeting this standard has a "reasonably high degree of confidence that (it) will not malfunction during service operation."
- The Henry Vogt Machining Company received the Military Standard Certification due to the design of the thread and the valves high resistance to vibrating open.
- The pump and valve were operated under controlled test conditions designed to duplicate terminal operating conditions. They were unable to cause the valve to vibrate open.
- Based on the design of the valve, the integrity of the kerosene system and the field tests with the valve, AECI concluded that the valve does not have a tendency to vibrate open from a closed position, open more fully from a partially open position nor to close from an open position and was unlikely to have contributed to the release.

7. EXAMINATION OF THE WATER SYSTEM FOR APPLICABILITY OF SERVICE

The release at lift station 7 was due to the failure of a sump pump to automatically start when the lift station filled with product. Under normal conditions, as the lift station fills with water the sump pump will automatically activate and transfers water to a process oil water separator to start. The sump pump in the lift station is controlled by a hand/off/auto (HOA) control switch which is normally in the auto position. When the lift station was examined following the release, the HOA switch was in the automatic position. A signal is received in the terminal control room when this switch is in the hand (or manual) position. The control room had not received this signal. When the

HOA switch was placed in the hand position, the sump pump activated and drew down the contents of the lift station.

An investigation into the design of the sump pump indicate that the automatic sensing mechanism that activates the sump pump at this lift station will work only with water. If the sensor is immersed in gasoline or a distillate, it will not activate the pump. During this release, the lift station filled with kerosene and the sump pump failed to start.

It could not be determined if a hazard analysis was done prior to the installation of this equipment.

7. CONCLUSION

The investigation was unable to determine how or when the valve was opened which led to the release. However, none of the circumstances or conditions surrounding the release indicate that the possibility of foul play is real or that the valve failed due to age or wear.

- Failure analysis of the valve and kerosene system indicate the system was in good mechanical condition and this was an unlikely cause.
- Access to the tank farm is restricted due to fencing and high tank farm walls. Significant terminal and construction activity was taking place that day. The location of the release is well back in the tank farm and would require an individual with tank farm knowledge to be able to cause this type of incident. Because of the location of the valve and the restricted access to the tank farm, it is unlikely an intruder caused the incident.
- Interviews were conducted with employees following the release and the behavior of each employee before and after the release was examined. While several employees had been disciplined in the months prior to the release, there was no indication or evidence that any employee was involved in the intentional release of product.
- No evidence could be found that associated an employee or contractor with the valve for the purpose of collecting a product sample or obtaining a small amount of product for terminal use.

8. RECOMMENDATIONS

During the course of the investigation, a number of deficiencies were found.

1	Sample ports are not consistently chained and locked closed.	Chain and lock closed all sample ports on all lines and tanks in the terminal.
2	Sample ports are not consistently capped, blinded or plugged when not in use.	Implement a program which requires all sample ports to be capped, blinded or plugged when not in use.
3	Evidence of a hazard analysis performed on the lift station sensors/system could not be found.	Implement a program which assures availability of all hazard analyses for future review and reference.
4	Perimeter security at the terminal should be enhanced	Continue to consider/implement recommendations in the terminal security review and assessment by Forbes & Associates, Inc dated 6/24/99.
5	The sensor in Lift station 7 does not operate when immersed in petroleum products.	Review the terminal storm water and process water systems for effectiveness and applicability for service.

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APPENDIX

A. FACILITY PLOT PLAN "A"
B. FACILITY PLOT PLAN "B"
C. PIN REPORT
D. OIL SPILL NOTIFICATIONS
E. COP 31 – TERMINAL ROUNDS
F. ALPHA ENGINEERS AND CONSTRUCTORS, INC REPORT: ¾" VALVE FLOW CALCULATIONS
G. ALPHA ENGINEERS AND CONSTRUCTORS, INC REPORT ON VALVE INSPECTION
H. AERO NAV LABORATORIES, INC VIBRATION TEST ON 2' GATE VALVE
I. MILITARY STANDARD 167B, MECHANICAL VIBRATIONS OF SHIPBOARD EQUIPMENT
J. HENERY VOGT MACHINE CO. VALVE CUT SHEET
K. TERMINAL ALARM LOG
L. OPERATOR LOGS
M. TERMINAL THRUPUT REPORTS AND GAUGE SHEETS
N. TERMINAL VISITOR LOG AND SIGN IN SHEETS
O. INSTRUCTION MANUAL AND SPEC SHEET FOR POINT LEVEL SWITCH USE D IN LIFT STATION 7
P. REPORTS FILED WITH THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
Q. INTERVIEWS AND STATEMENTS.

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PA-01	P006346-01	Soil	06/15/00 20:24	06/16/00 15:28
PA-02	P006346-02	Soil	06/15/00 20:27	06/16/00 15:28
PA-03	P006346-03	Soil	06/15/00 20:30	06/16/00 15:28
PA-04	P006346-04	Soil	06/15/00 20:32	06/16/00 15:28
PA-05	P006346-05	Soil	06/15/00 20:34	06/16/00 15:28
PA-06	P006346-06	Soil	06/15/00 20:38	06/16/00 15:28
PA-07	P006346-07	Soil	06/15/00 21:10	06/16/00 15:28
SA-01	P006346-08	Soil	06/15/00 20:47	06/16/00 15:28
SA-02	P006346-09	Soil	06/15/00 20:52	06/16/00 15:28
SA-03	P006346-10	Soil	06/15/00 20:53	06/16/00 15:28
SA-04	P006346-11	Soil	06/15/00 20:57	06/16/00 15:28
SA-05	P006346-12	Soil	06/15/00 21:05	06/16/00 15:28
Source Oil	P006346-13	Other wet	06/16/00 10:30	06/16/00 15:28

KERO RELEASE 6/15/00

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PA-01 (P006346-01) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**169000**	5000	mg/kg dry	200	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	10000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
PA-02 (P006346-02) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**34100**	1250	mg/kg dry	50	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	2500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
PA-03 (P006346-03) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**28200**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
PA-04 (P006346-04) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**16500**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/20/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
PA-05 (P006346-05) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**24400**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
PA-06 (P006346-06) Soil					Sampled: 06/15/00 Received: 06/16/00				
Diesel Range Organics	**24600**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PA-07 (P006346-07) Soil					Sampled: 06/15/00	Received: 06/16/00			
Diesel Range Organics	**20300**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
SA-01 (P006346-08) Soil					Sampled: 06/15/00	Received: 06/16/00			
Diesel Range Organics	**65600**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
SA-02 (P006346-09) Soil					Sampled: 06/15/00	Received: 06/16/00			
Diesel Range Organics	**27700**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
SA-03 (P006346-10) Soil					Sampled: 06/15/00	Received: 06/16/00			
Diesel Range Organics	**112000**	2500	mg/kg dry	100	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	5000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
SA-04 (P006346-11) Soil					Sampled: 06/15/00	Received: 06/16/00			
Diesel Range Organics	**3840**	250	mg/kg dry	10	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*121 %*	*50-150*							
SA-05 (P006346-12) Soil					Sampled: 06/15/00	Received: 06/16/00			
Diesel Range Organics	**58.9**	25.0	mg/kg dry	1	NWTPH-Dx	06/16/00	06/19/00	0060490	A-01
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*107 %*	*50-150*							

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Source Oil (P006346-13) Other wet						Sampled: 06/16/00	Received: 06/16/00		
Diesel Range Organics	**932000**	100000	mg/kg wet	1000	NWTPH-Dx	06/16/00	06/19/00	0060490	R-02
Heavy Oil Range Hydrocarbons	ND	200000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Miscellaneous Physical/Conventional Chemistry Parameters
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PA-01 (P006346-01) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**81.5**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-02 (P006346-02) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**82.8**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-03 (P006346-03) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**88.3**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-04 (P006346-04) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**88.5**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-05 (P006346-05) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**87.6**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-06 (P006346-06) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**89.0**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
PA-07 (P006346-07) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**90.5**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
SA-01 (P006346-08) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**88.8**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
SA-02 (P006346-09) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**91.2**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	

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TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Miscellaneous Physical/Conventional Chemistry Parameters
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SA-03 (P006346-10) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**80.0**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
SA-04 (P006346-11) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**81.9**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	
SA-05 (P006346-12) Soil					Sampled: 06/15/00 Received: 06/16/00				
% Solids	**88.3**		% by Weight	1	NCA SOP	06/16/00	06/19/00	0060471	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

www.ncalabs.com

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223
425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0060490 - TPH-D Extraction										
Blank (0060490-BLK1)				Prepared: 06/16/00 Analyzed: 06/19/00						
Diesel Range Organics	ND	25.0	mg/kg wet							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.82*		"	*5.00*		*96.4*	*50-150*			
LCS (0060490-BS1)				Prepared: 06/16/00 Analyzed: 06/19/00						
Diesel Range Organics	115	25.0	mg/kg wet	127		90.6	50-150			
Heavy Oil Range Hydrocarbons	62.0	50.0	"	75.9		81.7	50-150			
Surr: 1-Chlorooctadecane	*4.95*		"	*5.00*		*99.0*	*50-150*			
Duplicate (0060490-DUP1)	**Source: P006346-01**			Prepared: 06/16/00 Analyzed: 06/19/00						
Diesel Range Organics	166000	5000	mg/kg dry		169000			1.79	50	R-02
Heavy Oil Range Hydrocarbons	ND	10000	"		ND				50	R-02
Surr: 1-Chlorooctadecane	*NR*		"	*6.13*			*50-150*			*S-01*
Duplicate (0060490-DUP2)	**Source: P006346-12**			Prepared: 06/16/00 Analyzed: 06/19/00						
Diesel Range Organics	68.8	25.0	mg/kg dry		58.9			15.5	50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*5.09*		"	*5.66*		*89.9*	*50-150*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

www.ncalabs.com

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223
425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

TOSCO	Project: G163 Release	
5528 NW Doane St	Project Number: Portland	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/20/00 14:52

Notes and Definitions

A-01	Quantified against kerosene standard.
R-02	The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
wet	Sample results reported on a wet weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

NCA

KOOI6244

Oregon Analytical Laboratory

14855 SW Scholls Ferry Rd
Beaverton OR 97007
(503) 590-5300
FAX (503) 590-1404
1-800-644-0967

Chain of Custody Record
Laboratory Analysis Request

10.2 °C

COPY

Sampling: ☒ Grab ☐ Comp
OAL Hours _____
ISCO _____
www.oalab.com

Page 1 of 2
Site Visit ☐

Client Information
Company TOSCO
Contact MARTY CRAMER
Address 5525 NW DOANE AVE
PORTLAND, OR 97210
Phone # 245-1517 Fax # 245-1592

Billing Information
Company SAME
Contact _____
Address _____
Phone # _____ Fax # _____

Project Information G163 RELEASE
Project Name [redacted]
Project # PORTLAND
P.O. # _____
Comments _____

Sampler's Name MARTY CRAMER
Signature _____

Quote # _____
NOTE: If quote number is not referenced, standard pricing will be applied.
Provide Fax Results ☐ Yes ☐ No

Remarks
NEED TO DISTINGUISH BETWEEN FRESH KEROSENE & OTHER PETROLEUM CONTAMINATION

	Sample Identification	Date	Time	FOR LAB USE ONLY OAL Login #	# of Containers	Matrix: Soil	Matrix: Water	Matrix: Other (Note in Remarks)	Analyses: Volatiles 8240 / 8260 / 8010 / 8020	Semivolatiles 625 / 8270 PAH(SIM)8270 PAH8310	Organochlor Pest 608 / 8081 PCB 608 / 8082	NW TPH-HCID Quantify? ☐ Yes ☐ No	NW TPH Quantification G X DX/OIL	BTEX 602 / 8021 ☐ MTBE ☐ Naphthalene	Metals ☐ Total ☐ TCLP ☐ Dissolved As Ba Cd Cr Pb Hg Se Ag Other	Remarks
1	PA-01	6/15	2034		1	X							X			
2	PA-02		2037		1	X							X			
3	PA-03		2030		1	X							X			
4	PA-04		2032		1	X							X			
5	PA-05		2034		1	X							X			
6	PA-06		2038		1	X							X			
7	PA-07		2110		1	X							X			
8	SA-01		2047		1	X							X			
9	SA-02	V	2052		1	X							X			

Turnaround
[N] Normal – 10 working days
[S] Special – 5 working days
[R] Rush – 24-72 hrs
[O] Other – _____

Relinquished
Signature [signature] Date 6/16/00
Print Name MARTY CRAMER Time 2:32
Company TOSCO

Received
Signature [signature] Date 6/16/00
Print Name KENT D POLLOM Time 2:32
Company NCA

Relinquished
Signature [signature] Date 6/16/00
Print Name [illegible] Time 3:28
Company NCA

Received
Signature [signature] Date 6/16/00
Print Name Bob Fahsholz Time 15:28
Company

Relinquished
Signature _____ Date _____
Print Name _____ Time _____
Company _____

Received
Signature _____ Date _____
Print Name _____ Time _____
Company _____

☐ Courier ☐ UPS ☐ FedEx ☐ Other
Received @ _____ °C
Appropriate Containers ☐ Yes ☐ No
_____ 4oz./8oz. Jars
_____ VOA Vials
_____ Plastic Bottles
_____ Glass Bottles
_____ Other _____

PGE 71982 (Oct 99)

COP0015601

MCA

P006346

OAL Oregon Analytical Laboratory

14855 SW Scholls Ferry Rd
Beaverton OR 97007
(503) 590-5300
FAX (503) 590-1404
1-800-644-0967

COPY

Chain of Custody Record
Laboratory Analysis Request

10.2 °C

Sampling: ☑ Grab ☐ Comp
OAL Hours _____
ISCO _____
www.oalab.com

Page 2 of 2
Site Visit ☐

Client Information
Company TOSCO
Contact MARTY CRAMER
Address 5528 NW DOANE AVE
PORTLAND, OR 97210
Phone # 248-1517 Fax # 248-1592

Billing Information
Company SAME
Contact _____
Address _____
Phone # _____ Fax # _____

Project Information
Project Name _____
Project # _____
P.O. # _____
Comments _____

Sampler's Name _____
Signature _____
Quote # _____
NOTE: If quote number is not referenced, standard pricing will be applied.
Provide Fax Results ☐ Yes ☐ No

Remarks
NEED TO DISTINGUISH BETWEEN FRESH KEROSENE & OTHER PETROLEUM CONTAMINATION

[N] Normal – 10 working days
[S] Special – 5 working days
[R] Rush – 24-72 hrs
[O] Other – _____

	Sample Identification	Date	Time	FOR LAB USE ONLY OAL Login #	# of Containers	Matrix: Soil	Matrix: Water	Matrix: Other (Note in Remarks)	Analyses: Volatiles 620 / 8260 / 8240 8010 / 8020	Semivolatiles 625 / 8270 PAH(SIM)8270 PAH8310	Organochlor Pest 608 / 8081 PCB 608 / 8082	NW TPH-HCID Quantity? ☐ Yes ☐ No	NW TPH Quantification G X DX/OIL	BTEX 602 / 8021 ☐ MTBE ☐ Naphthalene	Metals ☐ Total ☐ TCLP ☐ Dissolved As Ba Cd Cr Pb Hg Se Ag Other _____						Turnaround	Remarks
1	SA-03	6/15	2053		1	X							X									
2	SA-04	↓	2057		1	X							X									
3	SA-05	↓	2105		1	X							X									
4	SOURCE OIL	6/16	1030		1			X														KEROSENE (HEATING OIL #1)
5																						
6																						
7																						
8																						
9																						

Relinquished		Relinquished		Relinquished	
Signature [signature]	Date 6/16/00	Signature [signature]	Date 6/16/00	Signature	Date
Print Name Marty Cramer	Time 2:32	Print Name Kent Pettman	Time 3:28 pm	Print Name	Time
Company TOSCO		Company NCA		Company	
Received		**Received**		**Received**	
Signature [signature]	Date 6/16/00	Signature [signature]	Date 6/16/00	Signature	Date
Print Name Kent D Pettman	Time 2:32	Print Name Bob Falkstolz	Time 15:28	Print Name	Time
Company		Company		Company	

☐ Courier ☐ UPS ☐ FedEx ☐ Other
Received @ _____ °C
Appropriate Containers ☐ Yes ☐ No
_____ 4oz./8oz. Jars
_____ VOA Vials
_____ Plastic Bottles
_____ Glass Bottles
_____ Other _____

PGE 71982 (Oct 99)

COP0015602

GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	Reported:
Portland, OR 97224	Project Manager: Bill Collins	06/26/00 10:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DRAFT: PA-1-4.5	P006444-01	Soil	06/21/00 12:30	06/22/00 08:23
DRAFT: PA-1-11.0 No MATCH - WEATHERED	P006444-02	Soil	06/21/00 13:00	06/22/00 08:23
DRAFT: PA-2-4.0	P006444-03	Soil	06/21/00 13:30	06/22/00 08:23
DRAFT: PA-2-12.5	P006444-04	Soil	06/21/00 13:50	06/22/00 08:23
DRAFT: PA-3-2.5	P006444-05	Soil	06/21/00 14:15	06/22/00 08:23
DRAFT: PA-4-3.0	P006444-06	Soil	06/21/00 14:35	06/22/00 08:23
DRAFT: SA-1-2.0	P006444-07	Soil	06/21/00 15:40	06/22/00 08:23
DRAFT: SA-1-7.0 No MATCH - Also GASOLINE	P006444-08	Soil	06/21/00 15:20	06/22/00 08:23
DRAFT: SA-2-2.5	P006444-09	Soil	06/21/00 16:00	06/22/00 08:23
DRAFT: SA-2-6.0 No MATCH - Also has GASOLINE	P006444-10	Soil	06/21/00 16:10	06/22/00 08:23
DRAFT: SA-3-1.5	P006444-11	Soil	06/21/00 16:15	06/22/00 08:23
DRAFT: SA-3-5.0	P006444-12	Soil	06/21/00 16:20	06/22/00 08:23
DRAFT: SA-4-1.5	P006444-13	Soil	06/21/00 16:35	06/22/00 08:23
DRAFT: SA-4-5.5 No MATCH	P006444-14	Soil	06/21/00 16:45	06/22/00 08:23

DRAFT REPORT

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

FROM :NORTH CREEK ANALYTICAL TO :18248159Z 2000.06.26 10:53AM #845 P.02/12

COP0015603

ThermoRetec
Smart Solutions. Positive Outcomes.

TPS Technologies, Inc.
7400 E. McDonald Drive
Building 3, Suite 123
Scottsdale, AZ 85250
(480) 367-5885
FAX (480) 367-6938

FAX COVER NOTE

Date	
Charge No/Project No.	
Send to FAX No.	503 248-1592
Company Name	Tosco Distribution Co.
Attention	Marty Cramer
From	Donna
Number of Pages to Follow	2

Comments/Special Instructions:

Hard copy of invoice & manifest will follow in mail.

JOHN:
THIS IS FOR THE DISPOSAL OF THE KNOCKOUT SPILL SOILS

If you have any problems receiving this FAX, please call (480) 367-5885 as soon as possible.

COP0015604

[redacted]

TPS
TECHNOLOGIES INC.

For Questions Call:
(480) 367-5885
(800) 940-2666
Fax (480) 367-6938

REMIT TO: TPS TECHNOLOGIES, INC.
P.O. BOX 100103
PASADENA, CA 91189-0103

INVOICE NUMBER 007558
TPS JOB: 09-05745

SOLD TO: TOSCO DISTRIBUTION COMPANY
ATTN: MARTY CRAMER
5528 NORTHWEST DOANE AVENUE
PORTLAND, OR 97210

REFERENCE: TERMINAL
5526 NW DOANE AVENUE
PORTLAND, OR 97210

CUSTOMER PO# AUTH #350608

ACCOUNT NO	SALESPERSON	FACILITY	TERMS	INVOICE DATE
1003586	DL	109	NET 30 DAYS	12/28/00

CODE	QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
REM	94.23	CONTAMINATED SOIL REMEDIATION	30.00	$2,826.90
OTHER	94.23	FUEL SURCHARGE	2.00	$188.46
			TOTAL:	$3,015.36

A ThermoRetec Company

Thank You

ORIGINAL

Soil Master (c) TPS Technologies, Inc.

Customer Job Report

Gross & Tare Weight Codes: M=Manual; S=Scale; T=Trk File

Job Number Name	SiteAddress	SiteCity	State	ZipCode
A09 -- 05745 TOSCO/PORTLAND TERMIN	5528 NW DOANE AVE.	PORTLAND	OR	97210

Load #	Date & Time Out	Transporter #	Truck & Trailer Number	Gross (lb)	Tare (lb)	Net (lb)	Net Wt (tons)
1	12/21/00 12:03			31,200M	18,520M	12,680	6.34
2	12/21/00 12:54			32,740M	18,340M	14,400	7.20
3	12/21/00 13:45			32,560M	18,560M	14,000	7.00
4	12/21/00 14:41			33,440M	18,600M	14,840	7.42
5	12/22/00 08:26			28,260M	18,780M	9,480	4.74
6	12/22/00 09:38			31,640M	19,960M	11,680	5.84
7	12/22/00 10:41			32,100M	19,600M	12,500	6.25
8	12/22/00 11:50			30,940M	19,240M	11,700	5.85
9	12/27/00 15:07			27,940M	16,300M	11,640	5.82
10	12/27/00 16:05			29,240M	13,280M	15,960	7.98
11	12/28/00 07:50			25,680M	13,260M	12,420	6.21
12	12/28/00 08:54			26,780M	13,260M	13,520	6.76
13	12/28/00 10:03			28,040M	13,300M	14,740	7.37
14	12/28/00 11:43			32,180M	13,280M	18,900	9.45

Completed Loads	Manifests Received	Completed Weight	Estimated Weight	TOTAL Net Wt:
100.00%	14	53.80%	175.00(tons)	94.23 (tons)

Tosco Refining Company
A Division of Tosco Corporation
Portland Terminal
5528 Northwest Doane Avenue
Portland, Oregon 97210

TOSCO

November 2, 2001

Ms. Willow Whitton
Striplin Environmental Associates
222 Kenyon Street NW
Olympia, WA 98502

Re: Historical Portland Harbor Information
Tosco (former Unocal) Portland Terminal

Dear Willow:

Pursuant to a request by the Lower Willamette Group and my recent discussions with Betsy Striplin, enclosed are pertinent reports related to sediment sampling at the Tosco Terminal and upland groundwater monitoring for the Willbridge Terminals PRP Group (Tosco/Unocal, Chevron, KinderMorgan/Shell). As mentioned to Betsy, there is also a report on the interim remedial actions conducted at the terminal to control a seep at the city storm sewer outfall that will be forthcoming in the next few weeks once it is finalized. Additionally, AutoCADD files for the hydrographic surveys Tosco/Unocal have conducted in the vicinity of our dock will be send once received from Minister/Glasier.

The enclosed reports include:

- "River Sediment Sampling", Pacific Environmental Group, July 9, 1997 – This covered the original sediment sampling done to obtain a permit for maintenance dredging of the dock.
- Facsimile with TCLP Results, Pacific Environmental Group, November 3, 1997 – This was a summary of TCLP results we had run on the sediment samples to try and demonstrate to Ross Is. that they were acceptable for upland disposal.
- "Final Analytical Results", Pacific Environmental Group, December 16, 1997 – This was a summary of additional total and TCLP analyses that we had run to further try and demonstrate to Ross Is. and DEQ that they were acceptable for upland disposal.
- "January 1999 Sediment Sampling Results", Exponent, April 29, 1999 – This covered the supplemental sediment sampling and bulk chemistry/bioassay analyses required by the Corps to obtain a maintenance dredging permit as the original samples exceeded the screening levels in the DMMP.
- Correspondence to Marty Cramer at Tosco, ENSR, April 28, 1999 – This was a summary of the outside review by ENSR of the bioassay results from the above study to better understand why the tests failed.
- "Groundwater Monitoring Report – Second Quarter 2001", KHM, September 25, 2001 – This is the latest quarterly groundwater monitoring report for the Willbridge Terminals

If you have any questions on any of the enclosed documents, please feel free to contact me at (503) 248-1517.

Sincerely,

Martin Cramer
Site Manager

File: Portland/Superfund/HistDataLtr.doc

Enclosures

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471

November 5, 2001

Kirk Jarvie
State of Oregon
Division of State Lands
775 Summer Street NE, Suite 100
Salem, Oregon 97301

RE: DSL Permit Waiver for the Tosco Willbridge Cleanup Project

Dear Kirk:

As previously discussed in our telephone conversation on October 19, 2001, DEQ is providing oversight of the environmental investigations and cleanup at the Tosco Willbridge facility located at 5528 NW Doane Avenue in Portland. As part of the cleanup actions for this site, Tosco representatives and their consultant, KHM Environmental Management, Inc., are proposing to install a cutoff wall around a 60-inch storm sewer to mitigate contaminant seepage into the Willamette River. Design plans for this cleanup action have been submitted to and approved by DEQ. Part of the cutoff wall will be located within the ordinary high water line of the Willamette River. The construction of the cutoff wall will likely involve the excavation of over 50 cubic yards of soil from the river bank, which ordinarily would require a DSL permit under ORS 196.810.

For cleanup actions that have been approved by DEQ, the Environmental Cleanup Statutes, specifically ORS 465.315(3), provide a waiver from state and local permits with the condition that the substantive requirements of the permit are met. Accordingly, since the proposed construction of a cutoff wall with subsequent removal of soils from the river bank is a cleanup action approved by DEQ, the DSL permit is waived for this action. However, it is expected that the substantive requirements of the DSL permit will be met during the construction of the cutoff wall. These substantive requirements include the general conditions of the permit, Attachment A of the permit regarding specific conditions for turbidity/erosion controls, and the general conditions of Section 4 of the Lower Willamette River Management Plan as specified in your fax transmittal of October 19, 2001.

COP0015609

Please let me know if you need additional information regarding the proposed cleanup action. The DEQ-approved design plans for this cleanup action are available and can be forwarded to you upon request. Also, please feel free to call me at 503-229-6900 if you should have any questions regarding the permit waiver or the project in general.

Sincerely,

Jill Kiernan

Jill Kiernan, P.E.
Senior Project Engineer

cc : Marty Cramer, Tosco
Kelly Kline, KHM Environmental Management, Inc.
Gerald O'Regan, Chevron

00922
E RALSTON
RPTS - JUNE
2001 MDO
RELEASE

June 2001 MDO Release Delineation Assessment Tosco Portland Terminal Portland, Oregon

November 27, 2001

For

Tosco Corporation

GeoEngineers

File No. 4823-520-00-2150

COP0015611

GeoEngineers

November 27, 2001

Tosco Corporation
5528 Northwest Doane Avenue
Portland, Oregon 97210

Attention: Martin A. Cramer

June 2001 MDO Release
Delineation Assessment
Tosco Portland Terminal
Portland, Oregon
File No. 4823-520-00, Task 0100

INTRODUCTION

GeoEngineers is pleased to provide this report describing the results of delineation assessment activities conducted in the "Sand Lot" (site) at the Tosco Corporation (Tosco) Portland Terminal, located at 5528 Northwest Doane Avenue, in Portland, Oregon. The Sand Lot is located on the east side of Front Avenue, south of the asphalt shed and the terminal's dock. Our delineation assessment activities were requested by Mr. Martin Cramer on June 25, 2001, in response to a release from the marine diesel oil (MDO) product transfer line. The location of the terminal relative to surrounding features is shown in Figure 1. The general layout of the Sand Lot is shown in Figure 2. All pipelines in the Sand Lot are situated below grade with a burial depth of approximately 2 feet.

BACKGROUND

At approximately 2:00 p.m. on June 20, 2001, oily soil was discovered while exposing the terminal's process water line within the Sand Lot. The source of the oil was determined to be a pinhole leak in the adjacent MDO product transfer line. The leakage rate and the duration of the release could not be determined.

Tosco retained Cowlitz Clean Sweep (CCS) of Portland, Oregon to conduct initial remedial activities. Between June 21 and July 6, 2001, CCS excavated approximately 200 cubic yards of soil using a high-suction vacuum truck and manual excavation. The impacted soil (approximately 100 cubic yards) was temporarily stockpiled on site pending additional remedial activities and characterization. Clean overburden and surrounding soils were stockpiled separately.

GeoEngineers, Inc.
7504 SW Bridgeport Road
Portland, OR 97224
Telephone (503) 624-9274
Fax (503) 620-5940

Printed on recycled paper.

Tosco obtained initial soil samples from the interim limits of the remedial excavation on June 22, 2001. GeoEngineers obtained additional soil samples from the "final" interim limits of the remedial excavation on July 3, 2001. GeoEngineers further evaluated the extent of the release by advancing hand-augered and direct-push soil borings at the site between June 25 and July 25, 2001. The results of the initial excavation soil sampling activities conducted by Tosco and the additional excavation soil sampling and delineation assessment activities conducted by GeoEngineers are discussed below.

SCOPE OF SERVICES

GeoEngineers' specific scope of services at the site included the following tasks.

1. Obtain 13 soil samples from the "final" interim limits of the remedial excavation. Screen select soil samples in the field for the presence of hydrocarbons using visual, water sheen and headspace vapor testing methods
2. Advance four hand-augered soil borings and nine direct-push soil borings to depths ranging between approximately 16 and 28 feet near the source of the release.
3. Obtain continuous soil samples from the hand-augered soil borings and the direct-push borings. Screen soil samples in the field for the presence of hydrocarbons using visual, water sheen and headspace vapor testing methods. Visually classify the soil samples in general accordance with American Society for Testing and Materials (ASTM) D 2488, the Standard Practice for Description for Identification of Soils.
4. Submit selected soil samples from the excavation, hand-augered soil borings and the direct-push soil borings for chemical analysis of one or more of the following: hydrocarbon identification by Northwest NW-TPH methodology; gasoline-range petroleum hydrocarbons by Northwest Method NWTPH-Gx, diesel- and heavy oil-range petroleum hydrocarbons by Northwest Method NWTPH-Dx (with acid/silica gel cleanup) and benzene, ethylbenzene, toluene and xylenes (BETX) by U.S. Environmental Protection Agency (EPA) Method 8021B.
5. Complete hand-augered boring HA-1 as a piezometer and each direct-push soil boring as monitoring wells.
6. Measure the apparent thickness of light nonaqueous phase liquid (LNAPL) in the piezometer and the monitoring wells on a periodic basis from July 11, 2001 to August 14, 2001.
7. Obtain samples of LNAPL from select monitoring wells on June 22, 2001 and submit them for fuel fingerprint analysis by Northwest NW-TPH methodology.
8. Evaluate the analytical data from the samples obtained by Tosco and GeoEngineers with respect to Oregon Department of Environmental Quality (DEQ) cleanup criteria.

SUBSURFACE CONDITIONS

SOIL CONDITIONS

Subsurface conditions were explored by observing the soil conditions in the remedial excavation and completing four hand-augured soil borings and nine direct-push soil borings. The

COP0015613

depths of the soil borings ranged from approximately 16 to 28 feet below ground surface (bgs). The upper limit of the remedial excavation was approximately 8 feet bgs.

In the remedial excavation, fill material consisting of brown and gray fine to medium sand was encountered beneath the product pipes to the maximum depth excavated. Fill material, consisting of silty sandy gravel and/or brown to gray fine to medium sand was encountered in each of the hand-augered borings and direct-push borings GP-3, GP-4, GP-8 and GP-9 from the ground surface to the total depths explored (up to 27.5 feet bgs). An approximate 6-inch-thick layer of silt was encountered in direct-push boring GP-8 at a depth of approximately 22.5 feet bgs. Native silt was encountered beneath the fill sand in direct-push borings GP-1, GP-2, GP-5, GP-6 and GP-7 at depths ranging from approximately 22 to 25 feet bgs. The native silt unit encountered at the bases of these borings was not penetrated during exploration activities.

GROUND WATER CONDITIONS

Ground water was not encountered within the remedial excavation. Ground water was encountered during advancement of hand-augered boring HA-1 and the direct-push soil borings at depths ranging from approximately 17 to 19 feet bgs. The inferred direction of ground water flow is east toward the Willamette River.

LNAPL DISTRIBUTION

LNAPL was measured in piezometer HA-1 and in monitoring wells MW-1 through MW-7 on July 11, July 13, July 19, July 30, August 1 and August 14, 2001. LNAPL was also measured in existing wells RW-3, B-40 and U-5 one or more times between July 11 and August 14, 2001. The apparent LNAPL thickness measured in these wells ranged from 0.01 foot (MW-1 on July 13, 2001) to 3.34 feet (MW-3 on July13, 2001). The actual formation thickness of LNAPL in the vicinity of these wells may be less than the measured apparent thickness because of capillary effects in fine-grained soil at the site. LNAPL was not measured in monitoring wells MW-8, MW-9 or the remaining existing wells.

Apparent LNAPL thickness measured in piezometer HA-1 and the wells between July 11 and August 14, 2001 are shown in Figures 3 through 8. The apparent thicknesses shown on Figures 3 through 8 do not represent actual thicknesses of LNAPL in the formation, but are presented to simply show a graphical representation of the inferred lateral extent. LNAPL measurements are also summarized in Table 3. As shown in the figures, the extent of product is elongated in a general east-west direction, with the greatest apparent thickest of LNAPL occurring in MW-3.

REMEDIAL EXCAVATION ACTIVITIES

GENERAL

Tosco collected three soil samples (SL-1-3 through SL-3-3) near the point of the release on June 21, 2001 during the initial response activities. Tosco collected five additional samples (EX-SW-1-6.0, EX-SW-2-6.0, EX-FL-1-8.0, EX-FL-2-7.5 and EX-FL-3-8.0) from the western portion of the interim remedial excavation limits on June 21, 2001 during remedial excavation

activities. GeoEngineers collected 13 soil samples (EX-SW-3-5 through EX-SW-10-3 and EX-FL-4-6.5 through EX-FL-8-8) from the "final" interim limits of the remedial excavation on July 3, 2001.

The approximate interim and "final" interim limits of the remedial excavation and soil sample locations are shown in Figure 9. The analytical results of the excavation samples are summarized in Table 1. For screening purposes, the concentrations of volatile organic compounds (VOCs) detected in the soil samples were compared to DEQ's Generic Risk-based Concentrations (RBCs) presented in Appendix A of DEQ's September 1999 guidance document (DEQ, 1999). A comparison of the soil analytical data to DEQ's Generic RBCs is also presented in Table 1. A description of the field screening and sampling methods used are presented in Attachment A. The laboratory reports, chain-of-custody records and our review of the laboratory quality control documentation are included in Attachment B.

REMEDIAL EXCAVATION OBSERVATIONS

CCS began removing impacted soil on June 25, 2001. Between June 21 and July 6, 2001, CCS excavated approximately 200 cubic yards of soil in the vicinity of the release using a combination of excavator, high-suction vacuum truck, and manual removal. The impacted soil below approximately 2 feet bgs could not be removed by excavator due to the presence of numerous active product pipes. The product pipes were encountered between approximately 2.5 and 3 feet bgs. Two concrete pipe supports were also encountered during the remedial excavation activities (Figure 9).

The impacted soil was removed in stages. GeoEngineers did not observe the excavation activities, however, it is assumed that the limits shown on Figure 9 are not the ultimate limits of the remedial excavation. Tosco has indicated that additional impacted soil removal is anticipated once engineering controls are in place to stabilize the pipeway. The maximum depth of the "final" interim limit of the remedial excavation was approximately 8 feet bgs. In general, evidence of soil impacted from the current release and/or historical releases was observed at the base and along the southern and western sidewalls of the "final" interim limits of the excavation.

REMEDIAL EXCAVATION SOIL SAMPLING RESULTS

General

Soil samples SL-1-3, SL-2-3 and SL-3-3 were obtained from the area adjacent to the leak and the initial northern and southern limits of the initial remedial excavation. Soil represented by these interim samples was subsequently removed during further remedial excavation. Eighteen soil samples were obtained from the "final" interim limits of the remedial excavation. The sample identification and location (SW for sidewall sample, FL for floor sample) are listed in Table 1; the locations are shown in Figure 9. Additionally, the sample's depth is included in the sample number. For example, sample EX-SW-1-6.0 was obtained from a sidewall at a depth of about 6 feet bgs at the approximate location SW-1 shown in Figure 9. Field screening evidence of petroleum-related contamination was observed in all but one (EX-SW-8-1) of the soil samples.

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Sidewall Samples – Petroleum Hydrocarbons

Elevated concentrations of gasoline- and diesel-range hydrocarbons (greater than 500 milligrams per kilogram [mg/kg] and 5,000 mg/kg, respectively) were quantitatively detected in sidewall samples EX-SW-3-5, EX-SW-7-4 and EX-SW-10-3 at concentrations ranging from 703 mg/kg to 1,210 mg/kg and from 7,380 mg/kg to 18,800 mg/kg, respectively. Oil-range hydrocarbons also were detected in sidewall samples EX-SW-3-5 and EX-SW-10-3 at concentrations of 3,460 mg/kg and 2,080 mg/kg, respectively.

Gasoline-range hydrocarbons either were not detected or were detected at concentrations less than 5 mg/kg in the remaining samples obtained from the sidewalls of the remedial excavation. Diesel- and heavy oil-range hydrocarbons were not detected in the remaining samples obtained from the sidewalls of the remedial excavation.

Floor Samples – Petroleum Hydrocarbons

Gasoline- and diesel-range hydrocarbons were quantitatively detected in interim samples SL-1-3, SL-2-3 and SL-3-3 at concentrations ranging from 4,000 mg/kg to 5,510 mg/kg and from 26,400 mg/kg to 37,900 mg/kg, respectively. As stated above, soil represented by these samples was subsequently removed during further remedial excavation.

Gasoline- and diesel-range hydrocarbons were quantitatively detected in samples obtained from the floor of the "final" interim limits of the remedial excavation at concentrations ranging from 1,190 mg/kg to 5,440 mg/kg and from 14,500 mg/kg to 63,000 mg/kg, respectively. Oil-range hydrocarbons also were detected in the samples obtained from the floor of the "final" interim limits of the remedial excavation at concentrations of 839 mg/kg to 11,000 mg/kg, respectively. Gasoline-, diesel and oil-range hydrocarbons either were not detected or were detected at concentrations less than 50 mg/kg in the remaining samples obtained from the floor of the "final" interim limits of the remedial excavation.

Sidewall Samples – BETX

BETX compounds were not detected in any of the sidewall samples obtained from the "final" interim limits of the remedial excavation, with the exception of ethylbenzene and xylenes. Ethylbenzene and/or xylenes were detected at concentrations ranging from 1.67 mg/kg to 9.99 mg/kg in sidewall samples SW-EX-3-5 and SW-EX-7-4.

Floor Samples – BETX

Benzene was not detected in any of the floor samples obtained from the interim limits or "final" interim limits of the remedial excavation. Ethylbenzene, toluene and/or xylenes were detected in six of the eight floor samples at concentrations ranging from 0.154 mg/kg to 105 mg/kg.

SUBSURFACE EXPLORATIONS

GENERAL

Four hand-augered borings were completed at the site on June 25 and 26, 2001, and five direct-push boring were completed on July 11, 2001. Four additional direct-push borings were completed on July 25, 2001. The approximate locations of the hand-augered and direct-push borings are shown in Figure 3.

Field methods and sampling details are summarized in Attachment A. Copies of the soil boring logs are also included in Attachment A. Table 2 summarizes analytical results from the hand-augered and direct-push boring samples obtained by GeoEngineers.

For screening purposes, the concentrations of VOCs detected in the soil samples were compared to DEQ's Generic RBCs presented in Appendix A of DEQ's September 1999 guidance document (DEQ, 1999). A comparison of the soil analytical data to DEQ's Generic RBCs is also presented in Table 2. Copies of the laboratory reports are presented in Attachment B.

SOIL SAMPLING RESULTS

Hand-augured Borings

A total of 13 soil samples were obtained from the hand-augered borings. Gasoline-range hydrocarbons were detected in 11 of the 13 soil samples at concentrations ranging from 2.39 mg/kg (HA-4 at a depth of 5 feet) to 4,260 mg/kg (HA-1 at a depth of 17 feet). Diesel-range hydrocarbons were detected in nine of the 14 soil samples at concentrations ranging from 2,960 mg/kg (HA-2 at a depth of 4 feet) to 89,900 mg/kg (HA-1 at a depth of 17 feet). Oil-range hydrocarbons were detected in eight of the 13 soil samples at concentrations ranging from 662 mg/kg (HA-2 at 4 feet) to 24,100 mg/kg (HA-1 at 17 feet).

Benzene was detected in only one soil sample, HA-1-6.0, at a concentration of 1.03 mg/kg. Ethylbenzene, toluene and/or xylenes were detected in nine of the 13 soil samples at concentrations ranging from 0.539 mg/kg to 80.6 mg/kg.

Direct-push Soil Borings

Diesel- and oil-range hydrocarbons were not detected from any of the soil samples obtained from the direct-push borings at depths less than 12 feet bgs. Diesel-range hydrocarbons were detected in boring GP-7 (at a depth between 14 and 16 feet bgs) at a concentration of 53.9 mg/kg. Diesel- and oil-range hydrocarbons were detected in boring GP-6 (at a depth between 22 and 24 feet bgs) at concentrations of 580 mg/kg and 54.1 mg/kg, respectively. Elevated concentrations of diesel-range hydrocarbons were detected in soil samples obtained from borings GP-1 through GP-5 (at depths between 21 and 24 feet bgs) at concentrations ranging from 6,880 mg/kg to 26,300 mg/kg. Oil-range hydrocarbons were not detected in the remaining soil samples submitted for analysis.

LNAPL SAMPLING

GeoEngineers obtained samples of LNAPL from monitoring wells MW-1, MW-3, MW-6, MW-7 and HA-1 on July 30, 2001. Tosco obtained a sample of LNAPL from the outfall of the 60-inch storm sewer (Figure 2) which is located approximately 240 feet west of the center of the remedial excavation on June 22, 2001. The LNAPL samples were submitted for fuel fingerprint analysis by Northwest NW-TPH methodology.

The results of the fuel fingerprinting analysis indicate that the LNAPL sampled from the monitoring wells consists of gasoline-, diesel- and oil-range hydrocarbons. LNAPL sampled from the outfall consists of diesel- and oil-range hydrocarbons. The LNAPL samples are further discussed below and in the laboratory's case narrative in Attachment B.

FORENSIC RESULTS

Two MDO source oil samples were obtained by Tosco on June 22 and June 25, 2001 and submitted to the laboratory for hydrocarbon identification by Northwest NW-TPH methodology and Northwest Method NWTPH-Dx. The laboratory compared the results from these samples to the hydrocarbons detected in select samples obtained from the remedial excavation, the hand-augered and direct-push borings, the LNAPL samples obtained from the monitoring wells, and the outfall LNAPL sample.

According to the laboratory, interim soil samples SL-1-3, SL-2-3, SL-3-3 and floor sample EX-FL-3-8.0 contained concentrations of petroleum hydrocarbons consistent with the MDO source oil sample. The only other sample potentially containing concentrations of petroleum hydrocarbons consistent with the MDO source oil was HA-1-10. However, the laboratory noted that there may be other types of fuel present in this sample. The forensic results for soil samples HA-1-6, HA-1-17, HA-2-4 and HA-2-10 displayed a complex mixture of hydrocarbons. The laboratory attributed the hydrocarbons in these samples to a "bunker type" fuel. According to the laboratory, the contamination identified in soil samples HA-2-15, HA-3-14, HA-4-15 and HA-4-20 appeared to be old and unrelated to the MDO leak.

According to the laboratory, the petroleum hydrocarbons detected in the LNAPL samples obtained from monitoring wells GP-1, GP-2, GP-6 and GP-7 resemble a weathered product and appear to have been in the environment for several decades. The laboratory concluded that the LNAPL obtained from GP-1, GP-2, GP-6 and GP-7 could not be derived from the MDO release. The LNAPL sample collected from piezometer HA-1 most closely resembles the MDO source fuel. However, the high levels of sulfur and a number of light sulfur compounds in the sample may indicate that the MDO release is not a source or the LNAPL from HA-1 is a mixture of the MDO product and other product.

According to the laboratory, the LNAPL sample obtained from the outfall resembles the LNAPL samples collected from the monitoring wells suggesting that they share a common source.

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A summary of the comparative results for the soil and LNAPL samples is presented in Table 4. The laboratory case narrative discussing the forensic results is presented in Attachment B.

SUMMARY

Petroleum hydrocarbons were detected in 16 of the 21 soil samples obtained from the interim and "final" interim limits of the remedial excavation. Petroleum hydrocarbons also were detected in 19 of the 20 soil samples obtained from the hand-augered and direct-push soil borings. In general, the petroleum hydrocarbons were detected in the base and in the eastern and southern sidewalls of the remedial excavation, in the hand-augered borings and in the direct-push soil borings at depths greater than 14 feet bgs.

Benzene was detected in the soil sample obtained from hand-augered boring HA-1 (at a depth of 6 feet bgs) at a concentration greater than the applicable occupational receptor scenario for the vapor intrusion into buildings and leaching to ground water pathways. BETX compounds either were not detected or were detected at concentrations less than DEQ's RBCs in the remaining samples submitted for analysis from the hand-augered borings.

Based on the results of the forensic analysis, the MDO release appears to have impacted soils near the point of the release from approximately 3 to 10 feet bgs. The lateral extent of the soil impacted by the MDO release appears to extend laterally from the point of the release incorporating sample locations SL-1-3, SL-2-3, SL-3-3 and EX-FL-3-8. The only sample of LNAPL that was a potential match to the MDO product was the sample collected from piezometer HA-1. All other product samples obtained from the monitoring wells appear to be unrelated to the MDO release.

LIMITATIONS

We have prepared this report for use by Tosco Corporation. Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Please refer to Attachment C titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

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GeoEngineers appreciates the opportunity to provide Tosco Corporation with professional environmental services. If you have questions concerning the information presented in this report, or require additional information, please contact one of the undersigned.

Yours very truly,

GeoEngineers, Inc.

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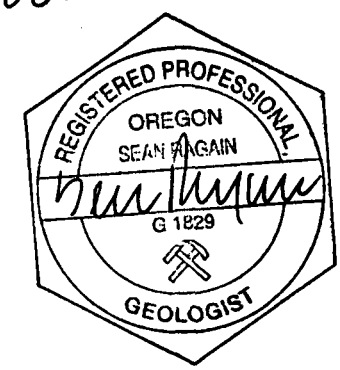

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Attachments

Two copies submitted

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TABLE 1 (Page 1 of 2)
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA[1]
EXCAVATION SOIL SAMPLES
TOSCO PORTLAND TERMINAL - SAND LOT
PORTLAND, OREGON

Sample Identification	Date Sampled	Depth of Sample (feet)	Gasoline-range Hydrocarbons (Northwest Method NWTPH-Gx) (mg/kg)	Diesel- and Oil-range Hydrocarbons (Northwest Method NWTPH-Dx with Acid/Silica Gel Cleanup) (mg/kg)		BETX Compounds[2] (EPA Method 8021B) (mg/kg)			
				Diesel	Oil	B	E	T	X
SL-1-3	06/21/01	3.0	4,420	37,900	<500	<5.00	15.9	20.3	95.9
SL-2-3	06/21/01	3.0	5,510	37,400	<2,000	<5.00	20.0	18.9	131
SL-3-3	06/22/01	3.0	4,000	26,400	<1,040	<5.00	15.0	14.6	95.1
EX-SW-1-6.0	06/29/01	6.0	<2.00	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
EX-SW-2-6.0	06/29/01	6.0	<2.00	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
EX-FL-1-8.0	06/29/01	8.0	<2.00	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
EX-FL-2-7.5	06/29/01	7.5	2.89	31.8	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
EX-FL-3-8.0	06/29/01	8.0	5,440	14,500	839	<5.00	<5.00	<5.00	<5.00
EX-FL-4-6.5	07/03/01	6.5	2,140	63,000	11,000	<5.00	5.29	7.34	31.8
EX-FL-5-6	07/03/01	6.0	4,840	56,200	<4,000	<5.00	15.9	21.1	105
EX-FL-6-5	07/03/01	5.0	45.7	<25.0	<50.0	<0.100	0.154	0.206	0.297
EX-FL-7-6	07/03/01	6.0	1,320	15,000	2,660	<2.50	3.13	<2.50	19.0
EX-FL-8-8	07/03/01	8.0	1,190	15,800	3,130	<2.50	2.89	<2.50	19.2
EX-SW-3-5	07/03/01	5.0	1,210	13,500	3,460	<1.00	1.67	<1.00	9.99
EX-SW-4-4	07/03/01	4.0	3.84	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
EX-SW-5-4	07/03/01	4.0	4.88	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
EX-SW-6-6.5	07/03/01	6.5	<2.00	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
EX-SW-7-4	07/03/01	4.0	836	7,380	<1,000	<0.500	<0.500	<0.500	2.83
EX-SW-8-1	07/03/01	1.0	4.05	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
EX-SW-9-3	07/03/01	3.0	<2.00	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
EX-SW-10-3	07/03/01	3.0	703	18,800	2,080	<1.00	<1.00	<1.00	<1.00
DEQ Risk-Based Concentrations									
Ingestion, Dermal Contact, and Inhalation									
Residential			NE	NE	NE	8.2	2,000	1,700	4,100
Occupational			NE	NE	NE	29	47,000	31,000	63,000
Excavation Worker			NE	NE	NE	1,100	85,000	40,000	72,000

Notes appear on page 2 of 2.

TABLE 1 (Page 2 of 2)

Sample Identification	Date Sampled	Depth of Sample (feet)	Gasoline-range Hydrocarbons (Northwest Method NWTPH-Gx) (mg/kg)	Diesel- and Oil-range Hydrocarbons (Northwest Method NWTPH-Dx with Acid/Silica Gel Cleanup) (mg/kg)		BETX Compounds[2] (EPA Method 8021B) (mg/kg)			
				Diesel	Oil	B	E	T	X
DEQ Risk-Based Concentrations (continued)									
Volatilization to Outdoor Air									
Residential			NE	NE	NE	11	330	540	360
Occupational			NE	NE	NE	21	330	540	360
Vapor Intrusion into Buildings									
Residential			NE	NE	NE	0.091	330	190	360
Occupational			NE	NE	NE	0.5	330	540	360
Leaching to Ground Water									
Residential			NE	NE	NE	0.044	330	390	360
Occupational			NE	NE	NE	0.10	330	540	360

Notes:

[1]Chemical analyses were conducted by North Creek Analytical, Inc. of Portland, Oregon.

[2]B = benzene, E = ethylbenzene, T = toluene, X = xylenes.

mg/kg = milligrams per kilogram

NE = not established

"<0.0500" indicates that the analyte was not detected at a concentration greater than the concentration indicated.

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TABLE 2 (Page 1 of 2)
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA[1]
HAND-AUGERED BORINGS AND DIRECT-PUSH BORINGS

TOSCO PORTLAND TERMINAL - SAND LOT
PORTLAND, OREGON

Exploration Sample Number	Date Sampled	Depth of Sample (feet)	Gasoline-range Hydrocarbons (Northwest Method NWTPH-Gx) (mg/kg)	Diesel- and Oil-range Hydrocarbons (Northwest Method NWTPH-Dx with Acid/Silica Gel Cleanup) (mg/kg)		Selected Volatile Organic Compounds[2] (EPA Method 8021B) (mg/kg)			
				Diesel	Oil	B	E	T	X
HAND-AUGERED BORINGS									
HA-1-6.0	06/25/01	6.0	1,660	49,200	13,200	1.03	6.74	7.56	38.0
HA-1-10	06/25/01	10.0	4,050	28,600	1,400	<5.00	10.1	14.3	70.7
HA-1-17	06/25/01	17.0	4,260	89,900	24,100	<5.00	13.6	13.5	80.6
HA-2-4	06/25/01	4.0	509	2,960	662	<0.500	1.11	0.566	7.59
HA-2-10	06/25/01	10.0	724	7,610	1,350	<1.00	1.40	<1.00	8.09
HA-2-15	06/25/01	15.0	316	5,690	1,340	<0.500	0.539	<0.500	3.03
HA-3-5	06/26/01	5.0	<2.00	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
HA-3-10	06/26/01	10.0	<2.00	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
HA-3-14	06/26/01	14.0	684	10,300	1,670	<0.500	1.55	0.571	6.83
HA-4-5	06/26/01	5.0	2.39	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
HA-4-10	06/26/01	10.0	17.0	<25.0	<50.0	<0.0500	<0.0500	<0.0500	<0.0500
HA-4-15	06/26/01	15.0	442	13,000	<1,000	<0.500	<0.500	<0.500	1.46
HA-4-20	06/26/01	20.0	1,610	62,500	16,700	<2.50	5.22	4.23	30.7
DIRECT-PUSH BORINGS									
GP-1 (9-12)	07/11/01	9-12	--	<25.0	<50.0	--	--	--	--
GP-1 (21-24)	07/11/01	21-24	--	21,500	<2,500	--	--	--	--
GP-2 (9-12)	07/11/01	9-12	--	<25.0	<50.0	--	--	--	--
GP-2 (21-24)	07/11/01	21-24	--	15,500	<2,000	--	--	--	--
GP-3 (9-12)	07/11/01	9-12	--	<25.0	<50.0	--	--	--	--
GP-3 (21-24)	07/11/01	21-24	--	6,880	<500	--	--	--	--
GP-4 (9-12)	07/11/01	9-12	--	<25.0	<50.0	--	--	--	--
GP-4 (21-24)	07/11/01	21-24	--	26,300	<2,500	--	--	--	--
GP-5 (9-12)	07/11/01	9-12	--	<25.0	<50.0	--	--	--	--
GP-5 (22-24)	07/11/01	22-24	--	19,800	<2,500	--	--	--	--
GP-6 (14-16)	07/25/01	14-16	--	<25.0	<50.0	--	--	--	--
GP-6 (22-24)	07/25/01	22-24	--	580	54.1	--	--	--	--

Notes appear on page 2 of 2.

TABLE 2 (Page 2 of 2)

Exploration Sample Number	Date Sampled	Depth of Sample (feet)	Gasoline-range Hydrocarbons (Northwest Method NWTPH-Gx) (mg/kg)	Diesel- and Oil-range Hydrocarbons (Northwest Method NWTPH-Dx with Acid/Silica Gel Cleanup) (mg/kg)		Selected Volatile Organic Compounds[2] (EPA Method 8021B) (mg/kg)			
				Diesel	Oil	B	E	T	X
DIRECT-PUSH BORINGS (continued)									
GP-7 (14-16)	07/25/01	14-16	--	53.9	<50.0	--	--	--	--
GP-7 (22-24)	07/25/01	22-24	--	13,700	<2,000	--	--	--	--
GP-8 (14-16)	07/25/01	14-16	--	<25.0	<50.0	--	--	--	--
GP-8 (22-24)	07/25/01	22-24	--	216	<50.0	--	--	--	--
GP-9 (14-16)	07/25/01	14-16	--	<25.0	<50.0	--	--	--	--
GP-9 (22-24)	07/25/01	22-24	--	<25.0	<50.0	--	--	--	--
DEQ Risk-Based Concentrations									
Ingestion, Dermal Contact, and Inhalation									
Residential			NE	NE	NE	8.2	2,000	1,700	4,100
Occupational			NE	NE	NE	29	47,000	31,000	63,000
Excavation Worker			NE	NE	NE	1,100	85,000	40,000	72,000
Volatilization to Outdoor Air									
Residential			NE	NE	NE	11	330	540	360
Occupational			NE	NE	NE	21	330	540	360
Vapor Intrusion into Buildings									
Residential			NE	NE	NE	0.091	330	190	360
Occupational			NE	NE	NE	0.5	330	540	360
Leaching to Ground Water									
Residential			NE	NE	NE	0.044	330	390	360
Occupational			NE	NE	NE	0.10	330	540	360

Notes:

[1]Chemical analyses were conducted by North Creek Analytical, Inc. of Portland, Oregon.

mg/kg = milligrams per kilogram

"--" = not analyzed

NE = not established

"<0.0500" indicates that the analyte was not detected at a conentration greater than the concentration indicated.

Shading indicates concentration greater than the DEQ risk-based concentration.

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TABLE 3 (Page 1 of 3)
SUMMARY OF PRODUCT THICKNESS MEASUREMENTS
TOSCO PORTLAND TERMINAL - SAND LOT
PORTLAND, OREGON

Monitoring Well Number	Date Monitored	LNAPL Thickness (feet)
HA-1	07/11/01	1.20
	07/13/01	1.76
	07/19/01	0.95
	07/30/01	1.08
	08/01/01	1.22
	08/14/01[1]	--
MW-1	07/11/01	2.50
	07/13/01	1.08
	07/19/01	1.12
	07/30/01	0.79
	08/01/01	1.41
	08/14/01[1]	1.05
MW-2	07/11/01	0.50
	07/13/01	1.19
	07/19/01	1.15
	07/30/01	--
	08/01/01	1.12
	08/14/01[1]	1.62
MW-3	07/11/01	1.10
	07/13/01	3.34
	07/19/01	2.32
	07/30/01	1.13
	08/01/01	2.46
	08/14/01[1]	2.99
MW-4	07/11/01	0.05
	07/13/01	0.01
	07/19/01	0.27
	07/30/01	--
	08/01/01	0.74
	08/14/01[1]	0.96
MW-5	07/11/01	0.05
	07/13/01	1.23
	07/19/01	1.62
	07/30/01	--
	08/01/01	2.71
	08/14/01[1]	2.37
MW-6	07/11/01	--
	07/13/01	--
	07/19/01	--
	07/30/01	0.92
	08/01/01	1.65
	08/14/01[1]	1.95

Notes appear on page 3 of 3.

TABLE 3 (Page 2 of 3)

Monitoring Well Number	Date Monitored	LNAPL Thickness (feet)
MW-7	07/11/01	--
	07/13/01	--
	07/19/01	--
	07/30/01	0.31
	08/01/01	0.95
	08/14/01[1]	2.84
MW-8	07/11/01	--
	07/13/01	--
	07/19/01	--
	07/30/01	--
	08/01/01	0.00
	08/14/01[1]	0.00
MW-9	07/11/01	--
	07/13/01	--
	07/19/01	--
	07/30/01	--
	08/01/01	0.00
	08/14/01[1]	0.00
DW-1	07/11/01	--
	07/13/01	0.00
	07/19/01	0.00
	07/13/01	--
	08/01/01	0.00
	08/14/01[1]	--
DW-2	07/11/01	--
	07/13/01	0.00
	07/19/01	0.00
	07/30/01	--
	08/01/01	0.00
	08/14/01[1]	--
RES-N	07/11/01	--
	07/13/01	0.00
	07/19/01	0.00
	07/30/01	--
	08/01/01	0.00
	08/14/01[1]	--
U-5	07/11/01	--
	07/13/01	0.26
	07/19/01	0.33
	07/30/01	--
	08/01/01	0.05
	08/14/01[1]	--
RW-2	07/11/01	--
	07/13/01	0.00
	07/19/01	0.00
	07/30/01	--
	08/01/01	0.00
	08/14/01[1]	--

Notes appear on page 3 of 3.

TABLE 3 (Page 3 of 3)

Monitoring Well Number	Date Monitored	LNAPL Thickness (feet)
RW-3	07/11/01	--
	07/13/01	0.05
	07/19/01	0.03
	07/30/01	--
	08/01/01	0.03
	08/14/01[1]	--
RW-4	07/11/01	--
	07/13/01	0.00
	07/19/01	0.00
	07/30/01	--
	08/01/01	0.00
	08/14/01[1]	--
B-40	07/11/01	1.74
	07/13/01	1.77
	07/19/01	1.84
	08/01/01	--
	08/14/01[1]	--

Notes:
[1]Measured by Tosco.
"--" = not measured

No. 482352000T3.xls

TABLE 4
SUMMARY OF LABORATORY FORENSIC RESULTS
SOIL AND LNAPL SAMPLES
TOSCO PORTLAND TERMINAL - SAND LOT
PORTLAND, OREGON

Sample Identification	Result
Soil	
SL-1-3	MDO Match
SL-2-3	MDO Match
SL-3-3	MDO Match
HA-1-10	Possible MDO Match
HA-1-6	Bunker and High Paraffinitic Fuel Oils
HA-1-17	Bunker and High Paraffinitic Fuel Oils
HA-2-4	Bunker and High Paraffinitic Fuel Oils
HA-2-10	Bunker and High Paraffinitic Fuel Oils
HA-2-15	Weathered Bunker Related Fuel Oil
HA-3-14	Weathered Bunker Related Fuel Oil
HA-4-15	Weathered Bunker Related Fuel Oil
HA-4-20	Weathered Bunker Related Fuel Oil
LNAPL Samples	
GP-6	Middle Distillate Fuel Oils - Similar to Outfall Sample
GP-7	Middle Distillate Fuel Oils - Similar to Outfall Sample
GP-1	Weathered Distillate Fuel Oils - Similar to Outfall Sample
GP-3	Weathered Distillate Fuel Oils - Similar to Outfall Sample
HA-1	Possible MDO Match Plus Mixture
Outfall Oil	Distillate Fuel Oils - Similar to "GP" Samples

No. 482352000T4.xls

References: USGS 7.5' topographic quadrangle maps, "Portland, OR–WA," dated 1961 photorevised 1977, and "Linnton, OR," dated 1990.

Portland/P:/4823520/00/Cad/Vicinity.dwg JSO:MWJ 10/19/01

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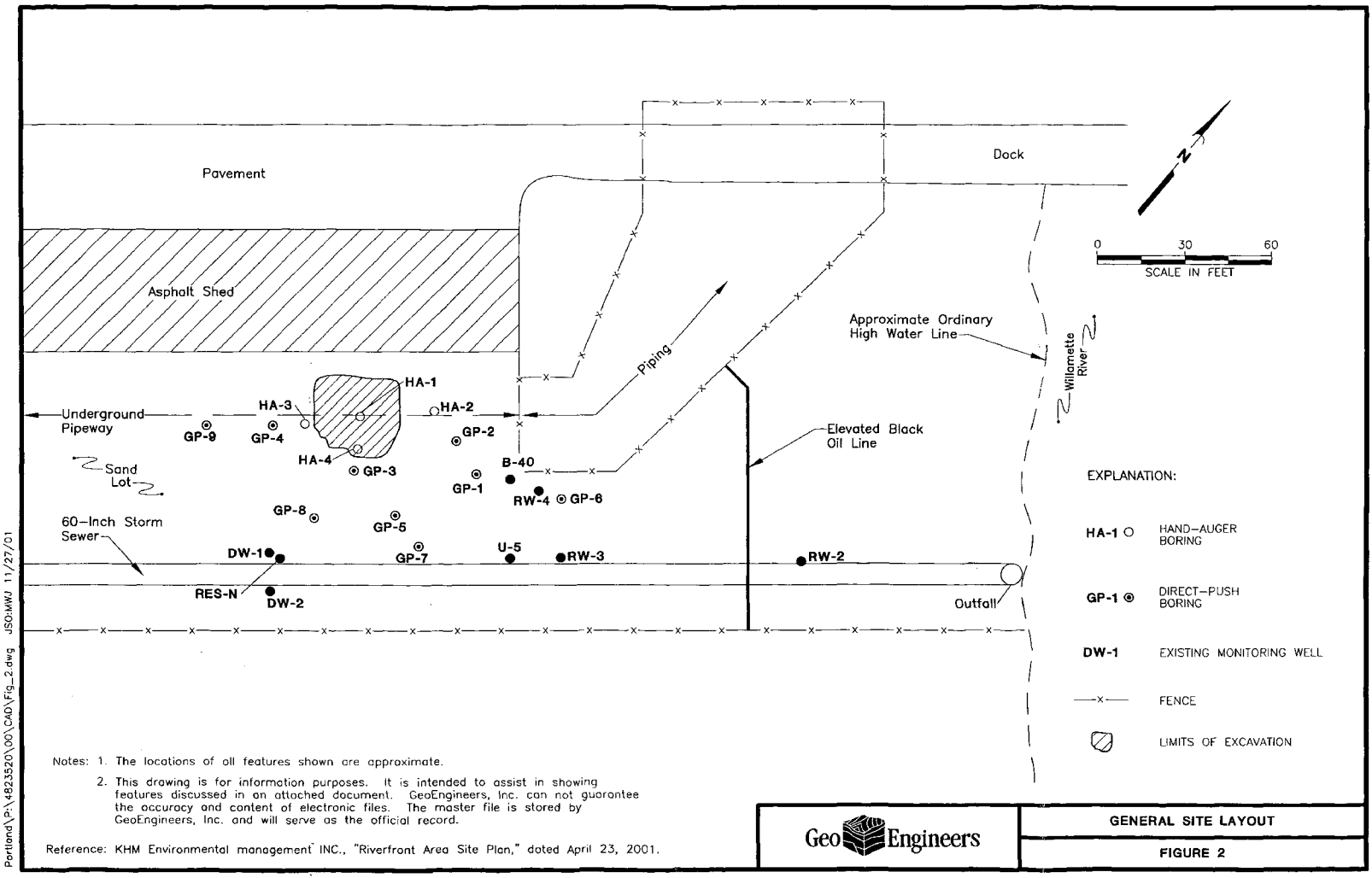
VICINITY MAP

FIGURE 1

COP0015629



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record.

Reference: KHM Environmental management INC., "Riverfront Area Site Plan," dated April 23, 2001.

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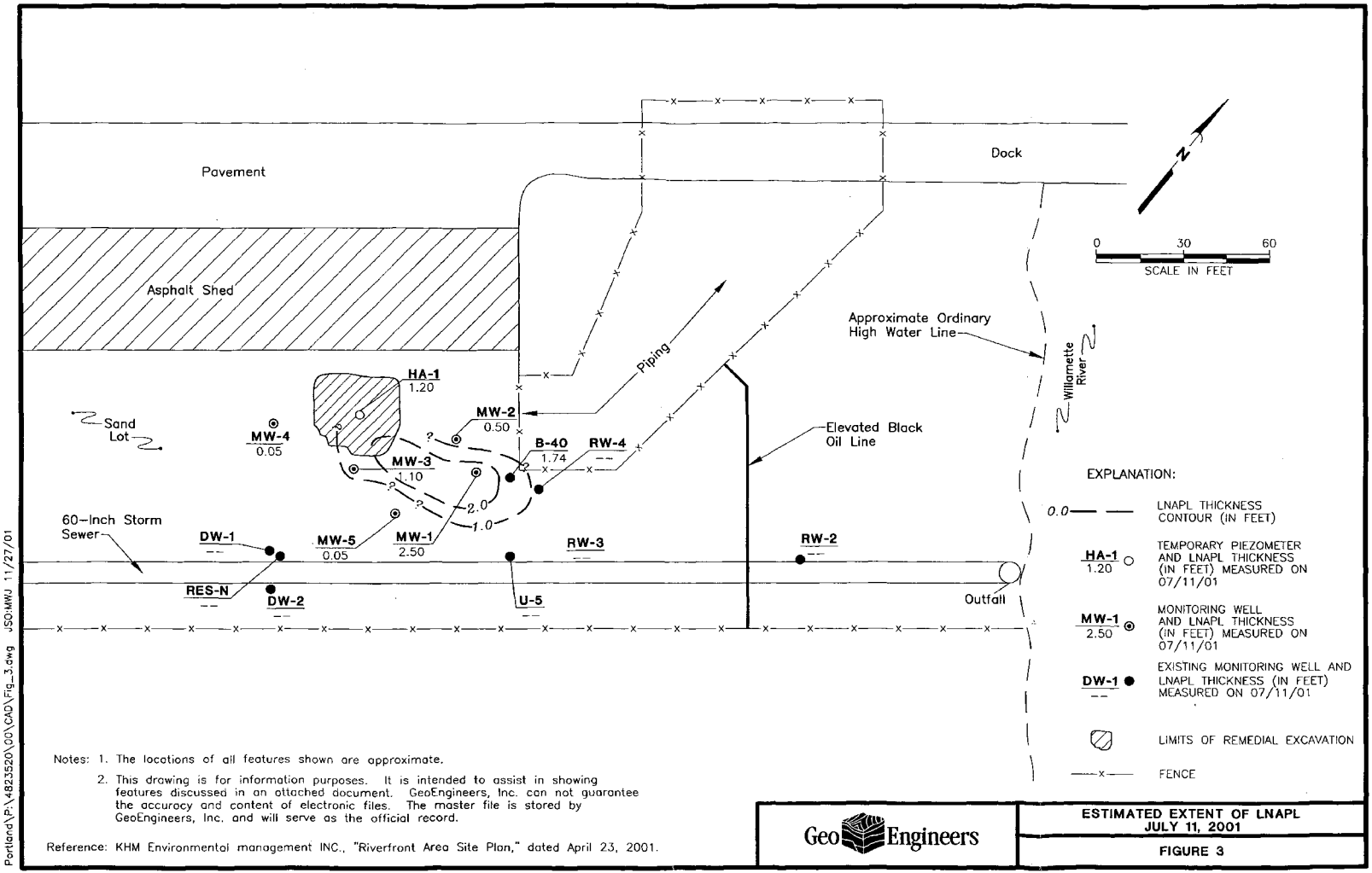
GENERAL SITE LAYOUT

FIGURE 2

Portland\P:\4823520\00\CAD\Fig_2.dwg JSO:MWJ 11/27/01

COP0015630



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record.

Reference: KHM Environmental management INC., "Riverfront Area Site Plan," dated April 23, 2001.

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ESTIMATED EXTENT OF LNAPL JULY 11, 2001

FIGURE 3

Portland\P:\4823520\001\CAD\Fig_3.dwg -SO:MWJ 11/27/01

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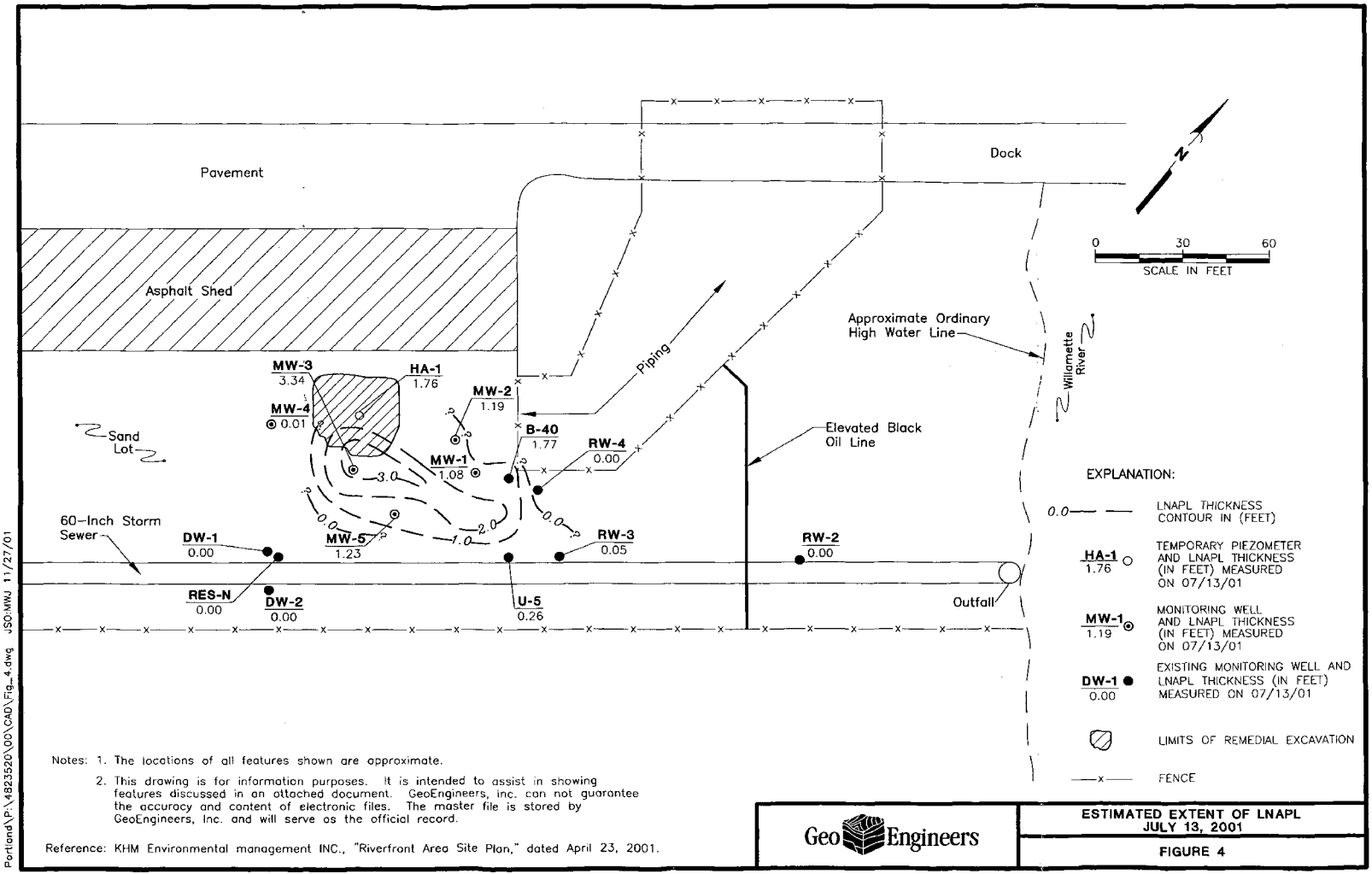

Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record.

Reference: KHM Environmental management INC., "Riverfront Area Site Plan," dated April 23, 2001.

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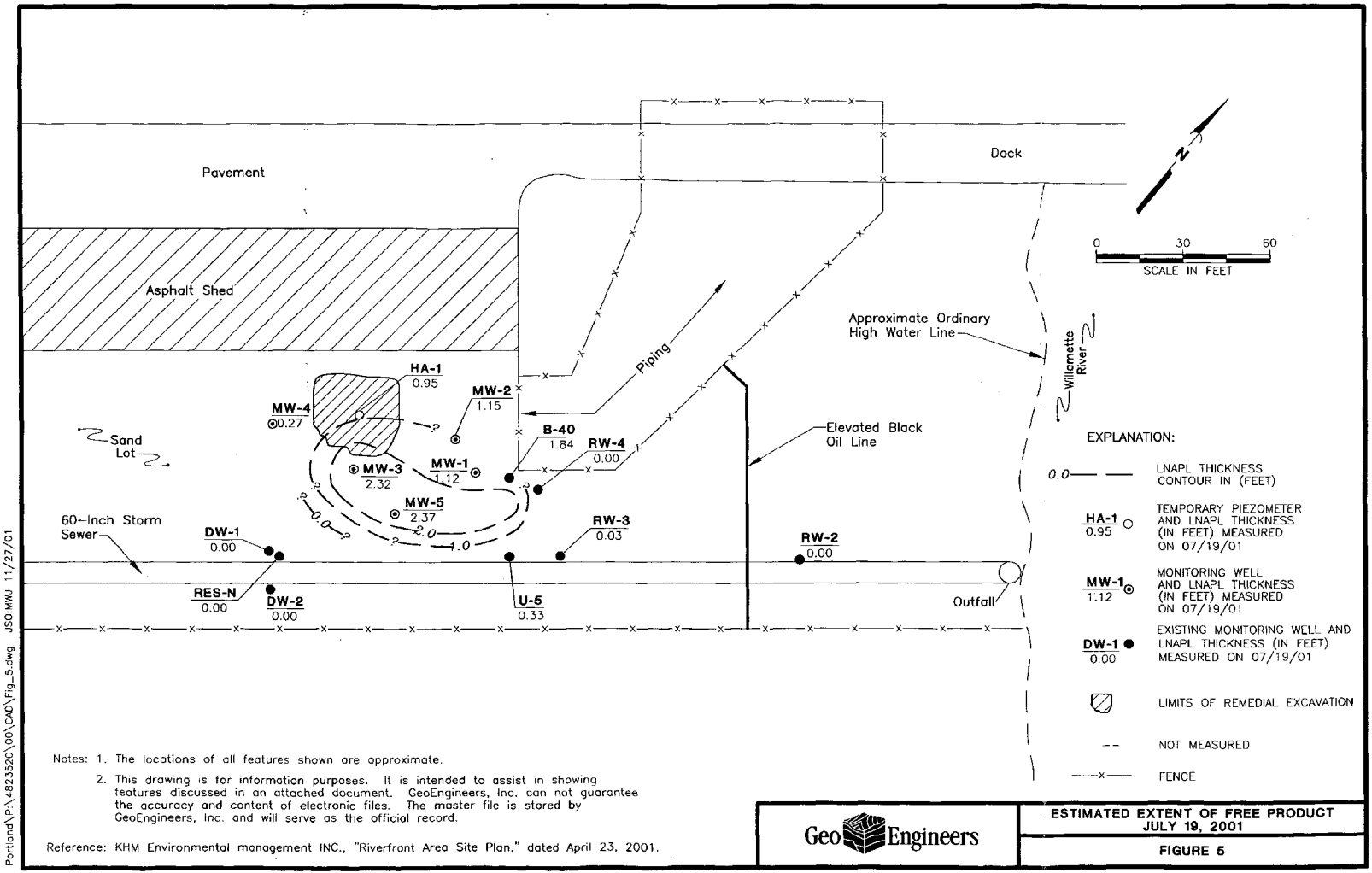
ESTIMATED EXTENT OF LNAPL JULY 13, 2001

FIGURE 4

Portland\P:\4823520\00\CAD\Fig_4.dwg JSO:MWJ 11/27/01

COP0015632



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record.

Reference: KHM Environmental management INC., "Riverfront Area Site Plan," dated April 23, 2001.

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ESTIMATED EXTENT OF FREE PRODUCT JULY 19, 2001

FIGURE 5

Portland\P:\4823520\00\CAD\Fig_5.dwg JSO:MWJ 11/27/01

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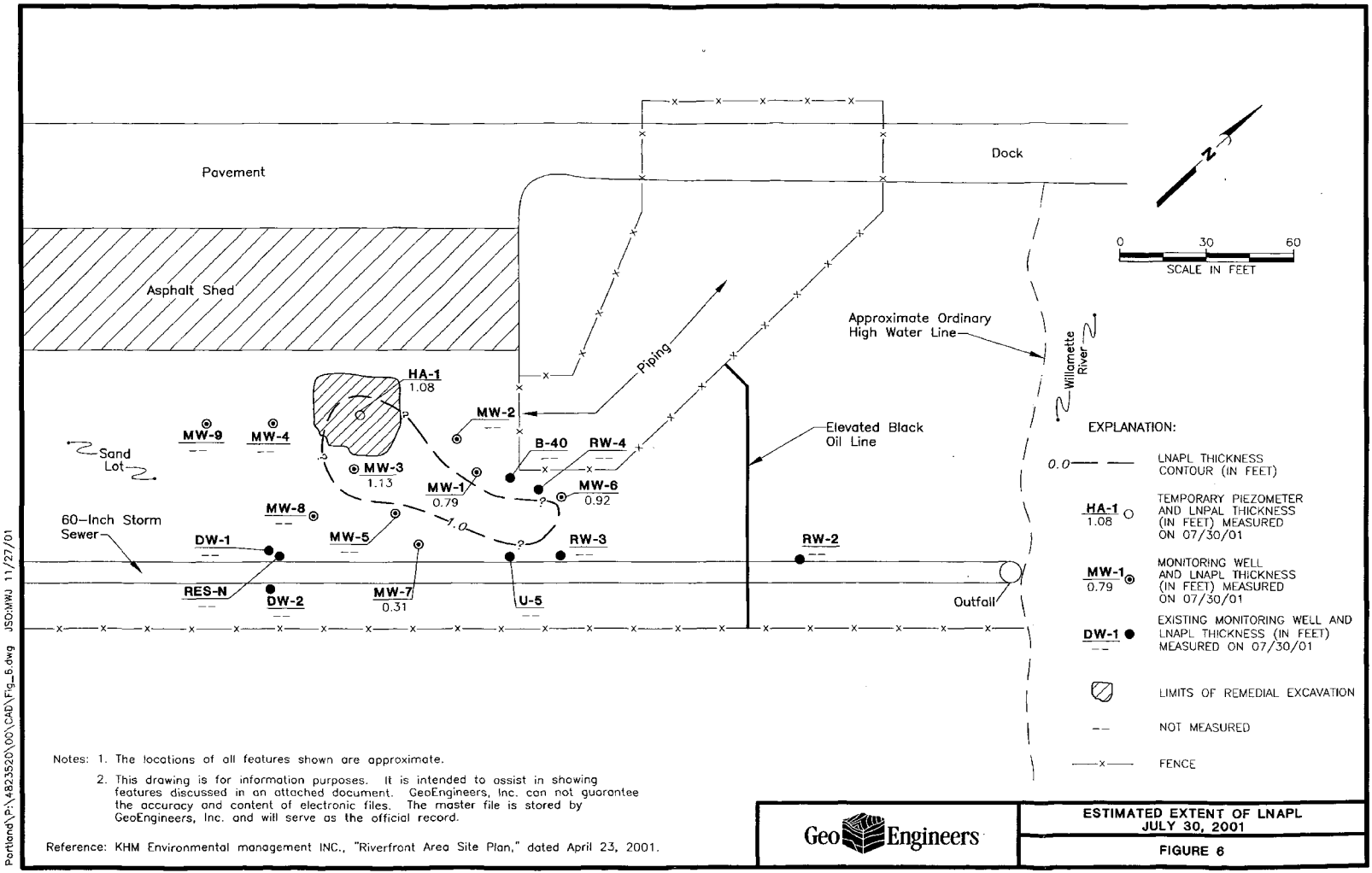

Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record.

Reference: KHM Environmental management INC., "Riverfront Area Site Plan," dated April 23, 2001.

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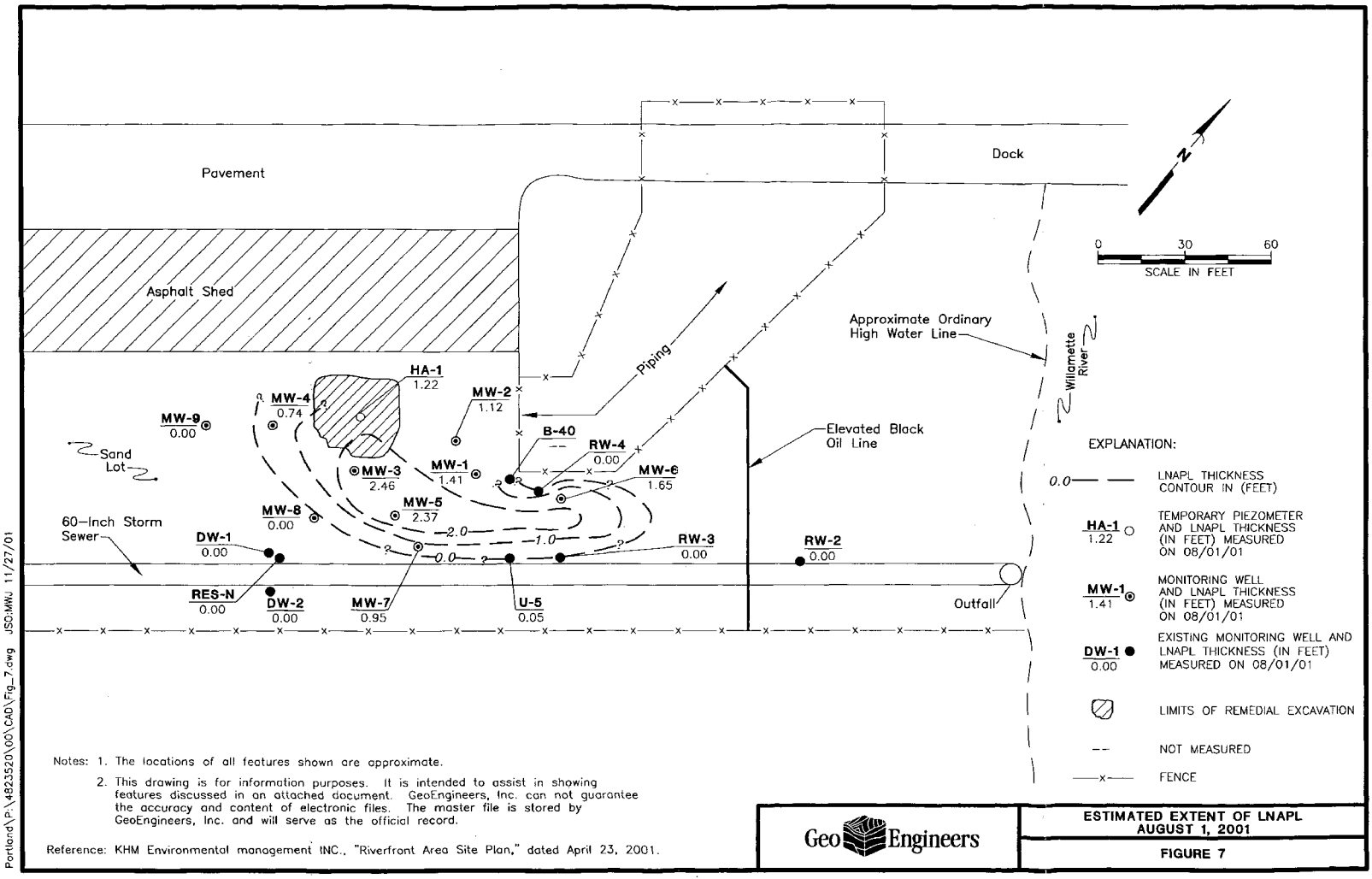
ESTIMATED EXTENT OF LNAPL JULY 30, 2001

FIGURE 6

Portland\P:\4823520\00\CAD\Fig_6.dwg JSD:MWJ 11/27/01

COP0015634



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record.

Reference: KHM Environmental management INC., "Riverfront Area Site Plan," dated April 23, 2001.

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ESTIMATED EXTENT OF LNAPL AUGUST 1, 2001

FIGURE 7

Portland\P:\4823520\00\CAD\Fig_7.dwg JSG:MWJ 11/27/01

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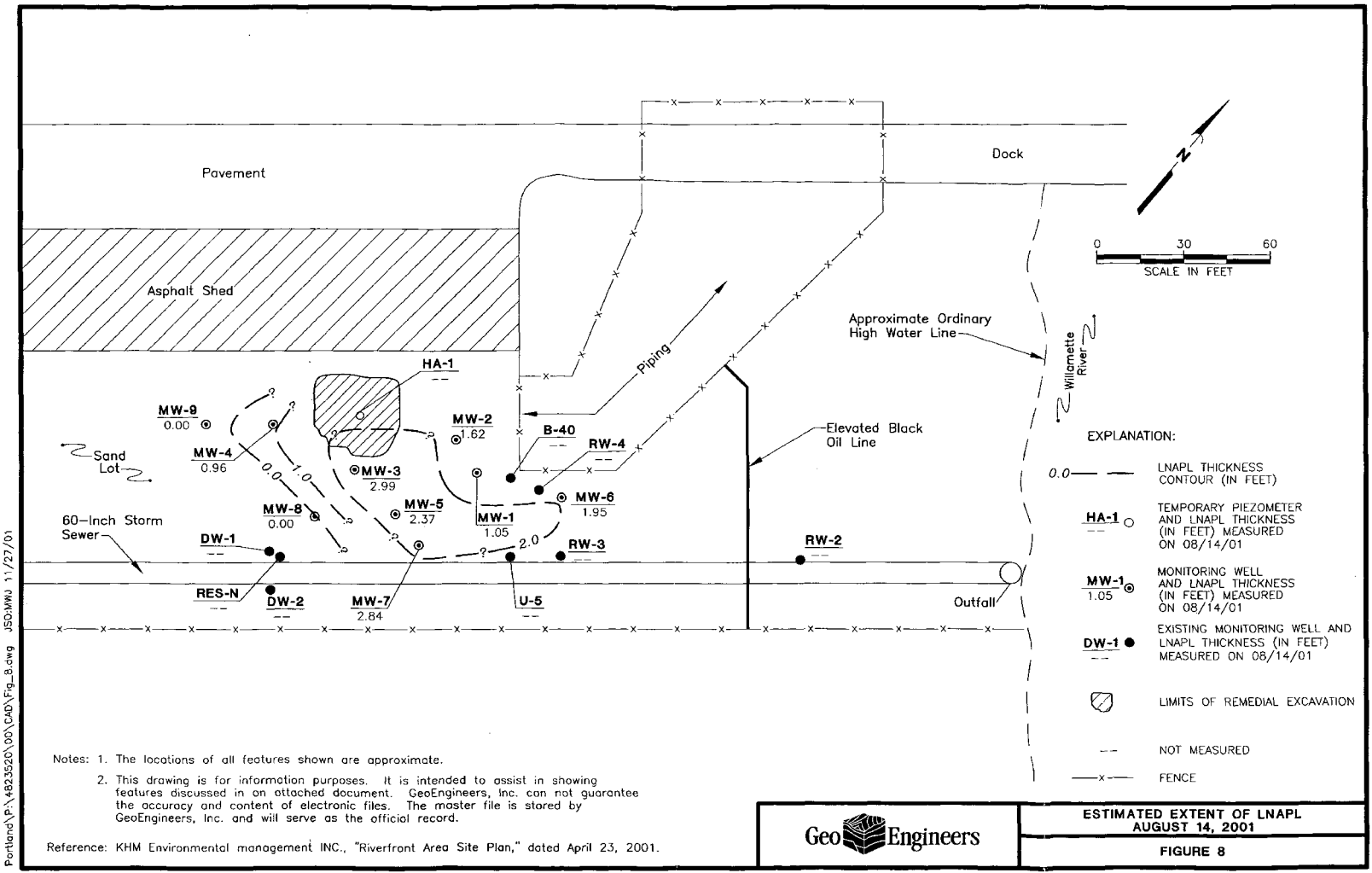

Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record.

Reference: KHM Environmental management INC., "Riverfront Area Site Plan," dated April 23, 2001.

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ESTIMATED EXTENT OF LNAPL AUGUST 14, 2001

FIGURE 8

P:\Portland\4823520\00\CAD\Fig_8.dwg JSO:MWJ 1/27/01

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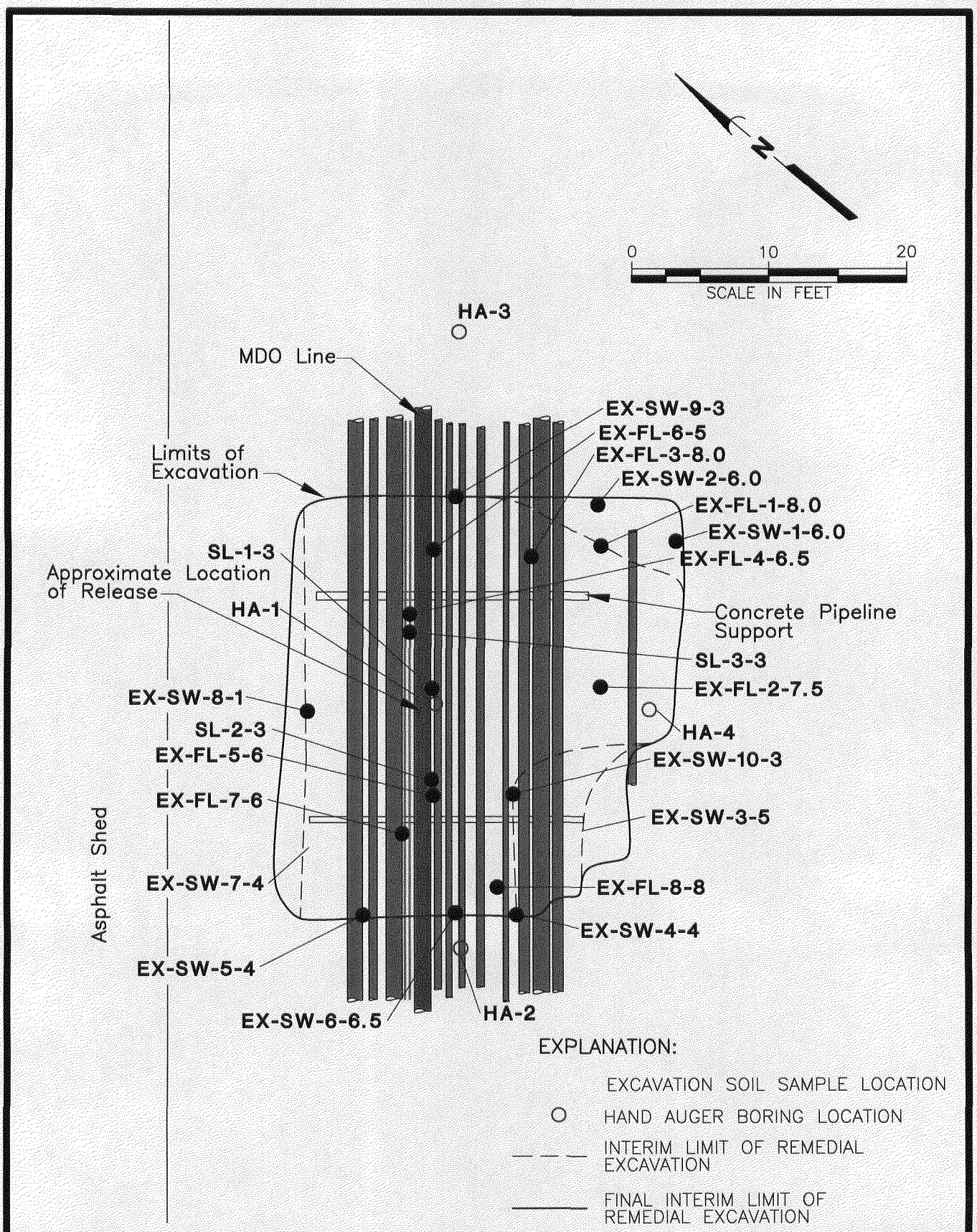

Note: The location of all features shown are approximate.
Reference: Drawing created from sketch provided by GeoEngineers' personnel.

Portland\P:\4823520\00\CAD\Fig_9.dwg JKH:MWJ 10/31/01

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LIMITS OF REMEDIAL EXCAVATIONS AND LOCATIONS OF SOIL SAMPLES

FIGURE 9

ATTACHMENT A

ATTACHMENT A

FIELD EXPLORATION PROGRAM

GENERAL

GeoEngineers conducted delineation assessment activities at the Tosco Portland Terminal between June 25 and July 25, 2001. The delineation assessment activities consisted of the following:

- Thirteen discrete soil samples from the limits of the remedial excavation.
- Four hand-augered borings designated as HA-1 through HA-4.
- Nine direct-push soil borings designated GP-1 through GP-9.
- One temporary piezometer installed in HA-1.
- Nine monitoring wells designated MW-1 through MW-9 (installed in direct-push borings GP-1 through GP-9).
- Monitoring and sampling LNAPL in select monitoring wells.

The hand-augered and direct-push borings were advanced to depths ranging between 16 and 28 feet bgs. GeoEngineers personnel evaluated and classified soils encountered and prepared a detailed log of each boring. Soils encountered were classified visually in general accordance with American Society for Testing and Materials (ASTM) D 2488-90, as described in Figure A-1. An explanation of the boring log symbols is presented in Figure A-2. The boring logs are presented as Figures A-3 through A-15. GeoEngineers personnel also performed field screening and collected soil samples for chemical analysis.

FIELD SCREENING OF SOIL SAMPLES

A GeoEngineers representative conducted field screening of soil samples obtained from the borings. The field screening results were used to aid in the selection of soil samples for laboratory analysis. The screening methods used during sampling activities included: (1) visual screening; (2) water sheen screening; and (3) headspace vapor screening.

Visual screening consists of inspecting the soil for stains indicative of petroleum-related contamination. Visual screening is generally more effective when contamination is related to heavy petroleum hydrocarbons, such as motor oil, or when hydrocarbon concentrations are relatively high. Water sheen screening and headspace screening are more sensitive methods that have been effective in detecting contamination at concentrations less than regulatory cleanup guidelines. Sheen screening and headspace vapor screening are more sensitive methods that have been effective in detecting contamination at concentrations less than regulatory cleanup levels. Field screening results are site specific. The effectiveness of field screening varies with temperature, moisture content, organic content, soil type, and age of the contaminant. The presence or absence of a sheen or headspace vapors does not necessarily indicate the presence or absence of petroleum hydrocarbons.

COP0015639

Water sheen screening involves placing soil in water and observing the water surface for signs of sheen. Sheen classifications are as follows:

No Sheen (NS)	No visible sheen on the water surface;
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly. Natural organic matter in the soil may produce a slight sheen;
Moderate Sheen (MS)	Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on water surface; and
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening involves placing a soil sample in a plastic bag. Air is captured in the bag, and the bag is shaken to expose the soil to the air trapped in the bag. The probe of a Bacharach TLV Sniffer is inserted into the bag, and the TLV Sniffer measures the concentrations of combustible vapor in parts per million (ppm). The TLV Sniffer is calibrated to hexane. The TLV Sniffer is designed to quantify combustible gas concentrations in the range between 100 ppm and 10,000 ppm in this application.

Field screening results are site- and boring-specific. The results may vary with temperature, soil moisture content, soil type, and type of contaminant.

MONITORING WELL CONSTRUCTION

Soil borings GP-1 through GP-9 were completed as monitoring wells MW-1 through MW-9, respectively. The wells were constructed using 1-inch-diameter, Schedule 40 polyvinyl chloride (PVC). The lower portion of the PVC pipe consisted of 0.02-inch slot width screen to allow entry of water, floating hydrocarbons and hydrocarbon vapors into the well casings. A rubber end cap was placed on the bottom of each monitoring well casing. The annulus of each monitoring well was filled with medium sand backfill from the bottom of the well to approximately 2 feet above the well screen. Hydrated bentonite chips were placed on top of the sand backfill to seal the well. Flush-mounted aluminum monuments were set in concrete to protect the monitoring wellheads. Watertight locking caps were installed on the top of the well casings. Monitoring well construction details are shown in Figures A-7 through A-15.

LNAPL MEASUREMENTS

The presence of LNAPL was measured in the newly installed monitoring wells on July 11, July 13, July 19, July 30, August 1 and August 14, 2001. LNAPL was also measured in existing wells RW-3, B-40 and U-5 one or more times between July 11 and August 14, 2001. LNAPL was measured with an electronic water level indicator and product paste or a Solinst oil/water interface probe to the nearest 0.01 foot. The probes were cleaned with a Liquinox wash and distilled water rinse prior to their use in each well. The LNAPL thicknesses measured in the monitoring wells are summarized in Table 3.

COP0015640

LNAPL SAMPLING PROGRAM

LNAPL samples were obtained from monitoring wells MW-1, MW-3, MW-6, MW-7 and HA-1 on July 30, 2001. The LNAPL samples were obtained from the monitoring wells using disposable polyethylene bailers. The LNAPL samples were transferred to laboratory-supplied 8-ounce jars and were kept cool during transport to the testing laboratory. Chain-of-custody procedures were followed during sample transport. The laboratory reports for the LNAPL samples are provided in Attachment B.

COP0015641

SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE GRAINED SOILS More Than 50% Retained on No. 200 Sieve	GRAVEL More Than 50% of Coarse Fraction Retained on No. 4 Sieve	CLEAN GRAVEL	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND More Than 50% of Coarse Fraction Passes No. 4 Sieve	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY-GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE GRAINED SOILS More Than 50% Passes No. 200 Sieve	SILT AND CLAY Liquid Limit Less Than 50	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY Liquid Limit 50 or More	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS			PT	PEAT

NOTES:

1. Field classification is based on visual examination of soil in general accordance with ASTM D2488-93.
2. Soil classification using laboratory tests is in general accordance with ASTM D2487-98.
3. Descriptions of soil density or consistency are based on interpretation of blow count data, visual appearance of soils, and/or test data.

SOIL MOISTURE MODIFIERS:

Dry - Absence of moisture, dusty, dry to the touch

Moist - Damp, but no visible water

Wet - Visible free water or saturated, usually soil is obtained from below water table

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SOIL CLASSIFICATION SYSTEM

FIGURE A-1

f:\soila-1.doc

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LABORATORY TESTS:

CA Chemical Analysis

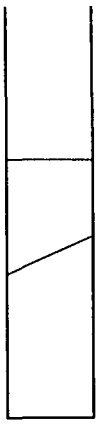
FIELD SCREENING TESTS:

Headspace vapor concentration data given in parts per million

Sheen classification system:

NS No Visible Sheen
SS Slight Sheen
MS Moderate Sheen
HS Heavy Sheen
-- Not Tested

SOIL GRAPH:



SM Soil Group Symbol (See Note 2)

Distinct Contact Between Soil Strata

Gradual or Approximate Location of Change Between Soil Strata

Water Level

Bottom of Boring

SAMPLE DATA:

Geoprobe samples were obtained—using hydraulically driven direct—push methods to a sample length of 4 feet.

Location of relatively undisturbed sample obtained using an acrylic sampling tube

Location of sampling attempt with no recovery

Location of disturbed sample

Location of grab sample

NOTES:

1. The reader must refer to the discussion in the report text, the Key to Boring Log Symbols and the exploration logs for a proper understanding of subsurface conditions.
2. Soil classification system is summarized in Figure A—1.

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KEY TO EXPLORATION LOG SYMBOLS

FIGURE A-2

Portland\P:\4823026\04\CAD\k2borlg1 09/20/01

COP0015643

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	06/25/01	Logged By	Jason S. O'Donnell (JSO)	Contractor	N/A
Drill Method	Hand Auger	Equipment	Hand Tools	Drill Bit	N/A
Sample Method	Grab	Hammer Data	N/A	X-coordinate:	Not Determined
				Y-coordinate:	Not Determined
Total Depth (ft)	18.5	Elevation (ft)	Not Measured	Datum:	Not Determined
				System:	Not Determined

DEPTH IN FEET	% Recovery	Sample No.	Blow Count	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0						X	Remedial excavation from 0.0 to 6.0 feet				0
5	100	1				SP	Dark brown-black fine sand (dry) (fill) (petroleum-like odor)	300	MS	HA-1-6 CA	5
10	100	2					Visible product observed between 10.0 and 11.0 feet	400	–	HA-1-10 CA	10
15	100	3						400	MS	HA-1-15	15
	100	4					Visible product observed at 17.0 feet	700	–	HA-1-17 CA	
20							Boring completed at 18.5 feet on 06/21/01 Piezometer installed to 18.5 feet LNAPL measured at 16.5 feet on 06/21/01				20
25											25

Note: See Figure A-2 for explanation of symbols

GEI ENVIRONMENTAL BORING LOG 4823520H.GPJ GEI_CORP.GDT 10/30/01 4823-520-00

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LOG OF HAND AUGER BORING HA-1

FIGURE A-3

COP0015644

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	06/25/01	Logged By	Jason S. O'Donnell (JSO)	Contractor	N/A
Drill Method	Hand Auger	Equipment	Hand Tools	Drill Bit	N/A
Sample Method	Grab	Hammer Data	N/A	X-coordinate:	Not Determined
				Y-coordinate:	Not Determined
Total Depth (ft)	16	Elevation (ft)	Not Measured	Datum:	Not Determined
				System:	Not Determined

DEPTH IN FEET	% Recovery	Sample No.	Blow Count	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0						SP	Brown fine sand (dry) (fill) (slight petroleum-like odor)				0
5	100	1						150	SS	HA-2-4 CA	5
10	100	2					Grades to gray (petroleum-like odor)	200	MS	HA-2-10 CA	10
							Grades to brown				
15	100	3						150	SS	HA-2-15 CA	15
							Boring completed at 16.0 feet on 06/25/01 No ground water encountered				
20											20
25											25

Note: See Figure A-2 for explanation of symbols

GEI ENVIRONMENTAL BORING LOG 4823520H.GPJ GEI_CORP.GDT 11/1/01 4823-520-00

GeoEngineers

LOG OF HAND AUGER BORING HA-2

FIGURE A-4

COP0015645

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	06/25/01	Logged By	Jason S. O'Donnell (JSO)	Contractor	N/A
Drill Method	Hand Auger	Equipment	Hand Tools	Drill Bit	N/A
Sample Method	Grab	Hammer Data	N/A	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	16	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined

DEPTH IN FEET	% Recovery	Sample No.	Blow Count	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0						SP	Brown fine sand (dry) (fill)				0
5	100	1					Grades to moist	<100	SS	HA-3-5	5
10	100	2					Grades to gray	<100	SS	HA-3-10	10
15	100	3					(petroleum-like odor)	220	MS	HA-3-14	15
							Boring completed at 16.0 feet on 06/25/01 No ground water encountered				
20											20
25											25

Note: See Figure A-2 for explanation of symbols

GEI ENVIRONMENTAL BORING LOG 4823520H.GPJ GEI_CORP.GDT 11/1/01 4823-520-00

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LOG OF HAND AUGER BORING HA-3

FIGURE A-5

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	06/26/01	Logged By	Jason S. O'Donnell (JSO)	Contractor	N/A
Drill Method	Hand Auger	Equipment	Hand Tools	Drill Bit	N/A
Sample Method	Grab	Hammer Data	N/A	X-coordinate:	Not Determined
				Y-coordinate:	Not Determined
Total Depth (ft)	21	Elevation (ft)	Not Measured	Datum:	Not Determined
				System:	Not Determined

DEPTH IN FEET	% Recovery	Sample No.	Blow Count	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0						SP	Brown fine sand (dry) (fill)				0
							Grades with silt layers between 1.5 feet and 5.0 feet (moist) (fill)				
5	100	1						<100	SS	HA-4-5	5
10	100	2						<100	SS	HA-4-10	10
15	100	3						200	MS	HA-4-15	15
20	100	4					Visible product observed at 20.0 feet	700	MS	HA-4-20	20
							Boring completed at 21.0 feet on 06/26/01 No ground water encountered				
25											25

Note: See Figure A-2 for explanation of symbols

GEI ENVIRONMENTAL BORING LOG 4823520H.GPJ GEI_CORP.GDT 11/1/01 4823-520-00

Geo Engineers

LOG OF HAND AUGER BORING HA-4

FIGURE A-6

COP0015647

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	07/11/01	Logged By	Kyle R. Sattler (KRS)	Contractor	GeoTech Explorations, Inc.
Drill Method	Geoprobe Direct Push	Equipment	Geoprobe Model 5400	Drill Bit	2.5" OD, 4' Macro Sampler
Sample Method	Discrete Piston Sampler	Hammer Data	Hydraulic Percussion	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	26	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined
Total Well Depth (ft)	26.0	Monument Elevation (ft) Stickup (ft)	Not Determined Not Determined	Casing Elevation (ft) Stickup (ft)	Not Determined Not Determined

DEPTH IN FEET	WELL SCHEMATIC	Sample No.	Blows per foot	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0	Aluminum surface monument and concrete					SP	Dark brown fine to medium sand (loose, dry) (fill) (no odor)				0
5	Bentonite seal										5
							Grades to moist				
10	1-inch, Schedule 40 PVC casing	1						<100	NS	GP-1 (9-12) CA	10
							Becomes gray in color (slight diesel-like odor) Grades to dark brown				
		2					(loose to medium dense) (slight diesel-like odor)	<100	NS	GP-1 (13-16)	
15	Medium sand backfill										15
		3						200	SS	GP-1 (17-20)	
							Grades to gray (moderate diesel-like odor) ▼ Becomes wet				
20	1-inch, Schedule 40 PVC screen, 0.020-inch slot width	4						700	MS		20
										GP-1 (21-24) CA	
						ML	Visible product at 22.0 feet Gray silt (medium stiff, moist) (moderate diesel-like odor)				
25	End cap Base of well at 26.0 feet										25
							Boring completed at 26.0 feet on 07/11/01 Ground water encountered at approximately 19.5 feet during drilling				
30											30
35											35
40											40

Note: See Figure A-2 for explanation of symbols

GEI WELL LOG 4823520G.GPJ GEI_CORP.GDT 10/31/01 4823-520-00

Geo Engineers

LOG OF DIRECT-PUSH BORING GP-1 (MW-1)

FIGURE A-7

COP0015648

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	07/11/01	Logged By	Kyle R. Sattler (KRS)	Contractor	GeoTech Explorations, Inc.
Drill Method	Geoprobe Direct Push	Equipment	Geoprobe Model 5400	Drill Bit	2.5" OD, 4' Macro Sampler
Sample Method	Discrete Piston Sampler	Hammer Data	Hydraulic Percussion	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	27.5	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined
Total Well Depth (ft)	27.5	Monument Elevation (ft) Stickup (ft)	Not Determined Not Determined	Casing Elevation (ft) Stickup (ft)	Not Determined Not Determined

DEPTH IN FEET	WELL SCHEMATIC	Sample No.	Blows per foot	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0	Aluminum surface monument and concrete					GM	Brown silty sandy gravel (loose, dry) (fill) (no odor)				0
						SP	Brown fine to medium sand (loose, dry) (fill) (no odor)				
5	Bentonite seal										5
						SP	Dark brown fine to medium sand (medium dense, dry) (fill) (no odor)	<100	NS	GP-2 (9-12) CA	
10	1-inch, Schedule 40 PVC casing	1									10
		2					Grades to dark brown and dark gray mottled	100	NS	GP-2 (13-16)	
15	Medium sand backfill						(slight diesel-like odor)				15
		3					Grades to gray, becomes moist (moderate diesel-like odor) ▼ Becomes wet	800	MS	GP-2 (17-20)	
20	1-inch, Schedule 40 PVC screen, 0.020-inch slot width	4					(moderate diesel-like odor)	1100	MS	GP-2 (21-24) CA	20
							Visible product between 22.0 and 23.5 feet				
25						ML	Gray silt (medium stiff, moist) (moderate diesel-like odor)				25
	End cap Base of well at 27.5 feet						Boring completed at 27.5 feet on 07/11/01 Ground water encountered at approximately 18.0 feet during drilling				
30											30
35											35
40											40

Note: See Figure A-2 for explanation of symbols

GEI WELL LOG 4823520G.GPJ GEI_CORP.GDT 10/31/01 4823-520-00

GeoEngineers

LOG OF DIRECT-PUSH BORING GP-2 (MW-2)

FIGURE A-8

COP0015649

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	07/11/01	Logged By	Kyle R. Sattler (KRS)	Contractor	GeoTech Explorations, Inc.
Drill Method	Geoprobe Direct Push	Equipment	Geoprobe Model 5400	Drill Bit	2.5" OD, 4' Macro Sampler
Sample Method	Discrete Piston Sampler	Hammer Data	Hydraulic Percussion	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	26	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined
Total Well Depth (ft)	26.0	Monument Elevation (ft) Stickup (ft)	Not Determined Not Determined	Casing Elevation (ft) Stickup (ft)	Not Determined Not Determined

DEPTH IN FEET	WELL SCHEMATIC	Sample No.	Blows per foot	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0	Aluminum surface monument and concrete					SP	Brown to dark brown fine to medium sand (loose, dry) (fill) (no odor)				0
5	Bentonite seal										5
							Grades to dark gray				
10	1-inch, Schedule 40 PVC casing	1						<100	NS	GP-3 (9-12) CA	10
15	Medium sand backfill	2					(slight diesel-like odor)	110	NS	GP-3 (14-16)	15
		3					Grades to brown (no odor)	400	SS	GP-3 (17-20)	
20	1-inch, Schedule 40 PVC screen, 0.020-inch slot width	4					Grades to gray (moderate diesel-like odor) (wet) (moderate diesel-like odor) ▼	900	MS	GP-3 (21-24) CA	20
25	End cap Base of well at 26.0 feet						Visible product between 21.5 and 24.0 feet				25
							Boring completed at 26.0 feet on 07/11/01				
							Ground water encountered at approximately 20.0 feet during drilling				
30											30
35											35
40											40

Note: See Figure A-2 for explanation of symbols

GEI WELL LOG 4823520G.GPJ GEI_CORP.GDT 10/31/01 4823-520-00

GeoEngineers

LOG OF DIRECT-PUSH BORING GP-3 (MW-3)

FIGURE A-9

COP0015650

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	07/11/01	Logged By	Kyle R. Sattler (KRS)	Contractor	GeoTech Explorations, Inc.
Drill Method	Geoprobe Direct Push	Equipment	Geoprobe Model 5400	Drill Bit	2.5" OD, 4' Macro Sampler
Sample Method	Discrete Piston Sampler	Hammer Data	Hydraulic Percussion	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	27	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined
Total Well Depth (ft)	27.0	Monument Elevation (ft) Stickup (ft)	Not Determined Not Determined	Casing Elevation (ft) Stickup (ft)	Not Determined Not Determined

DEPTH IN FEET	WELL SCHEMATIC	Sample No.	Blows per foot	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0	Aluminum surface monument and concrete					SP	Dark brown fine to medium sand (loose, dry) (fill) (no odor)				0
5	Bentonite seal										5
10	1-inch, Schedule 40 PVC casing	1						<100	NS	GP-4 (9-12) CA	10
		2						<100	NS	GP-4 (13-16)	
15	Medium sand backfill										15
		3					Grades to gray (diesel-like odor)	100	SS	GP-4 (18-20)	
20	1-inch, Schedule 40 PVC screen, 0.020-inch slot width	4					(moderate diesel-like odor)	200	SS	GP-4 (21-24) CA	20
25	End cap Base of well at 27.0 feet						Boring completed at 27.0 feet on 07/11/01 Ground water not encountered during drilling				25
30											30
35											35
40											40

Note: See Figure A-2 for explanation of symbols

GEI WELL LOG 4823520G.GPJ GEI_CORP.GDT 10/31/01 4823-520-00

Geo Engineers

LOG OF DIRECT-PUSH BORING GP-4 (MW-4)

FIGURE A-10

COP0015651

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	07/11/01	Logged By	Kyle R. Sattler (KRS)	Contractor	GeoTech Explorations, Inc.
Drill Method	Geoprobe Direct Push	Equipment	Geoprobe Model 5400	Drill Bit	2.5" OD, 4' Macro Sampler
Sample Method	Discrete Piston Sampler	Hammer Data	Hydraulic Percussion	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	26	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined
Total Well Depth (ft)	26.0	Monument Elevation (ft) Stickup (ft)	Not Determined Not Determined	Casing Elevation (ft) Stickup (ft)	Not Determined Not Determined

DEPTH IN FEET	WELL SCHEMATIC	Sample No.	Blows per foot	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0	Aluminum surface monument and concrete					GM	Brown silty sandy gravel (medium dense, dry) (fill)				0
						SP	Dark brown fine to medium sand (loose, dry) (fill) (no odor)				
5	Bentonite seal										5
10	1-inch, Schedule 40 PVC casing	1						<100	NS	GP-5 (9-12) CA	10
		2						<100	NS	GP-5 (13-16)	
15	Medium sand backfill						Grades to gray and brown mottled Grades to brown				15
20	1-inch, Schedule 40 PVC screen, 0.020-inch slot width	3					Grades to gray (slight diesel-like odor) ▼ Grades to medium dense and wet (moderate diesel-like odor)	–	–	GP-5 (19-20)	20
		4						150	SS	GP-5 (22-24) CA	
25	End cap Base of well at 26.0 feet					ML	Gray silt (medium stiff, moist) (diesel-like odor)				25
							Boring completed at 26.0 feet on 07/11/01 Ground water encountered at approximately 20.0 feet during drilling				
30											30
35											35
40											40

Note: See Figure A-2 for explanation of symbols

GEI WELL LOG 4823520G.GPJ GEI_CORP.GDT 10/31/01 4823-520-00

Geo Engineers

LOG OF DIRECT-PUSH BORING GP-5 (MW-5)

FIGURE A-11

COP0015652

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	07/25/01	Logged By	Kyle R. Sattler (KRS)	Contractor	GeoTech Explorations, Inc.
Drill Method	Geoprobe Direct Push	Equipment	Geoprobe Model 5400	Drill Bit	2.5" OD, 4' Macro Sampler
Sample Method	Discrete Piston Sampler	Hammer Data	Hydraulic Percussion	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	28	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined
Total Well Depth (ft)	28.0	Monument Elevation (ft) Stickup (ft)	Not Determined Not Determined	Casing Elevation (ft) Stickup (ft)	Not Determined Not Determined

DEPTH IN FEET	WELL SCHEMATIC	Sample No.	Blows per foot	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0	Aluminum surface monument and concrete					SP	Brown to dark brown fine to medium sand (loose, dry) (fill)				0
						SP	Grades with gravel (loose, dry) (fill) (no odor)				
5	Bentonite seal						Dark brown fine to medium sand (loose, dry) (fill) (no odor)				5
10	1-inch, Schedule 40 PVC casing	1					Grades with occasional gravel (loose, dry) (fill) (no odor)	<100	NS	GP-6 (10-12)	10
		2						<100	NS	GP-6 (12-16)	
15	Medium sand backfill						Grades to moist				15
		3					Grades to bluish gray (moderate diesel-like odor)	1000	MS	GP-6 (18-20)	
20	1-inch, Schedule 40 PVC screen, 0.020-inch slot width						Becomes wet ▼				20
		4						400	MS	GP-6 (22-24)	
25						ML	Bluish gray silt (native) (soft, moist) (no odor)				25
		5						300	NS	GP-6 (26-28)	
	End cap Base of well at 28.0 feet						Boring completed at 28.0 feet on 07/25/01 Ground water encountered at approximately 20.0 feet during drilling				
30											30
35											35
40											40

Note: See Figure A-2 for explanation of symbols

GEI WELL LOG 4823520G.GPJ GEI_CORP.GDT 10/31/01 4823-520-00

Geo Engineers

LOG OF DIRECT-PUSH BORING GP-6 (MW-6)

FIGURE A-12

COP0015653

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	07/25/01	Logged By	Kyle R. Sattler (KRS)	Contractor	GeoTech Explorations, Inc.
Drill Method	Geoprobe Direct Push	Equipment	Geoprobe Model 5400	Drill Bit	2.5" OD, 4' Macro Sampler
Sample Method	Discrete Piston Sampler	Hammer Data	Hydraulic Percussion	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	26	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined
Total Well Depth (ft)	26.0	Monument Elevation (ft) Stickup (ft)	Not Determined Not Determined	Casing Elevation (ft) Stickup (ft)	Not Determined Not Determined

DEPTH IN FEET	WELL SCHEMATIC	Sample No.	Blows per foot	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0	Aluminum surface monument and concrete					SP	Brown to dark brown fine to medium sand (loose, dry) (fill) (no odor)				0
5	Bentonite seal	1					Grades with occasional gravel between 3.0 and 9.0 feet	100	NS	GP-7 (5-8)	5
10	1-inch, Schedule 40 PVC casing	2						150	NS	GP-7 (9-12)	10
15	Medium sand backfill	3					(solvent-like odor)	500	MS	GP-7 (14-16)	15
		4					Grades to bluish gray (moderate diesel-like odor)	–	MS	GP-7 (18-20)	
20	1-inch, Schedule 40 PVC screen, 0.020-inch slot width	5					Becomes wet (fill) (moderate diesel-like odor)	600	MS	GP-7 (22-24)	20
25	End cap Base of well at 26.0 feet					ML	Bluish gray silt (soft, wet) (moderate diesel-like odor)				25
							Boring completed at 26.0 feet on 07/25/01 Ground water encountered at approximately 20.0 feet during drilling				
30											30
35											35
40											40

Note: See Figure A-2 for explanation of symbols

GEI WELL LOG 4823520G.GPJ GEI_CORP.GDT 10/31/01 4823-520-00

GeoEngineers

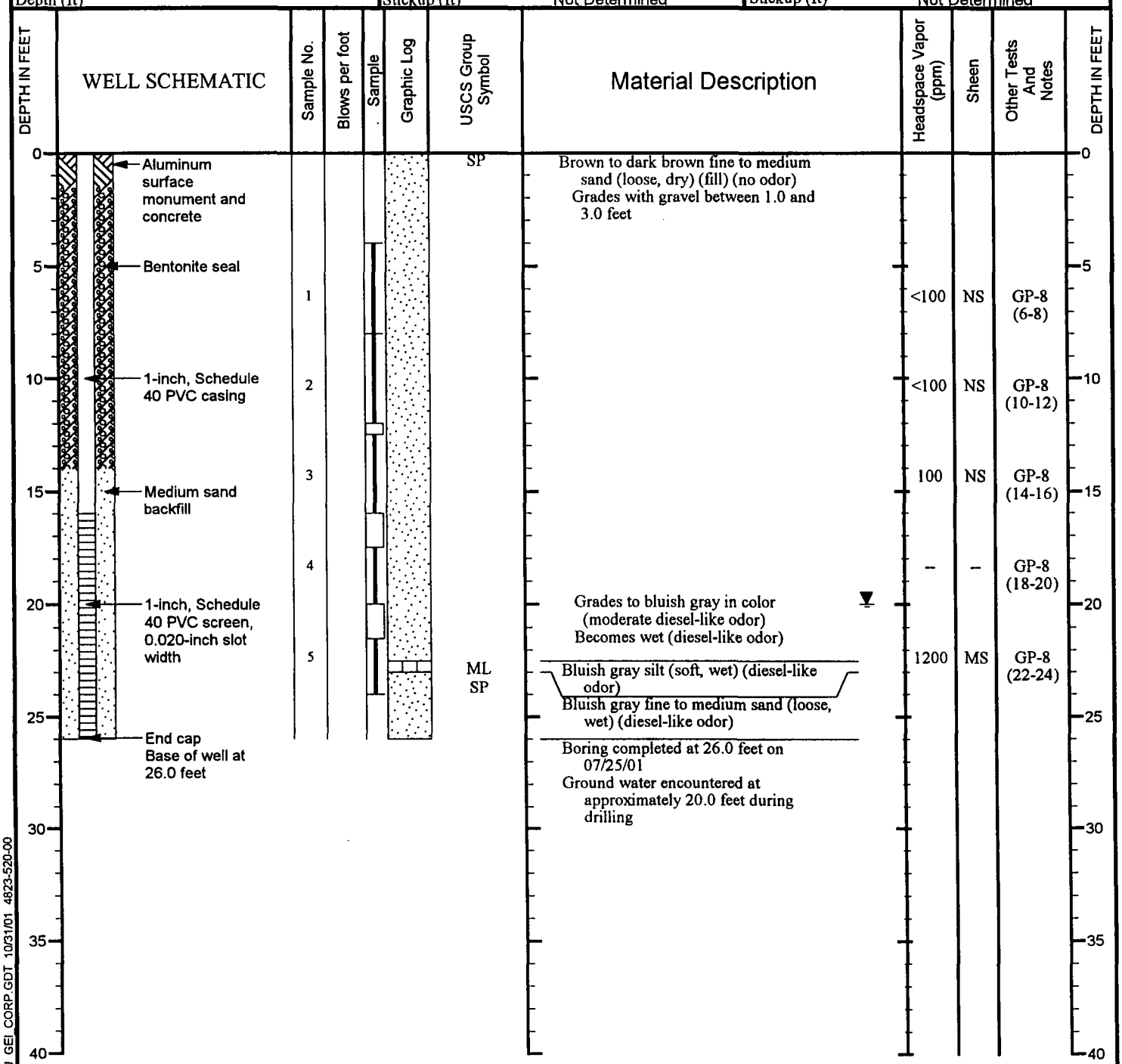
LOG OF DIRECT-PUSH BORING GP-7 (MW-7)

FIGURE A-13

COP0015654

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	07/25/01	Logged By	Kyle R. Sattler (KRS)	Contractor	GeoTech Explorations, Inc.
Drill Method	Geoprobe Direct Push	Equipment	Geoprobe Model 5400	Drill Bit	2.5" OD, 4' Macro Sampler
Sample Method	Discrete Piston Sampler	Hammer Data	Hydraulic Percussion	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	26	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined
Total Well Depth (ft)	26.0	Monument Elevation (ft) Stickup (ft)	Not Determined Not Determined	Casing Elevation (ft) Stickup (ft)	Not Determined Not Determined



Note: See Figure A-2 for explanation of symbols

GEI WELL LOG 4823520G.GPJ GEI_CORP.GDT 10/31/01 4823-520-00

Geo Engineers

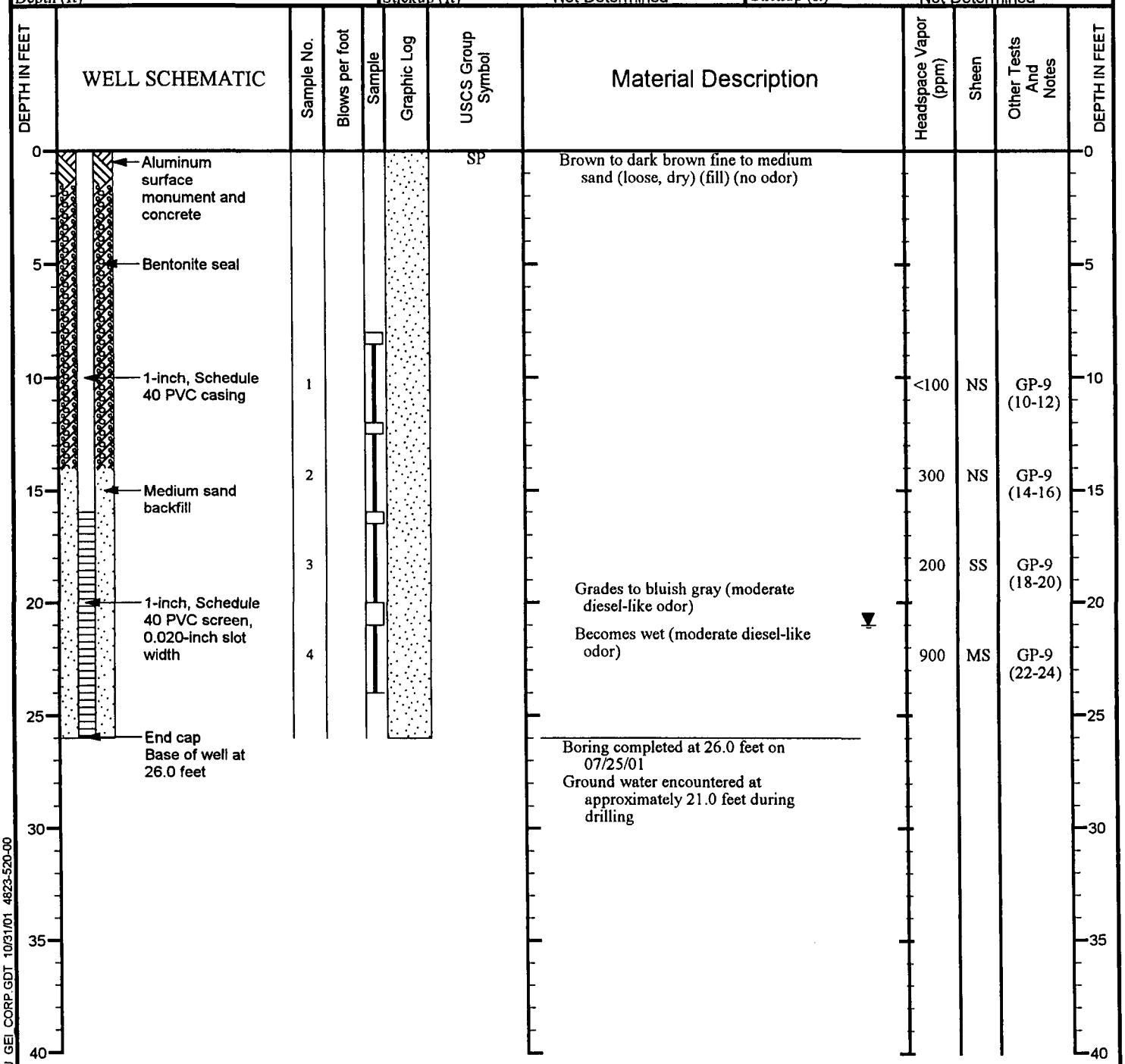
LOG OF DIRECT-PUSH BORING GP-8 (MW-8)

FIGURE A-14

COP0015655

Project	Job Number	Location
Tosco Refining Company	4823-520-00	Portland, Oregon

Date Drilled	07/25/01	Logged By	Kyle R. Sattler (KRS)	Contractor	GeoTech Explorations, Inc.
Drill Method	Geoprobe Direct Push	Equipment	Geoprobe Model 5400	Drill Bit	2.5" OD, 4' Macro Sampler
Sample Method	Discrete Piston Sampler	Hammer Data	Hydraulic Percussion	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	26	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined
Total Well Depth (ft)	26.0	Monument Elevation (ft) Stickup (ft)	Not Determined Not Determined	Casing Elevation (ft) Stickup (ft)	Not Determined Not Determined



Note: See Figure A-2 for explanation of symbols

GEI WELL LOG 4823520G.GPJ GEI_CORP.GDT 10/31/01 4823-520-00

Geo Engineers

LOG OF DIRECT-PUSH BORING GP-9 (MW-9)

FIGURE A-15

COP0015656

ATTACHMENT B

ATTACHMENT B

CHEMICAL ANALYTICAL DATA

SAMPLES

Chain-of-custody procedures were followed during the transport of the field samples to the accredited analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results and quality control records are included in this attachment.

ANALYTICAL DATA REVIEW

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory reports. Any data quality exceptions documented by the accredited laboratory were reviewed by GeoEngineers and are addressed in the data quality exception section of this attachment.

ANALYTICAL DATA REVIEW SUMMARY

The following data quality exceptions were noted in the laboratory reports:

- The primary and/or the secondary surrogate recoveries were not available for samples HA-1-6.0, HA-1-10, HA-1-17, HA-2-10, HA-4-20, SL-1-3, SL-2-3, SL-3-3, EX-FL-3-8.0, the laboratory duplicate sample 1060780-DUP1 and the matrix spike 1060780-MS1 in the Northwest Method NWTPH-Gx and EPA Method 8021B analysis due to sample dilution required from high analyte concentration and/or matrix interferences.
- The primary surrogate recoveries for samples HA-2-4 and HA-3-14 could not be accurately quantified during the NWTPH-Gx and EPA Method 8021B analysis due to interference from co-eluting organic compounds present in the sample.
- The surrogate recoveries could not be calculated for the laboratory duplicate samples 1060780-DUP1 and 1070833-DUP2, matrix spike sample 1060780-MS-1 and the matrix spike duplicate sample 106078-MSD1 during the NWTPH-Gx and EPA Method 8021B analysis due to sample dilution required for the analysis and/or matrix interference.
- The surrogate recovery could not be accurately calculated for the laboratory control sample 1070833-BS1 during the NWTPH-Gx and EPA Method 8021B analysis due to interference from co-eluting organic compounds present in the sample.
- The reporting limits for diesel- and oil-range hydrocarbons analytes were raised for samples HA-1-6.0, HA-1-10, HA-1-17, HA-2-10, HA-2-15, HA-3-14, HA-4-15, HA-4-20, SL-1-3, SL-2-3 and SL-3-3 during the NWTPH-Dx Method analysis due to the high analyte concentration present in the sample.

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- The surrogate recoveries could not be calculated for samples HA-1-10 and SL-1-3 during the NWTPH-Dx Method analysis due to high analyte concentration.
- The surrogate recoveries were not available for samples HA-1-17, HA-3-14, HA-4-20, SL-2-3, SL-3-3, the laboratory duplicate 1060825-DUP1, matrix spike 1060825-MS1 and the matrix spike duplicate (1060825-MSD1) during the NWTPH-Dx Method analysis due to sample dilution required from high analyte concentration and/or matrix interference.
- The surrogate recoveries for laboratory duplicate samples 1060801-DUP1 and 1060801-DUP2 were not available during the hydrocarbon identification NW-TPH methodology analysis due to sample dilution required from high analyte concentration and/or matrix interference.
- The spike recovery, and/or relative percent difference (RPD) for one or more of the analytes for the laboratory Duplicate sample 1060801-DUP1 was outside of established control limits during the hydrocarbon identification NW-TPH methodology analysis due to nonhomogeneous sample matrix.
- The spike recovery, and/or RPD for one or more of the analytes for the matrix spike sample 1060780-MS1 and the matrix spike duplicate sample 1060780-MSD1 were outside of established control limits during the NWTPH-Gx Method and EPA Method 8021B analysis due to high concentrations of the analyte already present in the sample.
- The spike recovery, and/or RPD for one or more of the analytes for the matrix spike (1060825-MS1) and the matrix spike duplicate (1060825-MSD1) were outside of established control limits during the NWTPH-Gx Method and EPA Method 8021B analysis. Review of batch quality control indicates the recovery for these analytes does not represent an out-of-control condition for the batch.
- The reporting limits for the gasoline-, diesel- and oil-range hydrocarbon analytes were raised for samples SL-1-3, SL-2-3 and SL-3-3 during the hydrocarbon identification NW-TPH methodology analysis due to the high analyte concentration present in the sample.
- The surrogate recoveries could not be calculated for samples SL-1-3, SL-2-3, SL-3-3, the Outfall Oil sample and the laboratory duplicate sample 1071130-DUP2 during the hydrocarbon identification NW-TPH methodology analysis due to the high analyte concentration present in the sample.
- The surrogate recoveries could not be accurately quantified for the 3579-Fuel Oil sample and the 2783-Decant sample during the hydrocarbon identification NW-TPH methodology analysis due to interference from co-eluting organic compounds present in the sample.

Summary

Based on our review of the quality control data supplied by the laboratory, the data quality exceptions noted above do not significantly impact the sample results. Therefore, it is our opinion that the soil and ground water analytical data are of acceptable quality for their intended use.

COP0015659

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SL-1-3	P1F0709-01	Soil	06/21/01 08:30	06/22/01 17:25
SL-2-3	P1F0709-02	Soil	06/21/01 08:32	06/22/01 17:25
SL-3-3	P1F0709-03	Soil	06/22/01 12:40	06/22/01 17:25
Outfall Oil	P1F0709-04	Other wet	06/22/01 15:30	06/22/01 17:25
Source Oil	P1F0709-05	Other wet	06/22/01 15:05	06/22/01 17:25

COP0015660

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

Hydrocarbon Identification per NW-TPH Methodology

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SL-1-3 (P1F0709-01) Soil						Sampled: 06/21/01	Received: 06/22/01		
Gasoline Range Hydrocarbons	**DET**	400	mg/kg dry	20	NWTPH HCID	06/25/01	06/26/01	1060801	A-01a,R-02
Diesel Range Hydrocarbons	**DET**	1000	"	"	"	"	"	"	A-01a,R-02
Heavy Oil Range Hydrocarbons	**DET**	2000	"	"	"	"	"	"	A-01a,R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-12*
SL-2-3 (P1F0709-02) Soil						Sampled: 06/21/01	Received: 06/22/01		
Gasoline Range Hydrocarbons	**DET**	400	mg/kg dry	20	NWTPH HCID	06/25/01	06/26/01	1060801	A-01a,R-02
Diesel Range Hydrocarbons	**DET**	1000	"	"	"	"	"	"	A-01a,R-02
Heavy Oil Range Hydrocarbons	**DET**	2000	"	"	"	"	"	"	A-01a,R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-12*
SL-3-3 (P1F0709-03) Soil						Sampled: 06/22/01	Received: 06/22/01		
Gasoline Range Hydrocarbons	**DET**	400	mg/kg dry	20	NWTPH HCID	06/25/01	06/26/01	1060801	A-01a,R-02
Diesel Range Hydrocarbons	**DET**	1000	"	"	"	"	"	"	A-01a,R-02
Heavy Oil Range Hydrocarbons	**DET**	2000	"	"	"	"	"	"	A-01a,R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-12*
Outfall Oil (P1F0709-04) Other wet						Sampled: 06/22/01	Received: 06/22/01		
Gasoline Range Hydrocarbons	ND	2000	mg/kg wet	1	NWTPH HCID	06/25/01	06/26/01	1060801	
Diesel Range Hydrocarbons	**DET**	5000	"	"	"	"	"	"	A-02
Heavy Oil Range Hydrocarbons	**DET**	10000	"	"	"	"	"	"	A-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-12*
Source Oil (P1F0709-05) Other wet						Sampled: 06/22/01	Received: 06/22/01		
Gasoline Range Hydrocarbons	**DET**	1820	mg/kg wet	1	NWTPH HCID	06/25/01	06/26/01	1060801	
Diesel Range Hydrocarbons	**DET**	4550	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	**DET**	9090	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*113 %*	*50-150*							

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SL-1-3 (P1F0709-01) Soil						Sampled: 06/21/01	Received: 06/22/01		
Benzene	ND	5.00	mg/kg dry	100	NW-G, 8021B	06/22/01	06/23/01	1060780	
Toluene	**20.3**	5.00	"	"	"	"	"	"	
Ethylbenzene	**15.9**	5.00	"	"	"	"	"	"	
Xylenes (total)	**95.9**	5.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**4420**	200	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*
SL-2-3 (P1F0709-02) Soil						Sampled: 06/21/01	Received: 06/22/01		
Benzene	ND	5.00	mg/kg dry	100	NW-G, 8021B	06/22/01	06/23/01	1060780	
Toluene	**18.9**	5.00	"	"	"	"	"	"	
Ethylbenzene	**20.0**	5.00	"	"	"	"	"	"	
Xylenes (total)	**131**	5.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**5510**	200	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*
SL-3-3 (P1F0709-03) Soil						Sampled: 06/22/01	Received: 06/22/01		
Benzene	ND	5.00	mg/kg dry	100	NW-G, 8021B	06/22/01	06/23/01	1060780	
Toluene	**14.6**	5.00	"	"	"	"	"	"	
Ethylbenzene	**15.0**	5.00	"	"	"	"	"	"	
Xylenes (total)	**95.1**	5.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**4000**	200	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SL-1-3 (P1F0709-01) Soil					Sampled: 06/21/01 Received: 06/22/01				
Diesel Range Organics	**37900**	250	mg/kg dry	10	NWTPH-Dx	06/25/01	06/25/01	1060793	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	500	"	"	"	"	"	"	A-01,R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-12*
SL-2-3 (P1F0709-02) Soil					Sampled: 06/21/01 Received: 06/22/01				
Diesel Range Organics	**37400**	1000	mg/kg dry	40	NWTPH-Dx	06/25/01	06/25/01	1060793	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	2000	"	"	"	"	"	"	A-01,R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
SL-3-3 (P1F0709-03) Soil					Sampled: 06/22/01 Received: 06/22/01				
Diesel Range Organics	**26400**	1000	mg/kg dry	40	NWTPH-Dx	06/25/01	06/25/01	1060793	A-01,R-02
Heavy Oil Range Hydrocarbons	**4040**	2000	"	"	"	"	"	"	A-01,R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

COP0015663

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

Percent Dry Weight (Solids) per Standard Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SL-1-3 (P1F0709-01) Soil						Sampled: 06/21/01	Received: 06/22/01		
% Solids	**91.1**	1.00	% by Weight	1	NCA SOP	06/25/01	06/26/01	1060797	
SL-2-3 (P1F0709-02) Soil						Sampled: 06/21/01	Received: 06/22/01		
% Solids	**79.0**	1.00	% by Weight	1	NCA SOP	06/25/01	06/26/01	1060797	
SL-3-3 (P1F0709-03) Soil						Sampled: 06/22/01	Received: 06/22/01		
% Solids	**85.7**	1.00	% by Weight	1	NCA SOP	06/25/01	06/26/01	1060797	

COP0015664

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

Hydrocarbon Identification per NW-TPH Methodology - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060801 - TPH-HCID Extraction										
Blank (1060801-BLK1)				Prepared & Analyzed: 06/25/01						
Gasoline Range Hydrocarbons	ND	20.0	mg/kg							
Diesel Range Hydrocarbons	ND	50.0	"							
Heavy Oil Range Hydrocarbons	ND	100	"							
Surr: 1-Chlorooctadecane	*DET*		"	*3.96*		*97.5*	*50-150*			
Duplicate (1060801-DUP1)		**Source: P1F0709-01**		Prepared: 06/25/01 Analyzed: 06/26/01						
Gasoline Range Hydrocarbons	DET	400	mg/kg dry		DET			156	50	Q-14
Diesel Range Hydrocarbons	DET	1000	"		DET			144	50	Q-14
Heavy Oil Range Hydrocarbons	ND	2000	"		DET				50	Q-14
Surr: 1-Chlorooctadecane	*DET*		"	*4.35*			*50-150*			*S-01*
Duplicate (1060801-DUP2)		**Source: P1F0746-01**		Prepared: 06/25/01 Analyzed: 06/26/01						
Gasoline Range Hydrocarbons	DET	3640	mg/kg wet		ND				50	
Diesel Range Hydrocarbons	DET	9090	"		DET			9.72	50	
Heavy Oil Range Hydrocarbons	DET	18200	"		DET			8.14	50	
Surr: 1-Chlorooctadecane	*DET*		"	*36.0*			*50-150*			*S-01*

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060780 - EPA 5035										
Blank (1060780-BLK1)				Prepared & Analyzed: 06/22/01						
Benzene	ND	0.0500	mg/kg							
Toluene	ND	0.0500	"							
Ethylbenzene	ND	0.0500	"							
Xylenes (total)	ND	0.0500	"							
Gasoline Range Hydrocarbons	ND	2.00	"							
Surr: a,a,a-TFT (PID)	*1.24*		"	*1.25*		*99.2*	*75-120*			
Surr: a,a,a-TFT (FID)	*1.19*		"	*1.25*		*95.2*	*50-150*			
LCS (1060780-BS1)				Prepared: 06/22/01 Analyzed: 06/25/01						
Gasoline Range Hydrocarbons	33.6	2.00	mg/kg	31.2		108	65-130			
Surr: a,a,a-TFT (FID)	*1.61*		"	*1.25*		*129*	*50-150*			
LCS (1060780-BS2)				Prepared & Analyzed: 06/22/01						
Benzene	0.518	0.0500	mg/kg	0.500		104	65-130			
Toluene	0.543	0.0500	"	0.500		109	65-130			
Ethylbenzene	0.513	0.0500	"	0.500		103	65-130			
Xylenes (total)	1.52	0.0500	"	1.50		101	65-130			
Surr: a,a,a-TFT (PID)	*1.35*		"	*1.25*		*108*	*75-120*			
Duplicate (1060780-DUP1)	**Source: P1F0709-01**			Prepared: 06/22/01 Analyzed: 06/23/01						
Gasoline Range Hydrocarbons	4780	200	mg/kg dry		4420			7.83	50	
Surr: a,a,a-TFT (FID)	*0.00*		"	*1.37*			*50-150*			*S-01*
Matrix Spike (1060780-MS1)	**Source: P1F0709-02**			Prepared: 06/22/01 Analyzed: 06/23/01						
Benzene	ND	5.00	mg/kg dry	0.633	ND	7.90	65-130			Q-03
Toluene	18.3	5.00	"	0.633	18.9	NR	65-130			Q-03
Ethylbenzene	21.1	5.00	"	0.633	20.0	174	65-130			Q-03
Xylenes (total)	139	5.00	"	1.90	131	NR	65-130			Q-03
Surr: a,a,a-TFT (PID)	*0.00*		"	*1.58*			*75-120*			*S-01*

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060780 - EPA 5035										
Matrix Spike Dup (1060780-MSD1)	**Source: P1F0709-02**			Prepared: 06/22/01		Analyzed: 06/23/01				
Benzene	ND	5.00	mg/kg dry	0.633	ND	91.6	65-130	26.6	20	Q-03
Toluene	22.1	5.00	"	0.633	18.9	NR	65-130	18.8	20	Q-03
Ethylbenzene	26.2	5.00	"	0.633	20.0	NR	65-130	21.6	20	Q-03
Xylenes (total)	172	5.00	"	1.90	131	NR	65-130	21.2	20	Q-03
Surr: a,a,a-TFT (PID)	*0.00*		"	*1.58*			*75-120*			*S-01*

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060793 - EPA 3550 Fuels										
Blank (1060793-BLK1)				Prepared & Analyzed: 06/25/01						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.29*		"	*4.80*		*89.4*	*50-150*			
LCS (1060793-BS1)				Prepared & Analyzed: 06/25/01						
Diesel Range Organics	109	25.0	mg/kg	129		84.5	50-150			
Heavy Oil Range Hydrocarbons	67.5	50.0	"	79.0		85.4	50-150			
Surr: 1-Chlorooctadecane	*5.63*		"	*4.80*		*117*	*50-150*			
Duplicate (1060793-DUP1)		**Source: P1F0662-05**		Prepared & Analyzed: 06/25/01						
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*5.59*		"	*6.02*		*92.9*	*50-150*			
Duplicate (1060793-DUP2)		**Source: P1F0461-15**		Prepared & Analyzed: 06/25/01						
Diesel Range Organics	ND	25.0	mg/kg wet		ND				50	
Heavy Oil Range Hydrocarbons	142	50.0	"		130			8.82	50	
Surr: 1-Chlorooctadecane	*5.43*		"	*4.80*		*113*	*50-150*			

COP0015668

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060797 - Dry Weight										
Duplicate (1060797-DUP1)		**Source: P1F0388-15**		Prepared: 06/25/01 Analyzed: 06/26/01						
% Solids	93.3	1.00% by Weight			86.0			8.14	20	
Duplicate (1060797-DUP2)		**Source: P1F0388-39**		Prepared: 06/25/01 Analyzed: 06/26/01						
% Solids	92.0	1.00% by Weight			92.6			0.650	20	
Duplicate (1060797-DUP3)		**Source: P1F0663-01**		Prepared: 06/25/01 Analyzed: 06/26/01						
% Solids	96.0	1.00% by Weight			96.3			0.312	20	
Duplicate (1060797-DUP4)		**Source: P1F0709-01**		Prepared: 06/25/01 Analyzed: 06/26/01						
% Solids	91.2	1.00% by Weight			91.1			0.110	20	

COP0015669

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	06/28/01 08:51

Notes and Definitions

A-01	Detected hydrocarbons appear to be due to bunker oil or similar fuel oil.
A-01a	The sample resembles source oil.
A-02	The sample has certain peaks that match up to source oil, however, it is not a good match like the other samples.
Q-03	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
Q-14	The Spike Recovery and/or RPD is outside of control limits due to a non-homogeneous sample matrix.
R-02	The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-12	Unable to calculate surrogate recovery due to high analyte concentration.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-1-6.0	P1F0765-01	Soil	06/25/01 11:30	06/25/01 16:55
HA-1-10	P1F0765-02	Soil	06/25/01 11:45	06/25/01 16:55
HA-1-17	P1F0765-03	Soil	06/25/01 12:30	06/25/01 16:55
HA-2-4	P1F0765-04	Soil	06/25/01 14:00	06/25/01 16:55
HA-2-10	P1F0765-05	Soil	06/25/01 14:30	06/25/01 16:55
HA-2-15	P1F0765-06	Soil	06/25/01 14:45	06/25/01 16:55
MDO	P1F0765-07	Other wet	06/25/01 12:00	06/25/01 16:55

North Creek Analytical - Portland

Crystal Burkholder, Project Manager

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-1-6.0 (P1F0765-01) Soil					Sampled: 06/25/01 Received: 06/25/01				
Benzene	**1.03**	1.00	mg/kg dry	20	NW-G, 8021B	06/25/01	06/26/01	1060825	
Toluene	**7.56**	1.00	"	"	"	"	"	"	
Ethylbenzene	**6.74**	1.00	"	"	"	"	"	"	
Xylenes (total)	**38.0**	1.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**1660**	40.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*
HA-1-10 (P1F0765-02) Soil					Sampled: 06/25/01 Received: 06/25/01				
Benzene	ND	5.00	mg/kg dry	100	NW-G, 8021B	06/25/01	06/26/01	1060825	
Toluene	**14.3**	5.00	"	"	"	"	"	"	
Ethylbenzene	**10.1**	5.00	"	"	"	"	"	"	
Xylenes (total)	**70.7**	5.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**4050**	200	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*
HA-1-17 (P1F0765-03) Soil					Sampled: 06/25/01 Received: 06/25/01				
Benzene	ND	5.00	mg/kg dry	100	NW-G, 8021B	06/25/01	06/26/01	1060825	
Toluene	**13.5**	5.00	"	"	"	"	"	"	
Ethylbenzene	**13.6**	5.00	"	"	"	"	"	"	
Xylenes (total)	**80.6**	5.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**4260**	200	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-2-4 (P1F0765-04) Soil					Sampled: 06/25/01 Received: 06/25/01				
Benzene	ND	0.500	mg/kg dry	10	NW-G, 8021B	06/25/01	06/26/01	1060825	
Toluene	**0.566**	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.11**	0.500	"	"	"	"	"	"	
Xylenes (total)	**7.59**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**509**	20.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*121 %*	*75-120*							*S-02*
Surr: a,a,a-TFT (FID)	*147 %*	*50-150*							
HA-2-10 (P1F0765-05) Soil					Sampled: 06/25/01 Received: 06/25/01				
Benzene	ND	1.00	mg/kg dry	20	NW-G, 8021B	06/25/01	06/26/01	1060825	
Toluene	ND	1.00	"	"	"	"	"	"	
Ethylbenzene	**1.40**	1.00	"	"	"	"	"	"	
Xylenes (total)	**8.09**	1.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**724**	40.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*
HA-2-15 (P1F0765-06) Soil					Sampled: 06/25/01 Received: 06/25/01				
Benzene	ND	0.500	mg/kg dry	10	NW-G, 8021B	06/25/01	06/26/01	1060825	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	**0.539**	0.500	"	"	"	"	"	"	
Xylenes (total)	**3.03**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**316**	20.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*87.4 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*118 %*	*50-150*							

North Creek Analytical - Portland

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MDO (P1F0765-07) Other wet						Sampled: 06/25/01	Received: 06/25/01		
Diesel Range Organics	**870000**	50000	mg/kg wet	10	NWTPH-Dx	06/25/01	06/26/01	1060826	
Heavy Oil Range Hydrocarbons	ND	100000	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*82.4 %*	*50-150*							

North Creek Analytical - Portland

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-1-6.0 (P1F0765-01) Soil					Sampled: 06/25/01 Received: 06/25/01				
Diesel Range Organics	**49200**	500	mg/kg dry	20	NWTPH-Dx	06/25/01	06/26/01	1060826	A-01,R-02
Heavy Oil Range Hydrocarbons	**13200**	1000	"	"	"	"	"	"	A-01,R-02
Surr: 1-Chlorooctadecane	*108 %*	*50-150*							
HA-1-10 (P1F0765-02) Soil					Sampled: 06/25/01 Received: 06/25/01				
Diesel Range Organics	**28600**	250	mg/kg dry	10	NWTPH-Dx	06/25/01	06/26/01	1060826	R-02
Heavy Oil Range Hydrocarbons	**1400**	500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-12*
HA-1-17 (P1F0765-03) Soil					Sampled: 06/25/01 Received: 06/25/01				
Diesel Range Organics	**89900**	1250	mg/kg dry	50	NWTPH-Dx	06/25/01	06/26/01	1060826	A-02,R-02
Heavy Oil Range Hydrocarbons	**24100**	2500	"	"	"	"	"	"	A-02,R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
HA-2-4 (P1F0765-04) Soil					Sampled: 06/25/01 Received: 06/25/01				
Diesel Range Organics	**2960**	25.0	mg/kg dry	1	NWTPH-Dx	06/25/01	06/26/01	1060826	
Heavy Oil Range Hydrocarbons	**662**	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*115 %*	*50-150*							
HA-2-10 (P1F0765-05) Soil					Sampled: 06/25/01 Received: 06/25/01				
Diesel Range Organics	**7610**	250	mg/kg dry	10	NWTPH-Dx	06/25/01	06/26/01	1060826	A-02,R-02
Heavy Oil Range Hydrocarbons	**1350**	500	"	"	"	"	"	"	A-02,R-02
Surr: 1-Chlorooctadecane	*146 %*	*50-150*							
HA-2-15 (P1F0765-06) Soil					Sampled: 06/25/01 Received: 06/25/01				
Diesel Range Organics	**5690**	250	mg/kg dry	10	NWTPH-Dx	06/25/01	06/26/01	1060826	R-02
Heavy Oil Range Hydrocarbons	**1340**	500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*114 %*	*50-150*							

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Percent Dry Weight (Solids) per Standard Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-1-6.0 (P1F0765-01) Soil					Sampled: 06/25/01 Received: 06/25/01				
% Solids	**87.5**	1.00	% by Weight	1	NCA SOP	06/26/01	06/26/01	1060837	
HA-1-10 (P1F0765-02) Soil					Sampled: 06/25/01 Received: 06/25/01				
% Solids	**91.6**	1.00	% by Weight	1	NCA SOP	06/26/01	06/26/01	1060837	
HA-1-17 (P1F0765-03) Soil					Sampled: 06/25/01 Received: 06/25/01				
% Solids	**80.7**	1.00	% by Weight	1	NCA SOP	06/26/01	06/26/01	1060837	
HA-2-4 (P1F0765-04) Soil					Sampled: 06/25/01 Received: 06/25/01				
% Solids	**92.2**	1.00	% by Weight	1	NCA SOP	06/26/01	06/26/01	1060837	
HA-2-10 (P1F0765-05) Soil					Sampled: 06/25/01 Received: 06/25/01				
% Solids	**90.9**	1.00	% by Weight	1	NCA SOP	06/26/01	06/26/01	1060837	
HA-2-15 (P1F0765-06) Soil					Sampled: 06/25/01 Received: 06/25/01				
% Solids	**92.6**	1.00	% by Weight	1	NCA SOP	06/26/01	06/26/01	1060837	

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060825 - EPA 5035										
Blank (1060825-BLK1)				Prepared & Analyzed: 06/25/01						
Benzene	ND	0.0500	mg/kg							
Toluene	ND	0.0500	"							
Ethylbenzene	ND	0.0500	"							
Xylenes (total)	ND	0.0500	"							
Gasoline Range Hydrocarbons	ND	2.00	"							
Surr: a,a,a-TFT (PID)	*1.00*		"	*1.25*		*80.0*	*75-120*			
Surr: a,a,a-TFT (FID)	*1.28*		"	*1.25*		*102*	*50-150*			
LCS (1060825-BS1)				Prepared & Analyzed: 06/25/01						
Gasoline Range Hydrocarbons	31.2	2.00	mg/kg	31.2		100	65-130			
Surr: a,a,a-TFT (FID)	*1.48*		"	*1.25*		*118*	*50-150*			
LCS (1060825-BS2)				Prepared & Analyzed: 06/25/01						
Benzene	0.403	0.0500	mg/kg	0.500		80.6	65-130			
Toluene	0.414	0.0500	"	0.500		82.8	65-130			
Ethylbenzene	0.408	0.0500	"	0.500		81.6	65-130			
Xylenes (total)	1.22	0.0500	"	1.50		81.3	65-130			
Surr: a,a,a-TFT (PID)	*1.11*		"	*1.25*		*88.8*	*75-120*			
Duplicate (1060825-DUP1)	**Source: P1F0765-01**			Prepared: 06/25/01 Analyzed: 06/26/01						
Gasoline Range Hydrocarbons	1670	40.0	mg/kg dry		1660			0.601	50	
Surr: a,a,a-TFT (FID)	*0.00*		"	*1.43*			*50-150*			*S-01*
Matrix Spike (1060825-MS1)	**Source: P1F0765-02**			Prepared: 06/25/01 Analyzed: 06/26/01						
Benzene	ND	5.00	mg/kg dry	0.546	ND	60.4	65-130			Q-01
Toluene	12.8	5.00	"	0.546	14.3	NR	65-130			Q-01
Ethylbenzene	9.56	5.00	"	0.546	10.1	NR	65-130			Q-01
Xylenes (total)	63.8	5.00	"	1.64	70.7	NR	65-130			Q-01
Surr: a,a,a-TFT (PID)	*0.00*		"	*1.37*			*75-120*			*S-01*

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060825 - EPA 5035										
Matrix Spike Dup (1060825-MSD1)	**Source: P1F0765-02**			Prepared: 06/25/01	Analyzed: 06/26/01					
Benzene	ND	5.00	mg/kg dry	0.546	ND	NR	65-130	43.4	20	Q-01
Toluene	15.0	5.00	"	0.546	14.3	128	65-130	15.8	20	
Ethylbenzene	10.9	5.00	"	0.546	10.1	147	65-130	13.1	20	Q-01
Xylenes (total)	73.1	5.00	"	1.64	70.7	146	65-130	13.6	20	Q-01
Surr: a,a,a-TFT (PID)	*0.00*		"	*1.37*			*75-120*			*S-01*

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060826 - EPA 3550 Fuels										
Blank (1060826-BLK1)				Prepared: 06/25/01 Analyzed: 06/26/01						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.47*		"	*4.80*		*93.1*	*50-150*			
LCS (1060826-BS1)				Prepared: 06/25/01 Analyzed: 06/26/01						
Diesel Range Organics	86.4	25.0	mg/kg	129		67.0	50-150			
Heavy Oil Range Hydrocarbons	62.5	50.0	"	79.0		79.1	50-150			
Surr: 1-Chlorooctadecane	*5.23*		"	*4.80*		*109*	*50-150*			
Duplicate (1060826-DUP1)		**Source: P1F0748-01**		Prepared: 06/25/01 Analyzed: 06/26/01						
Diesel Range Organics	ND	125	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	7630	250	"		5880			25.9	50	
Surr: 1-Chlorooctadecane	*6.56*		"	*7.63*		*86.0*	*50-150*			
Duplicate (1060826-DUP2)		**Source: P1F0738-03**		Prepared: 06/25/01 Analyzed: 06/26/01						
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*5.86*		"	*6.42*		*91.3*	*50-150*			

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060826 - EPA 3550 Fuels										
Blank (1060826-BLK1)				Prepared: 06/25/01 Analyzed: 06/26/01						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.56*		"	*4.80*		*95.0*	*50-150*			
LCS (1060826-BS1)				Prepared: 06/25/01 Analyzed: 06/26/01						
Diesel Range Organics	94.4	25.0	mg/kg	129		73.2	50-150			
Heavy Oil Range Hydrocarbons	69.5	50.0	"	79.0		88.0	50-150			
Surr: 1-Chlorooctadecane	*5.73*		"	*4.80*		*119*	*50-150*			
Duplicate (1060826-DUP1)	**Source: P1F0748-01**			Prepared: 06/25/01 Analyzed: 06/26/01						
Diesel Range Organics	1870	125	mg/kg dry		1410			28.0	50	
Heavy Oil Range Hydrocarbons	7630	250	"		5880			25.9	50	
Surr: 1-Chlorooctadecane	*6.56*		"	*7.63*		*86.0*	*50-150*			
Duplicate (1060826-DUP2)	**Source: P1F0738-03**			Prepared: 06/25/01 Analyzed: 06/26/01						
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*5.86*		"	*6.42*		*91.3*	*50-150*			

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060837 - Dry Weight										
Duplicate (1060837-DUP1)		**Source: P1F0466-01**		Prepared: 06/26/01 Analyzed: 06/27/01						
% Solids	77.5	1.00	% by Weight		75.0			3.28	20	
Duplicate (1060837-DUP2)		**Source: P1F0466-02**		Prepared: 06/26/01 Analyzed: 06/27/01						
% Solids	79.7	1.00	% by Weight		73.1			8.64	20	
Duplicate (1060837-DUP3)		**Source: P1F0466-03**		Prepared: 06/26/01 Analyzed: 06/27/01						
% Solids	85.4	1.00	% by Weight		89.6			4.80	20	

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:32

Notes and Definitions

A-01	The sample resembles the fingerprint product, however, the sample appears to be fresher.
A-02	The sample resembles the fingerprint product, however, the sample appears to be fresher, and has a more pronounced heavy oil presence.
Q-01	The spike recovery, and/or RPD, for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
R-02	The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
S-12	Unable to calculate surrogate recovery due to high analyte concentration.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

North Creek Analytical - Portland

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TOSCO CHAIN OF CUSTODY REPORT

TOSCO INFORMATION

Facility Number: Tosco Portland Terminal
Site Address: 5528 NW Doane Ave
City, State, ZIP: Portland, OR 97210
Project/AWO Code
Tosco Manager: Bill Collins
FACILITY TYPE: (check one) ☐ BP/Ⓚ ☒ Terminal/Bulk Plant ☐ Brown Bear ☐ Former 76 Site ☐ Other

CONSULTANT INFORMATION

Firm: GeoEngineers Project# 4823-030-00
Address: 7504 SW Bridgeport Road
Portland, OR 97224
Phone: (503) 624-9274 Fax: (503) 620-5940
Project Manager: Kyle Sattler E-mail:
Sample Collection by: JSO

Quality Assurance Data Level: A B
A: Standard Summary
B: Standard + Chromatograms
Laboratory Turnaround Days: 10 5 3 2 X
10 Day - Standard

○ OR ○ WA ○ AK ○ NW Series ○ ID

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CON-TAINERS	TPH-HCID	TPH-Gas	BTEX EPA 8021 Mod.	TPH-Gas + BTEX NW Method	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS SemiVols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved TCLP or RCRA Metals (8)	Fingerprint (1)	2wk Standard	NCA SAMPLE NUMBER
1. HA-1-6.0	6/25/01 1130	S	2				X			X							X		
2. HA-1-10	1145	S	2				X			X							X		
3. HA-1-15	1230	S	2				X			X							X		
4. HA-2-4	1400	S	2				X			X							X		
5. HA-2-10	1430	S	2				X			X							X		
6. HA-2-15	1445	S	2				X			X							X		
7. MDO*	--	O	1														XX		
8.																			
9.																			
10.																			

Fingerprint highest Dx

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.		GEI	6/25/01 1605		NCA	6/25/01 16:05
2.		NCA	6/25/01 1685		NCA	6/25/01 1685
3.						

Comments:

Page ____ of ____ *
Comments: Additional Product for Fingerprinting (1) Call Kyle Sattler
Rev. Tos3.3.2/99
Distribution: White - Laboratory Yellow - Consultant Photocopy - Tosco

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-3-5	P1F0791-01	Soil	06/26/01 09:00	06/26/01 14:18
HA-3-10	P1F0791-02	Soil	06/26/01 09:20	06/26/01 14:18
HA-3-14	P1F0791-03	Soil	06/26/01 09:40	06/26/01 14:18
HA-4-5	P1F0791-04	Soil	06/26/01 10:20	06/26/01 14:18
HA-4-10	P1F0791-05	Soil	06/26/01 10:35	06/26/01 14:18
HA-4-15	P1F0791-06	Soil	06/26/01 11:00	06/26/01 14:18
HA-4-20	P1F0791-07	Soil	06/26/01 11:20	06/26/01 14:18

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Crystal Burkholder, Project Manager

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-3-5 (P1F0791-01) Soil					Sampled: 06/26/01 Received: 06/26/01				
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	06/26/01	06/27/01	1060861	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*120 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*115 %*	*50-150*							
HA-3-10 (P1F0791-02) Soil					Sampled: 06/26/01 Received: 06/26/01				
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	06/26/01	06/27/01	1060861	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*94.2 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*90.6 %*	*50-150*							
HA-3-14 (P1F0791-03) Soil					Sampled: 06/26/01 Received: 06/26/01				
Benzene	ND	0.500	mg/kg dry	10	NW-G, 8021B	06/26/01	06/26/01	1060861	
Toluene	**0.571**	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.55**	0.500	"	"	"	"	"	"	
Xylenes (total)	**6.83**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**684**	20.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*122 %*	*75-120*							*S-02*
Surr: a,a,a-TFT (FID)	*130 %*	*50-150*							

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-4-5 (P1F0791-04) Soil					Sampled: 06/26/01 Received: 06/26/01				
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	06/26/01	06/27/01	1060861	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**2.39**	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*115 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*115 %*	*50-150*							
HA-4-10 (P1F0791-05) Soil					Sampled: 06/26/01 Received: 06/26/01				
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	06/26/01	06/27/01	1060861	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**17.0**	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*101 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*101 %*	*50-150*							
HA-4-15 (P1F0791-06) Soil					Sampled: 06/26/01 Received: 06/26/01				
Benzene	ND	0.500	mg/kg dry	10	NW-G, 8021B	06/26/01	06/26/01	1060861	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	**1.46**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**442**	20.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*106 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*113 %*	*50-150*							

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-4-20 (P1F0791-07) Soil					Sampled: 06/26/01 Received: 06/26/01				
Benzene	ND	2.50	mg/kg dry	50	NW-G, 8021B	06/26/01	06/27/01	1060861	
Toluene	**4.23**	2.50	"	"	"	"	"	"	
Ethylbenzene	**5.22**	2.50	"	"	"	"	"	"	
Xylenes (total)	**30.7**	2.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**1610**	100	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-3-5 (P1F0791-01) Soil					Sampled: 06/26/01 Received: 06/26/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	06/26/01	06/27/01	1060860	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*113 %*	*50-150*							
HA-3-10 (P1F0791-02) Soil					Sampled: 06/26/01 Received: 06/26/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	06/26/01	06/27/01	1060860	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*115 %*	*50-150*							
HA-3-14 (P1F0791-03) Soil					Sampled: 06/26/01 Received: 06/26/01				
Diesel Range Organics	**10300**	500	mg/kg dry	20	NWTPH-Dx	06/26/01	06/27/01	1060860	R-02
Heavy Oil Range Hydrocarbons	**1670**	1000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
HA-4-5 (P1F0791-04) Soil					Sampled: 06/26/01 Received: 06/26/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	06/26/01	06/27/01	1060860	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*124 %*	*50-150*							
HA-4-10 (P1F0791-05) Soil					Sampled: 06/26/01 Received: 06/26/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	06/26/01	06/27/01	1060860	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*119 %*	*50-150*							
HA-4-15 (P1F0791-06) Soil					Sampled: 06/26/01 Received: 06/26/01				
Diesel Range Organics	**13000**	500	mg/kg dry	20	NWTPH-Dx	06/26/01	06/27/01	1060860	R-02
Heavy Oil Range Hydrocarbons	ND	1000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*116 %*	*50-150*							

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-4-20 (P1F0791-07) Soil					Sampled: 06/26/01 Received: 06/26/01				
Diesel Range Organics	**62500**	1000	mg/kg dry	40	NWTPH-Dx	06/26/01	06/27/01	1060860	R-02
Heavy Oil Range Hydrocarbons	**16700**	2000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

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Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Percent Dry Weight (Solids) per Standard Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-3-5 (P1F0791-01) Soil					Sampled: 06/26/01 Received: 06/26/01				
% Solids	**91.5**	1.00	% by Weight	1	NCA SOP	06/26/01	06/27/01	1060837	
HA-3-10 (P1F0791-02) Soil					Sampled: 06/26/01 Received: 06/26/01				
% Solids	**90.4**	1.00	% by Weight	1	NCA SOP	06/26/01	06/27/01	1060837	
HA-3-14 (P1F0791-03) Soil					Sampled: 06/26/01 Received: 06/26/01				
% Solids	**88.5**	1.00	% by Weight	1	NCA SOP	06/26/01	06/27/01	1060837	
HA-4-5 (P1F0791-04) Soil					Sampled: 06/26/01 Received: 06/26/01				
% Solids	**91.7**	1.00	% by Weight	1	NCA SOP	06/26/01	06/27/01	1060837	
HA-4-10 (P1F0791-05) Soil					Sampled: 06/26/01 Received: 06/26/01				
% Solids	**91.0**	1.00	% by Weight	1	NCA SOP	06/26/01	06/27/01	1060837	
HA-4-15 (P1F0791-06) Soil					Sampled: 06/26/01 Received: 06/26/01				
% Solids	**91.4**	1.00	% by Weight	1	NCA SOP	06/26/01	06/27/01	1060837	
HA-4-20 (P1F0791-07) Soil					Sampled: 06/26/01 Received: 06/26/01				
% Solids	**82.8**	1.00	% by Weight	1	NCA SOP	06/26/01	06/27/01	1060837	

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7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060861 - EPA 5035										
Blank (1060861-BLK1)				Prepared & Analyzed: 06/26/01						
Benzene	ND	0.0500	mg/kg							
Toluene	ND	0.0500	"							
Ethylbenzene	ND	0.0500	"							
Xylenes (total)	ND	0.0500	"							
Gasoline Range Hydrocarbons	ND	2.00	"							
Surr: a,a,a-TFT (PID)	*1.37*		"	*1.25*		*110*	*75-120*			
Surr: a,a,a-TFT (FID)	*1.34*		"	*1.25*		*107*	*50-150*			
LCS (1060861-BS1)				Prepared & Analyzed: 06/26/01						
Gasoline Range Hydrocarbons	31.9	2.00	mg/kg	31.2		102	65-130			
Surr: a,a,a-TFT (FID)	*1.59*		"	*1.25*		*127*	*50-150*			
LCS (1060861-BS2)				Prepared & Analyzed: 06/26/01						
Benzene	0.511	0.0500	mg/kg	0.500		102	65-130			
Toluene	0.499	0.0500	"	0.500		99.8	65-130			
Ethylbenzene	0.507	0.0500	"	0.500		101	65-130			
Xylenes (total)	1.56	0.0500	"	1.50		104	65-130			
Surr: a,a,a-TFT (PID)	*1.41*		"	*1.25*		*113*	*75-120*			
Duplicate (1060861-DUP1)		**Source: P1F0706-01**		Prepared: 06/26/01 Analyzed: 06/27/01						
Gasoline Range Hydrocarbons	ND	2.00	mg/kg dry		2.12				50	
Surr: a,a,a-TFT (FID)	*1.60*		"	*1.76*		*90.9*	*50-150*			
Duplicate (1060861-DUP2)		**Source: P1F0706-02**		Prepared: 06/26/01 Analyzed: 06/27/01						
Gasoline Range Hydrocarbons	ND	2.00	mg/kg dry		ND			13.0	50	
Surr: a,a,a-TFT (FID)	*2.05*		"	*1.84*		*111*	*50-150*			
Matrix Spike (1060861-MS1)		**Source: P1F0788-01**		Prepared & Analyzed: 06/26/01						
Benzene	0.603	0.0500	mg/kg wet	0.500	ND	121	65-130			
Toluene	0.634	0.0500	"	0.500	ND	123	65-130			
Ethylbenzene	0.641	0.0500	"	0.500	ND	120	65-130			
Xylenes (total)	1.92	0.0500	"	1.50	0.153	118	65-130			
Surr: a,a,a-TFT (PID)	*1.10*		"	*1.25*		*88.0*	*75-120*			

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Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060861 - EPA 5035										
Matrix Spike Dup (1060861-MSD1)		**Source: P1F0788-01**		Prepared & Analyzed: 06/26/01						
Benzene	0.628	0.0500	mg/kg wet	0.500	ND	126	65-130	4.06	20	
Toluene	0.662	0.0500	"	0.500	ND	129	65-130	4.32	20	
Ethylbenzene	0.671	0.0500	"	0.500	ND	126	65-130	4.57	20	
Xylenes (total)	1.98	0.0500	"	1.50	0.153	122	65-130	3.08	20	
Surr: a,a,a-TFT (PID)	*1.12*		"	*1.25*		*89.6*	*75-120*			

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509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060860 - EPA 3550 Fuels										
Blank (1060860-BLK1)				Prepared: 06/26/01 Analyzed: 06/27/01						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.64*		"	*4.80*		*96.7*	*50-150*			
LCS (1060860-BS1)				Prepared: 06/26/01 Analyzed: 06/27/01						
Diesel Range Organics	110	25.0	mg/kg	129		85.3	50-150			
Heavy Oil Range Hydrocarbons	64.4	50.0	"	79.0		81.5	50-150			
Surr: 1-Chlorooctadecane	*5.98*		"	*4.80*		*125*	*50-150*			
Duplicate (1060860-DUP1)		**Source: P1F0527-01**		Prepared: 06/26/01 Analyzed: 06/27/01						
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*0.00*		"	*6.36*			*50-150*			
Duplicate (1060860-DUP2)		**Source: P1F0543-04**		Prepared: 06/26/01 Analyzed: 06/27/01						
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*0.00*		"	*5.90*			*50-150*			

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

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541.383.9310 fax 541.382.7588

GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060837 - Dry Weight										
Duplicate (1060837-DUP1)		**Source: P1F0466-01**		Prepared: 06/26/01	Analyzed: 06/27/01					
% Solids	77.5	1.00	% by Weight		75.0			3.28	20	
Duplicate (1060837-DUP2)		**Source: P1F0466-02**		Prepared: 06/26/01	Analyzed: 06/27/01					
% Solids	79.7	1.00	% by Weight		73.1			8.64	20	
Duplicate (1060837-DUP3)		**Source: P1F0466-03**		Prepared: 06/26/01	Analyzed: 06/27/01					
% Solids	85.4	1.00	% by Weight		89.6			4.80	20	

North Creek Analytical - Portland

Crystal Burkholder, Project Manager

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	06/28/01 08:35

Notes and Definitions

R-02	The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Burkholder, Project Manager

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20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 FAX 382-7588

PIF0791

TOSCO CHAIN OF CUSTODY REPORT

TOSCO INFORMATION

Facility Number: Tosco Portland Terminal
Site Address: 5328 NW Doane Ave
City, State, ZIP: Portland, OR 97210
Project/AWO Code
Tosco Manager: Bill Collins
FACILITY TYPE: (check one) ☐ BP/Ⓚ ☒ Terminal/Bulk Plant
☐ Brown Bear ☐ Former 76 Site ☐ Other

CONSULTANT INFORMATION

Firm: GeoEngineers Project# 4823-030-00
Address: 7504 SW Bridgeport Rd
Portland, OR 97224
Phone: (503) 624-9274 Fax: (503) 620-5940
Project Manager: Kyle Sattler E-mail:
Sample Collection by: JSO

Quality Assurance Data Level: ☐ A ☐ B
A: Standard Summary
B: Standard + Chromatograms

Laboratory Turnaround Days: 10 | 5 | 3 | 2 | ☒
10 Day - Standard

○ OR ○ WA ○ AK ☒ NW Series ○ ID

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONTAINERS	TPH-HCID	TPH-Gas	BTEX EPA 8021 Mod.	TPH-Gas + BTEX NW METHODS	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SiG Cleanup	Halogen. Volatiles EPA 8021	Pest cides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS SemiVols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved	TCLP or RCRA Metals (8)	NCA SAMPLE NUMBER
1. HA-3-5	6/26/01 0900	S	2				X			X								
2. HA-3-10	0920	S	2				X			X								
3. HA-3-14	0940	S	2				X			X								
4. HA-4-5	1020	S	2				X			X								
5. HA-4-10	1035	S	2				X			X								
6. HA-4-15	1100	S	2				X			X								
7. HA-4-20	1120	S	2				X			X								
8.																		
9.																		
10.																		

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.	[signature]	GEI	6/26/01 1916	Camille Holladay	NCA	6/26/01 1418
2.						
3.						

Comments:

Page 1 of 1
Rev. Tos3.3.2/99

Comments:

Distribution: White - Laboratory Yellow - Consultant Photocopy - Tosco

9.5

37

COP0015696

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EX-SW-1-6.0	P1G0050-01	Soil	06/29/01 15:35	07/02/01 15:46
EX-SW-2-6.0	P1G0050-02	Soil	06/29/01 15:40	07/02/01 15:46
EX-FL-1-8.0	P1G0050-03	Soil	06/29/01 15:30	07/02/01 15:46
EX-FL-2-7.5	P1G0050-04	Soil	06/29/01 15:45	07/02/01 15:46
EX-FL-3-8.0	P1G0050-05	Soil	06/29/01 15:50	07/02/01 15:46
100N	P1G0050-06	Other wet	06/29/01 12:00	07/02/01 15:46
600N	P1G0050-07	Other wet	06/29/01 12:00	07/02/01 15:46
5R	P1G0050-08	Other wet	06/29/01 12:00	07/02/01 15:46
220N	P1G0050-09	Other wet	06/29/01 12:00	07/02/01 15:46

COP0015697

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

Hydrocarbon Identification per NW-TPH Methodology

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
100N (P1G0050-06) Other wet					Sampled: 06/29/01 Received: 07/02/01				
Gasoline Range Hydrocarbons	ND	1250	mg/kg wet	1	NWTPH HCID	07/03/01	07/03/01	1070827	
Diesel Range Hydrocarbons	**DET**	3120	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	**DET**	6250	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*105 %*	*50-150*							
600N (P1G0050-07) Other wet					Sampled: 06/29/01 Received: 07/02/01				
Gasoline Range Hydrocarbons	ND	1430	mg/kg wet	1	NWTPH HCID	07/03/01	07/03/01	1070827	
Diesel Range Hydrocarbons	ND	3570	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	**DET**	7140	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*96.1 %*	*50-150*							
5R (P1G0050-08) Other wet					Sampled: 06/29/01 Received: 07/02/01				
Gasoline Range Hydrocarbons	ND	1540	mg/kg wet	1	NWTPH HCID	07/03/01	07/03/01	1070827	
Diesel Range Hydrocarbons	**DET**	3850	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	**DET**	7690	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*92.5 %*	*50-150*							
220N (P1G0050-09) Other wet					Sampled: 06/29/01 Received: 07/02/01				
Gasoline Range Hydrocarbons	ND	1540	mg/kg wet	1	NWTPH HCID	07/03/01	07/03/01	1070827	
Diesel Range Hydrocarbons	**DET**	3850	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	**DET**	7690	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*94.8 %*	*50-150*							

COP0015698

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-SW-1-6.0 (P1G0050-01) Soil					Sampled: 06/29/01 Received: 07/02/01				
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	07/03/01	07/03/01	1070833	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*85.9 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*77.1 %*	*50-150*							
EX-SW-2-6.0 (P1G0050-02) Soil					Sampled: 06/29/01 Received: 07/02/01				
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	07/03/01	07/03/01	1070833	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*83.7 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*73.3 %*	*50-150*							
EX-FL-1-8.0 (P1G0050-03) Soil					Sampled: 06/29/01 Received: 07/02/01				
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	07/03/01	07/03/01	1070833	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*75.7 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*66.7 %*	*50-150*							

COP0015699

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-FL-2-7.5 (P1G0050-04) Soil					Sampled: 06/29/01 Received: 07/02/01				
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	07/03/01	07/03/01	1070833	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**2.89**	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*88.9 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*79.3 %*	*50-150*							
EX-FL-3-8.0 (P1G0050-05) Soil					Sampled: 06/29/01 Received: 07/02/01				
Benzene	ND	5.00	mg/kg dry	100	NW-G, 8021B	07/03/01	07/04/01	1070833	
Toluene	**13.5**	5.00	"	"	"	"	"	"	
Ethylbenzene	**11.2**	5.00	"	"	"	"	"	"	
Xylenes (total)	**91.7**	5.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**5440**	200	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-SW-1-6.0 (P1G0050-01) Soil					Sampled: 06/29/01 Received: 07/02/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/03/01	07/03/01	1070828	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*93.3 %*	*50-150*							
EX-SW-2-6.0 (P1G0050-02) Soil					Sampled: 06/29/01 Received: 07/02/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/03/01	07/04/01	1070828	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*94.2 %*	*50-150*							
EX-FL-1-8.0 (P1G0050-03) Soil					Sampled: 06/29/01 Received: 07/02/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/03/01	07/04/01	1070828	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*107 %*	*50-150*							
EX-FL-2-7.5 (P1G0050-04) Soil					Sampled: 06/29/01 Received: 07/02/01				
Diesel Range Organics	**31.8**	25.0	mg/kg dry	1	NWTPH-Dx	07/03/01	07/04/01	1070828	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*94.8 %*	*50-150*							
EX-FL-3-8.0 (P1G0050-05) Soil					Sampled: 06/29/01 Received: 07/02/01				
Diesel Range Organics	**14500**	250	mg/kg dry	10	NWTPH-Dx	07/03/01	07/04/01	1070828	A-01
Heavy Oil Range Hydrocarbons	**839**	500	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*143 %*	*50-150*							

COP0015701

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

Percent Dry Weight (Solids) per Standard Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-SW-1-6.0 (P1G0050-01) Soil					Sampled: 06/29/01 Received: 07/02/01				
% Solids	**97.5**	1.00	% by Weight	1	NCA SOP	07/03/01	07/03/01	1070835	
EX-SW-2-6.0 (P1G0050-02) Soil					Sampled: 06/29/01 Received: 07/02/01				
% Solids	**92.7**	1.00	% by Weight	1	NCA SOP	07/03/01	07/03/01	1070835	
EX-FL-1-8.0 (P1G0050-03) Soil					Sampled: 06/29/01 Received: 07/02/01				
% Solids	**91.6**	1.00	% by Weight	1	NCA SOP	07/03/01	07/03/01	1070835	
EX-FL-2-7.5 (P1G0050-04) Soil					Sampled: 06/29/01 Received: 07/02/01				
% Solids	**92.4**	1.00	% by Weight	1	NCA SOP	07/03/01	07/03/01	1070835	
EX-FL-3-8.0 (P1G0050-05) Soil					Sampled: 06/29/01 Received: 07/02/01				
% Solids	**90.5**	1.00	% by Weight	1	NCA SOP	07/03/01	07/03/01	1070835	

COP0015702

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

Hydrocarbon Identification per NW-TPH Methodology - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1070827 - TPH-HCID Extraction										
Blank (1070827-BLK1)				Prepared & Analyzed: 07/03/01						
Gasoline Range Hydrocarbons	ND	20.0	mg/kg							
Diesel Range Hydrocarbons	ND	50.0	"							
Heavy Oil Range Hydrocarbons	ND	100	"							
Surr: 1-Chlorooctadecane	*DET*		"	*3.96*		*106*	*50-150*			
Duplicate (1070827-DUP1)		**Source: P1G0031-14**		Prepared & Analyzed: 07/03/01						
Gasoline Range Hydrocarbons	DET	20.0	mg/kg dry		DET			51.2	50	
Diesel Range Hydrocarbons	DET	50.0	"		DET			46.4	50	
Heavy Oil Range Hydrocarbons	ND	100	"		ND				50	
Surr: 1-Chlorooctadecane	*DET*		"	*5.28*		*116*	*50-150*			

COP0015703

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

Gasoline Hydrocarbons per NWTPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1070833 - EPA 5035										
Blank (1070833-BLK1)				Prepared & Analyzed: 07/03/01						
Benzene	ND	0.0500	mg/kg							
Toluene	ND	0.0500	"							
Ethylbenzene	ND	0.0500	"							
Xylenes (total)	ND	0.0500	"							
Gasoline Range Hydrocarbons	ND	2.00	"							
Surr: a,a,a-TFT (PID)	*1.24*		"	*1.25*		*99.2*	*75-120*			
Surr: a,a,a-TFT (FID)	*1.31*		"	*1.25*		*105*	*50-150*			
LCS (1070833-BS1)				Prepared & Analyzed: 07/03/01						
Gasoline Range Hydrocarbons	30.4	2.00	mg/kg	31.2		97.4	65-130			
Surr: a,a,a-TFT (FID)	*2.40*		"	*1.25*		*192*	*50-150*			*S-02*
LCS (1070833-BS2)				Prepared & Analyzed: 07/03/01						
Benzene	0.467	0.0500	mg/kg	0.500		93.4	65-130			
Toluene	0.494	0.0500	"	0.500		98.8	65-130			
Ethylbenzene	0.464	0.0500	"	0.500		92.8	65-130			
Xylenes (total)	1.38	0.0500	"	1.50		92.0	65-130			
Surr: a,a,a-TFT (PID)	*1.22*		"	*1.25*		*97.6*	*75-120*			
Duplicate (1070833-DUP1)		**Source: P1G0050-01**		Prepared & Analyzed: 07/03/01						
Gasoline Range Hydrocarbons	ND	2.00	mg/kg dry		ND			20.4	50	
Surr: a,a,a-TFT (FID)	*1.04*		"	*1.28*		*81.2*	*50-150*			
Duplicate (1070833-DUP2)		**Source: P1F0915-01**		Prepared: 07/03/01 Analyzed: 07/04/01						
Gasoline Range Hydrocarbons	574	40.0	mg/kg dry		702			20.1	50	
Surr: a,a,a-TFT (FID)	*0.00*		"	*1.49*			*50-150*			*S-01*
Matrix Spike (1070833-MS1)		**Source: P1G0050-02**		Prepared: 07/03/01 Analyzed: 07/05/01						
Benzene	0.487	0.0500	mg/kg dry	0.539	ND	90.4	65-130			
Toluene	0.509	0.0500	"	0.539	ND	94.4	65-130			
Ethylbenzene	0.527	0.0500	"	0.539	ND	97.8	65-130			
Xylenes (total)	1.53	0.0500	"	1.62	ND	94.4	65-130			
Surr: a,a,a-TFT (PID)	*1.30*		"	*1.35*		*96.3*	*75-120*			

COP0015704

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1070833 - EPA 5035										
Matrix Spike Dup (1070833-MSD1)		**Source: P1G0050-02**		Prepared & Analyzed: 07/03/01						
Benzene	0.521	0.0500	mg/kg dry	0.539	ND	96.7	65-130	6.75	20	
Toluene	0.521	0.0500	"	0.539	ND	96.7	65-130	2.33	20	
Ethylbenzene	0.520	0.0500	"	0.539	ND	96.5	65-130	1.34	20	
Xylenes (total)	1.53	0.0500	"	1.62	ND	94.4	65-130	0.00	20	
Surr: a,a,a-TFT (PID)	*1.17*		"	*1.35*		*86.7*	*75-120*			

COP0015705

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1070828 - EPA 3550 Fuels										
Blank (1070828-BLK1)				Prepared & Analyzed: 07/03/01						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.17*		"	*4.80*		*86.9*	*50-150*			
LCS (1070828-BS1)				Prepared & Analyzed: 07/03/01						
Diesel Range Organics	105	25.0	mg/kg	129		81.4	50-150			
Heavy Oil Range Hydrocarbons	54.3	50.0	"	79.0		68.7	50-150			
Surr: 1-Chlorooctadecane	*6.08*		"	*4.80*		*127*	*50-150*			
Duplicate (1070828-DUP1)		**Source: P1F0847-04**		Prepared & Analyzed: 07/03/01						
Diesel Range Organics	ND	25.0	mg/kg dry		27.8			33.1	50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*6.06*		"	*6.31*		*96.0*	*50-150*			
Duplicate (1070828-DUP2)		**Source: P1F0912-02**		Prepared: 07/03/01 Analyzed: 07/04/01						
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*6.05*		"	*6.15*		*98.4*	*50-150*			

COP0015706

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 350608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/05/01 16:48

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1070835 - Dry Weight										
Duplicate (1070835-DUP1)		**Source: P1G0050-05**		Prepared & Analyzed: 07/03/01						
% Solids	90.4	1.00% by Weight			90.5			0.111	20	
Duplicate (1070835-DUP2)		**Source: P1F0885-03**		Prepared & Analyzed: 07/03/01						
% Solids	81.1	1.00% by Weight			82.3			1.47	20	
Duplicate (1070835-DUP3)		**Source: P1F0800-10**		Prepared & Analyzed: 07/03/01						
% Solids	73.8	1.00% by Weight			73.3			0.680	20	

COP0015707

Notes and Definitions

A-01	The detected hydrocarbons appear to be due mainly to diesel, however there is also overlap of the gas range as well.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

COP0015708

TOSCO	Project:	MDO Line Leak	
5528 NW Doane St	Project Number:	0608	**Reported:**
Portland, OR 97210	Project Manager:	Marty Cramer	07/16/01 11:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
3579-Fuel Oil	P1G0337-01	Other wet	06/30/01 12:00	07/11/01 16:35
2783-Decant	P1G0337-02	Other wet	06/30/01 13:00	07/11/01 16:35

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Crystal Burkholder, Project Manager

COP0015709

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 0608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/16/01 11:29

Hydrocarbon Identification per NW-TPH Methodology

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
3579-Fuel Oil (P1G0337-01) Other wet						Sampled: 06/30/01	Received: 07/11/01		
Gasoline Range Hydrocarbons	ND	1670	mg/kg wet	1	NWTPH HCID	07/11/01	07/12/01	1071130	
Diesel Range Hydrocarbons	**DET**	4170	"	"	"	"	"	"	A-01
Heavy Oil Range Hydrocarbons	**DET**	8330	"	"	"	"	"	"	A-01
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-02*
2783-Decant (P1G0337-02) Other wet						Sampled: 06/30/01	Received: 07/11/01		
Gasoline Range Hydrocarbons	ND	1820	mg/kg wet	1	NWTPH HCID	07/11/01	07/12/01	1071130	
Diesel Range Hydrocarbons	**DET**	4550	"	"	"	"	"	"	A-01
Heavy Oil Range Hydrocarbons	**DET**	9090	"	"	"	"	"	"	A-01
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-02*

COP0015710

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 0608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/16/01 11:29

Hydrocarbon Identification per NW-TPH Methodology - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071130 - TPH-HCID Extraction										
Blank (1071130-BLK1)				Prepared: 07/11/01 Analyzed: 07/12/01						
Gasoline Range Hydrocarbons	ND	20.0	mg/kg							
Diesel Range Hydrocarbons	ND	50.0	"							
Heavy Oil Range Hydrocarbons	ND	100	"							
Surr: 1-Chlorooctadecane	*DET*		"	*3.96*		*87.4*	*50-150*			
Duplicate (1071130-DUP1)		**Source: P1G0118-01**		Prepared: 07/11/01 Analyzed: 07/12/01						
Gasoline Range Hydrocarbons	ND	44.9	mg/kg dry		ND				50	
Diesel Range Hydrocarbons	DET	112	"		DET			38.4	50	
Heavy Oil Range Hydrocarbons	DET	225	"		DET			33.6	50	
Surr: 1-Chlorooctadecane	*DET*		"	*8.90*		*121*	*50-150*			
Duplicate (1071130-DUP2)		**Source: P1G0122-01**		Prepared: 07/11/01 Analyzed: 07/12/01						
Gasoline Range Hydrocarbons	ND	20.0	mg/kg dry		ND				50	
Diesel Range Hydrocarbons	DET	50.0	"		DET			0.755	50	
Heavy Oil Range Hydrocarbons	DET	100	"		DET			0.166	50	
Surr: 1-Chlorooctadecane	*DET*		"	*4.62*			*50-150*			*S-12*

TOSCO	Project: MDO Line Leak	
5528 NW Doane St	Project Number: 0608	**Reported:**
Portland, OR 97210	Project Manager: Marty Cramer	07/16/01 11:29

Notes and Definitions

A-01	Detected hydrocarbons appear to be due to crude oil.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
S-12	Unable to calculate surrogate recovery due to high analyte concentration.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EX-FL-4-6.5	P1G0085-01	Soil	07/03/01 10:55	07/03/01 15:34
EX-FL-5-6	P1G0085-02	Soil	07/03/01 11:15	07/03/01 15:34
EX-FL-6-5	P1G0085-03	Soil	07/03/01 11:30	07/03/01 15:34
EX-FL-7-6	P1G0085-04	Soil	07/03/01 11:45	07/03/01 15:34
EX-FL-8-8	P1G0085-05	Soil	07/03/01 12:00	07/03/01 15:34
EX-SW-3-5	P1G0085-06	Soil	07/03/01 12:15	07/03/01 15:34
EX-SW-4-4	P1G0085-07	Soil	07/03/01 12:30	07/03/01 15:34
EX-SW-5-4	P1G0085-08	Soil	07/03/01 12:45	07/03/01 15:34
EX-SW-6-6.5	P1G0085-09	Soil	07/03/01 13:00	07/03/01 15:34
EX-SW-7-4	P1G0085-10	Soil	07/03/01 13:15	07/03/01 15:34
EX-SW-8-1	P1G0085-11	Soil	07/03/01 13:25	07/03/01 15:34
EX-SW-9-3	P1G0085-12	Soil	07/03/01 13:40	07/03/01 15:34
EX-SW-10-3	P1G0085-13	Soil	07/03/01 13:50	07/03/01 15:34

North Creek Analytical - Portland

Crystal Burkholder, Project Manager

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-FL-4-6.5 (P1G0085-01) Soil					Sampled: 07/03/01 Received: 07/03/01				
Benzene	ND	5.00	mg/kg dry	100	NW-G, 8021B	07/04/01	07/04/01	1070895	
Toluene	**7.34**	5.00	"	"	"	"	"	"	
Ethylbenzene	**5.29**	5.00	"	"	"	"	"	"	
Xylenes (total)	**31.8**	5.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**2140**	200	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*
EX-FL-5-6 (P1G0085-02) Soil					Sampled: 07/03/01 Received: 07/03/01				
Benzene	ND	5.00	mg/kg dry	100	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	**21.1**	5.00	"	"	"	"	"	"	
Ethylbenzene	**15.9**	5.00	"	"	"	"	"	"	
Xylenes (total)	**105**	5.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**4840**	200	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*
EX-FL-6-5 (P1G0085-03) Soil					Sampled: 07/03/01 Received: 07/03/01				
Benzene	ND	0.100	mg/kg dry	2	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	**0.206**	0.100	"	"	"	"	"	"	
Ethylbenzene	**0.154**	0.100	"	"	"	"	"	"	
Xylenes (total)	**0.297**	0.100	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**45.7**	4.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*88.1 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*101 %*	*50-150*							

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-FL-7-6 (P1G0085-04) Soil					Sampled: 07/03/01 Received: 07/03/01				
Benzene	ND	2.50	mg/kg dry	50	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	ND	2.50	"	"	"	"	"	"	
Ethylbenzene	**3.13**	2.50	"	"	"	"	"	"	
Xylenes (total)	**19.0**	2.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**1320**	100	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*
EX-FL-8-8 (P1G0085-05) Soil					Sampled: 07/03/01 Received: 07/03/01				
Benzene	ND	2.50	mg/kg dry	50	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	ND	2.50	"	"	"	"	"	"	
Ethylbenzene	**2.89**	2.50	"	"	"	"	"	"	
Xylenes (total)	**19.2**	2.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**1190**	100	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*
EX-SW-3-5 (P1G0085-06) Soil					Sampled: 07/03/01 Received: 07/03/01				
Benzene	ND	1.00	mg/kg dry	20	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	ND	1.00	"	"	"	"	"	"	
Ethylbenzene	**1.67**	1.00	"	"	"	"	"	"	
Xylenes (total)	**9.99**	1.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**1210**	40.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-SW-4-4 (P1G0085-07) Soil						Sampled: 07/03/01	Received: 07/03/01		
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**3.84**	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*85.0 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*81.2 %*	*50-150*							
EX-SW-5-4 (P1G0085-08) Soil						Sampled: 07/03/01	Received: 07/03/01		
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**4.88**	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*82.6 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*83.3 %*	*50-150*							
EX-SW-6-6.5 (P1G0085-09) Soil						Sampled: 07/03/01	Received: 07/03/01		
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*91.9 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*113 %*	*50-150*							

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-SW-7-4 (P1G0085-10) Soil						Sampled: 07/03/01	Received: 07/03/01		
Benzene	ND	0.500	mg/kg dry	10	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	**2.83**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**836**	20.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*117 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*130 %*	*50-150*							
EX-SW-8-1 (P1G0085-11) Soil						Sampled: 07/03/01	Received: 07/03/01		
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**4.05**	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*82.2 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*81.5 %*	*50-150*							
EX-SW-9-3 (P1G0085-12) Soil						Sampled: 07/03/01	Received: 07/03/01		
Benzene	ND	0.0500	mg/kg dry	1	NW-G, 8021B	07/04/01	07/06/01	1070895	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.0500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	2.00	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*85.2 %*	*75-120*							
Surr: a,a,a-TFT (FID)	*82.2 %*	*50-150*							

North Creek Analytical - Portland

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-SW-10-3 (P1G0085-13) Soil					Sampled: 07/03/01 Received: 07/03/01				
Benzene	ND	1.00	mg/kg dry	20	NW-G, 8021B	07/04/01	07/05/01	1070895	
Toluene	ND	1.00	"	"	"	"	"	"	
Ethylbenzene	ND	1.00	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**703**	40.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*NR*	*75-120*							*S-01*
Surr: a,a,a-TFT (FID)	*NR*	*50-150*							*S-01*

North Creek Analytical - Portland

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-FL-4-6.5 (P1G0085-01) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	**63000**	2000	mg/kg dry	20	NWTPH-Dx	07/03/01	07/06/01	1070881	R-02
Heavy Oil Range Hydrocarbons	**11000**	4000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
EX-FL-5-6 (P1G0085-02) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	**56200**	2000	mg/kg dry	20	NWTPH-Dx	07/03/01	07/06/01	1070881	A-01,R-02
Heavy Oil Range Hydrocarbons	ND	4000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
EX-FL-6-5 (P1G0085-03) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/03/01	07/06/01	1070881	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*89.7 %*	*50-150*							
EX-FL-7-6 (P1G0085-04) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	**15000**	250	mg/kg dry	10	NWTPH-Dx	07/03/01	07/06/01	1070881	A-02,R-02
Heavy Oil Range Hydrocarbons	**2660**	500	"	"	"	"	"	"	A-02
Surr: 1-Chlorooctadecane	*152 %*	*50-150*							*S-06*
EX-FL-8-8 (P1G0085-05) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	**15800**	250	mg/kg dry	10	NWTPH-Dx	07/03/01	07/06/01	1070881	A-02,R-02
Heavy Oil Range Hydrocarbons	**3130**	500	"	"	"	"	"	"	A-02,R-02
Surr: 1-Chlorooctadecane	*160 %*	*50-150*							*S-06*
EX-SW-3-5 (P1G0085-06) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	**13500**	500	mg/kg dry	20	NWTPH-Dx	07/03/01	07/09/01	1070881	A-02,R-02
Heavy Oil Range Hydrocarbons	**3460**	1000	"	"	"	"	"	"	A-02,R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

North Creek Analytical - Portland

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-SW-4-4 (P1G0085-07) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/03/01	07/06/01	1070881	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*93.9 %*	*50-150*							
EX-SW-5-4 (P1G0085-08) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/03/01	07/06/01	1070881	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*96.6 %*	*50-150*							
EX-SW-6-6.5 (P1G0085-09) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/03/01	07/06/01	1070881	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*97.1 %*	*50-150*							
EX-SW-7-4 (P1G0085-10) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	**7380**	500	mg/kg dry	20	NWTPH-Dx	07/03/01	07/09/01	1070881	A-02,R-02
Heavy Oil Range Hydrocarbons	ND	1000	"	"	"	"	"	"	A-02,R-02
Surr: 1-Chlorooctadecane	*108 %*	*50-150*							
EX-SW-8-1 (P1G0085-11) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/03/01	07/06/01	1070881	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*101 %*	*50-150*							
EX-SW-9-3 (P1G0085-12) Soil					Sampled: 07/03/01 Received: 07/03/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/03/01	07/06/01	1070881	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*102 %*	*50-150*							

North Creek Analytical - Portland

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-SW-10-3 (P1G0085-13) Soil						Sampled: 07/03/01	Received: 07/03/01		
Diesel Range Organics	**18800**	1000	mg/kg dry	40	NWTPH-Dx	07/03/01	07/09/01	1070881	A-02,R-02
Heavy Oil Range Hydrocarbons	**2080**	2000	"	"	"	"	"	"	A-02,R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

North Creek Analytical - Portland

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-FL-4-6.5 (P1G0085-01) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**87.0**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-FL-5-6 (P1G0085-02) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**81.7**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-FL-6-5 (P1G0085-03) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**93.5**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-FL-7-6 (P1G0085-04) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**94.2**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-FL-8-8 (P1G0085-05) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**92.1**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-SW-3-5 (P1G0085-06) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**92.4**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-SW-4-4 (P1G0085-07) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**94.3**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-SW-5-4 (P1G0085-08) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**94.9**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-SW-6-6.5 (P1G0085-09) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**92.8**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
EX-SW-7-4 (P1G0085-10) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**94.4**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-SW-8-1 (P1G0085-11) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**92.4**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-SW-9-3 (P1G0085-12) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**92.6**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	
EX-SW-10-3 (P1G0085-13) Soil					Sampled: 07/03/01 Received: 07/03/01				
% Solids	**88.3**	1.00	% by Weight	1	NCA SOP	07/03/01	07/05/01	1070876	

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1070895 - EPA 5035										
Blank (1070895-BLK1)				Prepared & Analyzed: 07/04/01						
Benzene	ND	0.0500	mg/kg							
Toluene	ND	0.0500	"							
Ethylbenzene	ND	0.0500	"							
Xylenes (total)	ND	0.0500	"							
Gasoline Range Hydrocarbons	ND	2.00	"							
Surr: a,a,a-TFT (PID)	*1.08*		"	*1.25*		*86.4*	*75-120*			
Surr: a,a,a-TFT (FID)	*1.02*		"	*1.25*		*81.6*	*50-150*			
LCS (1070895-BS1)				Prepared & Analyzed: 07/04/01						
Gasoline Range Hydrocarbons	31.2	2.00	mg/kg	31.2		100	65-130			
Surr: a,a,a-TFT (FID)	*2.43*		"	*1.25*		*194*	*50-150*			*S-09*
LCS (1070895-BS2)				Prepared & Analyzed: 07/04/01						
Benzene	0.430	0.0500	mg/kg	0.500		86.0	65-130			
Toluene	0.428	0.0500	"	0.500		85.6	65-130			
Ethylbenzene	0.423	0.0500	"	0.500		84.6	65-130			
Xylenes (total)	1.25	0.0500	"	1.50		83.3	65-130			
Surr: a,a,a-TFT (PID)	*1.15*		"	*1.25*		*92.0*	*75-120*			
Duplicate (1070895-DUP1)		**Source: P1G0085-01**		Prepared & Analyzed: 07/04/01						
Gasoline Range Hydrocarbons	2420	200	mg/kg dry		2140			12.3	50	
Surr: a,a,a-TFT (FID)	*0.00*		"	*1.44*			*50-150*			*S-01*
Duplicate (1070895-DUP2)		**Source: P1G0085-02**		Prepared: 07/04/01 Analyzed: 07/05/01						
Gasoline Range Hydrocarbons	4930	200	mg/kg dry		4840			1.84	50	
Surr: a,a,a-TFT (FID)	*0.00*		"	*1.53*			*50-150*			*S-01*
Matrix Spike (1070895-MS1)		**Source: P1G0085-03**		Prepared: 07/04/01 Analyzed: 07/05/01						
Benzene	0.566	0.100	mg/kg dry	0.535	ND	92.1	65-130			
Toluene	0.591	0.100	"	0.535	0.206	72.0	65-130			
Ethylbenzene	0.630	0.100	"	0.535	0.154	89.0	65-130			
Xylenes (total)	1.91	0.100	"	1.60	0.297	101	65-130			
Surr: a,a,a-TFT (PID)	*1.53*		"	*1.34*		*114*	*75-120*			

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1070895 - EPA 5035										
Matrix Spike Dup (1070895-MSD1)	**Source: P1G0085-03**			Prepared: 07/04/01		Analyzed: 07/05/01				
Benzene	0.625	0.100	mg/kg dry	0.535	ND	103	65-130	9.91	20	
Toluene	0.629	0.100	"	0.535	0.206	79.1	65-130	6.23	20	
Ethylbenzene	0.665	0.100	"	0.535	0.154	95.5	65-130	5.41	20	
Xylenes (total)	2.04	0.100	"	1.60	0.297	109	65-130	6.58	20	
Surr: a,a,a-TFT (PID)	*1.34*		"	*1.34*		*100*	*75-120*			

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1070881 - EPA 3550 Fuels										
Blank (1070881-BLK1)				Prepared: 07/03/01 Analyzed: 07/06/01						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.33*		"	*4.80*		*90.2*	*50-150*			
LCS (1070881-BS1)				Prepared: 07/03/01 Analyzed: 07/06/01						
Diesel Range Organics	118	25.0	mg/kg	129		91.5	50-150			
Heavy Oil Range Hydrocarbons	56.7	50.0	"	79.0		71.8	50-150			
Surr: 1-Chlorooctadecane	*5.18*		"	*4.80*		*108*	*50-150*			
Duplicate (1070881-DUP1)	**Source: P1G0085-01**			Prepared: 07/03/01 Analyzed: 07/06/01						
Diesel Range Organics	55800	2000	mg/kg dry		63000			12.1	50	R-02
Heavy Oil Range Hydrocarbons	11200	4000	"		11000			1.80	50	R-02
Surr: 1-Chlorooctadecane	*0.00*		"	*22.1*			*50-150*			*S-01*
Duplicate (1070881-DUP2)	**Source: P1G0085-10**			Prepared: 07/03/01 Analyzed: 07/09/01						
Diesel Range Organics	8010	500	mg/kg dry		7380			8.19	50	
Heavy Oil Range Hydrocarbons	ND	1000	"		ND			8.68	50	
Surr: 1-Chlorooctadecane	*5.74*		"	*5.09*		*113*	*50-150*			

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1070876 - Dry Weight										
Duplicate (1070876-DUP1)		**Source: P1G0073-01**		Prepared: 07/03/01 Analyzed: 07/05/01						
% Solids	87.0	1.00	% by Weight		85.3			1.97	20	

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/10/01 12:55

Notes and Definitions

A-01	Detected hydrocarbons appear to be due to weathered gas as well as weathered diesel.
A-02	Detected hydrocarbons appear to be due to bunker oil or similar fuel oil.
R-02	The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
S-09	Surrogate recovery is outside control limits due to matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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PL60085

TOSCO CHAIN OF CUSTODY REPORT

TOSCO INFORMATION

Facility Number: PDX Terminal
Site Address:
City, State, ZIP: Portland, OR
Project/AWO Code
Tosco Manager: Marty Cramer
FACILITY TYPE: (check one) ☐ BP/Ⓚ ☒ Terminal/Bulk Plant
☐ Brown Bear ☐ Former 76 Site ☐ Other

CONSULTANT INFORMATION

Firm: GeoEngineers Project# 4823-030-00 TASK 1700
Address: 7504 SW Bridgeport Rd
Portland, OR 97224
Phone: 503-6688 Fax: 620-5940
Project Manager: Kyle Smith E-mail: KSmith@GeoEngineers.com
Sample Collection by: KRS

Quality Assurance Data Level:
A: Standard Summary
B: Standard + Chromatograms

Laboratory Turnaround Days:
10 | 5 | 3 | 2 | 1
10 Day - Standard

☒ OR ○ WA ○ AK ☒ NW Series ○ ID

SAMPLE INDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONTAINERS	TPH-HCID	TPH-Gas	BTEX EPA 8021 Mod. TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS Semi Vols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved TCLP or RCRA Metals: (8)	NCA SAMPLE NUMBER
1. EX-FL-4-6.5	7/3/01 10:55	S	2		X	X			X							
2. EX-FL-5-6	11:15				X	X			X							
3. EX-FL-6-5	11:30				X	X			X							
4. EX-FL-7-6	11:45				X	X			X							
5. EX-FL-8-8	12:00				X	X			X							
6. EX-SW-3-5	12:15				X	X			X							
7. EX-SW-4-4	12:30				X	X			X							
8. EX-SW-5-4	12:45				X	X			X							
9. EX-SW-6-6.5	13:00				X	X			X							
10. EX-SW-7-4	13:15				X	X			X							

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.		GEC	7/4/01 3:30	Rachel Amick	NCA	7/3/01 15:34
2.						
3.						

Comments: Call KRS w/ results — Follow up required

Page 1 of 2

Comments: Run follow up on samples with highest Gx & Dx

Rev. Tos3.3.2/99

Distribution: White - Laboratory Yellow - Consultant Photocopy - Tosco

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P1G0085

TOSCO CHAIN OF CUSTODY REPORT

TOSCO INFORMATION

Facility Number: POX Terminal
Site Address:
City, State, ZIP: Portland, OR
Project/AWO Code
Tosco Manager: Marty Cramer
FACILITY TYPE: (check one) ☐ BP/Ⓚ ☒ Terminal/Bulk Plant
☐ Brown Bear ☐ Former 76 Site ☐ Other

CONSULTANT INFORMATION

Firm: GET Project# 4823-01.100
Address: TASK 1700
Phone: 653-4688 Fax: 620-5740
Project Manager: KRS E-mail:
Sample Collection by: KRS

Quality Assurance Data Level: (A) B
A: Standard Summary
B: Standard + Chromatograms

Laboratory Turnaround Days: 10 5 3 2 (1)
10 Day - Standard

○ OR ○ WA ○ AK ○ NW Series ○ ID

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONTAINERS	TPH-HCID	TPH-Gas	BTEX EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS Semi Vols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved TCLP or RCRA Metals (8)	NCA SAMPLE NUMBER
1. EX-SW-8-1	7/3/01 13:25	S	2		X	X				X							
2. EX-SW-9-3	13:40				X	X				X							
3. EX-SW-10-3	13:50				X	X				X							
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.	[signature]	GET	7/3/01 3:30	Rachel Clark	NCA	7/3/01 15:34
2.						
3.						

Comments: Call KRS w/results — follow up required

Page 2 of 2
Rev. Tos3.3.2/99

Comments: Run Follow Up on Samples w/ highest Gx & Dx

Distribution: White - Laboratory Yellow - Consultant Photocopy - Tosco

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/23/01 16:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GP-1 (21-24)	P1G0371-01	Soil	07/11/01 10:00	07/12/01 12:42
GP-1 (9-12)	P1G0371-02	Soil	07/11/01 09:45	07/12/01 12:42
GP-2 (21-24)	P1G0371-03	Soil	07/11/01 11:40	07/12/01 12:42
GP-2 (9-12)	P1G0371-04	Soil	07/11/01 11:25	07/12/01 12:42
GP-3 (21-24)	P1G0371-05	Soil	07/11/01 13:00	07/12/01 12:42
GP-3 (9-12)	P1G0371-06	Soil	07/11/01 12:40	07/12/01 12:42
GP-4 (21-24)	P1G0371-07	Soil	07/11/01 14:15	07/12/01 12:42
GP-4 (9-12)	P1G0371-08	Soil	07/11/01 14:00	07/12/01 12:42
GP-5 (22-24)	P1G0371-09	Soil	07/11/01 16:05	07/12/01 12:42
GP-5 (9-12)	P1G0371-10	Soil	07/11/01 15:45	07/12/01 12:42

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/23/01 16:12

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP-1 (21-24) (P1G0371-01) Soil					Sampled: 07/11/01 Received: 07/12/01				
Diesel Range Organics	**21500**	1250	mg/kg dry	50	NWTPH-Dx	07/16/01	07/19/01	1071323	R-02
Heavy Oil Range Hydrocarbons	ND	2500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
GP-1 (9-12) (P1G0371-02) Soil					Sampled: 07/11/01 Received: 07/12/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/16/01	07/19/01	1071323	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*89.5 %*	*50-150*							
GP-2 (21-24) (P1G0371-03) Soil					Sampled: 07/11/01 Received: 07/12/01				
Diesel Range Organics	**15500**	1000	mg/kg dry	40	NWTPH-Dx	07/16/01	07/19/01	1071323	R-02
Heavy Oil Range Hydrocarbons	ND	2000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
GP-2 (9-12) (P1G0371-04) Soil					Sampled: 07/11/01 Received: 07/12/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/16/01	07/19/01	1071323	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*87.0 %*	*50-150*							
GP-3 (21-24) (P1G0371-05) Soil					Sampled: 07/11/01 Received: 07/12/01				
Diesel Range Organics	**6880**	250	mg/kg dry	10	NWTPH-Dx	07/16/01	07/20/01	1071323	R-02
Heavy Oil Range Hydrocarbons	ND	500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*114 %*	*50-150*							
GP-3 (9-12) (P1G0371-06) Soil					Sampled: 07/11/01 Received: 07/12/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/16/01	07/19/01	1071323	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*88.5 %*	*50-150*							

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/23/01 16:12

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP-4 (21-24) (P1G0371-07) Soil					Sampled: 07/11/01 Received: 07/12/01				
Diesel Range Organics	**26300**	1250	mg/kg dry	50	NWTPH-Dx	07/16/01	07/19/01	1071323	R-02
Heavy Oil Range Hydrocarbons	ND	2500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
GP-4 (9-12) (P1G0371-08) Soil					Sampled: 07/11/01 Received: 07/12/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/16/01	07/19/01	1071323	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*82.7 %*	*50-150*							
GP-5 (22-24) (P1G0371-09) Soil					Sampled: 07/11/01 Received: 07/12/01				
Diesel Range Organics	**19800**	1250	mg/kg dry	50	NWTPH-Dx	07/16/01	07/20/01	1071323	R-02
Heavy Oil Range Hydrocarbons	ND	2500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
GP-5 (9-12) (P1G0371-10) Soil					Sampled: 07/11/01 Received: 07/12/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/16/01	07/19/01	1071323	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*99.6 %*	*50-150*							

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/23/01 16:12

Percent Dry Weight (Solids) per Standard Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP-1 (21-24) (P1G0371-01) Soil					Sampled: 07/11/01 Received: 07/12/01				
% Solids	**82.3**	1.00	% by Weight	1	NCA SOP	07/13/01	07/13/01	1071229	
GP-1 (9-12) (P1G0371-02) Soil					Sampled: 07/11/01 Received: 07/12/01				
% Solids	**91.3**	1.00	% by Weight	1	NCA SOP	07/13/01	07/13/01	1071229	
GP-2 (21-24) (P1G0371-03) Soil					Sampled: 07/11/01 Received: 07/12/01				
% Solids	**78.8**	1.00	% by Weight	1	NCA SOP	07/13/01	07/13/01	1071229	
GP-2 (9-12) (P1G0371-04) Soil					Sampled: 07/11/01 Received: 07/12/01				
% Solids	**72.8**	1.00	% by Weight	1	NCA SOP	07/13/01	07/13/01	1071229	
GP-3 (21-24) (P1G0371-05) Soil					Sampled: 07/11/01 Received: 07/12/01				
% Solids	**81.1**	1.00	% by Weight	1	NCA SOP	07/13/01	07/13/01	1071229	
GP-3 (9-12) (P1G0371-06) Soil					Sampled: 07/11/01 Received: 07/12/01				
% Solids	**91.9**	1.00	% by Weight	1	NCA SOP	07/13/01	07/13/01	1071229	
GP-4 (21-24) (P1G0371-07) Soil					Sampled: 07/11/01 Received: 07/12/01				
% Solids	**83.0**	1.00	% by Weight	1	NCA SOP	07/13/01	07/13/01	1071229	
GP-4 (9-12) (P1G0371-08) Soil					Sampled: 07/11/01 Received: 07/12/01				
% Solids	**91.1**	1.00	% by Weight	1	NCA SOP	07/13/01	07/13/01	1071229	
GP-5 (22-24) (P1G0371-09) Soil					Sampled: 07/11/01 Received: 07/12/01				
% Solids	**78.3**	1.00	% by Weight	1	NCA SOP	07/13/01	07/13/01	1071229	

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/23/01 16:12

Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP-5 (9-12) (P1G0371-10) Soil						Sampled: 07/11/01	Received: 07/12/01		
% Solids	**92.2**	1.00	% by Weight	1	NCA SOP	07/13/01	07/13/01	1071229	

North Creek Analytical - Portland

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/23/01 16:12

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071323 - EPA 3550 Fuels										
Blank (1071323-BLK1)				Prepared: 07/16/01 Analyzed: 07/19/01						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*3.95*		"	*4.80*		*82.3*	*50-150*			
LCS (1071323-BS1)				Prepared: 07/16/01 Analyzed: 07/19/01						
Diesel Range Organics	106	25.0	mg/kg	129		82.2	50-150			
Heavy Oil Range Hydrocarbons	52.6	50.0	"	79.0		66.6	50-150			
Surr: 1-Chlorooctadecane	*3.95*		"	*4.80*		*82.3*	*50-150*			
Duplicate (1071323-DUP1)		**Source: P1G0377-01**		Prepared: 07/16/01 Analyzed: 07/20/01						
Diesel Range Organics	32.6	25.0	mg/kg dry		74.5			78.2	50	Q-14
Heavy Oil Range Hydrocarbons	ND	50.0	"		68.8			90.0	50	Q-16
Surr: 1-Chlorooctadecane	*4.47*		"	*5.56*		*80.4*	*50-150*			
Duplicate (1071323-DUP2)		**Source: P1G0469-02**		Prepared: 07/16/01 Analyzed: 07/20/01						
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*5.27*		"	*5.58*		*94.4*	*50-150*			

North Creek Analytical - Portland

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/23/01 16:12

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071229 - Dry Weight										
Duplicate (1071229-DUP1)		**Source: P1G0288-01**		Prepared & Analyzed: 07/13/01						
% Solids	69.2	1.00	% by Weight		67.6			2.34	20	
Duplicate (1071229-DUP2)		**Source: P1G0323-01**		Prepared & Analyzed: 07/13/01						
% Solids	85.3	1.00	% by Weight		84.1			1.42	20	
Duplicate (1071229-DUP3)		**Source: P1G0323-02**		Prepared & Analyzed: 07/13/01						
% Solids	82.2	1.00	% by Weight		83.0			0.969	20	

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	07/23/01 16:12

Notes and Definitions

Q-14	The Spike Recovery and/or RPD is outside of control limits due to a non-homogeneous sample matrix.
Q-16	RPD is not applicable for analyte concentrations less than 5 times the MRL.
R-02	The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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MIG0511

TOSCO CHAIN OF CUSTODY REPORT

TOSCO INFORMATION

Facility Number: Portland Terminal
Site Address:
City, State, ZIP: Portland, OR
Project/AWO Code
Tosco Manager: Mark Cramer
FACILITY TYPE: (check one) ☐ BP/Ⓚ ☒ Terminal/Bulk Plant
☐ Brown Bear ☐ Former 76 Site ☐ Other

CONSULTANT INFORMATION

Firm: GeoEngineers Project# 4823-030-00
Address: 7504 SW Bridgeport Rd
Portland, Or 97224
Phone: 503-624-9274 Fax: 503-620-5940
Project Manager: Kyle Smith E-mail: Ksmith@geoengineers.com
Sample Collection by: KRS

Quality Assurance Data Level: (A) B
A: Standard Summary
B: Standard + Chromatograms

Laboratory Turnaround Days: (10) 5 3 2 1
10 Day - Standard

○ OR ○ WA ○ AK ☒ NW Series ○ ID

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONTAINERS	TPH-HCID	TPH-Gas	BTEX EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS SemiVols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved	TCLP or RCRA Metals (8)	NCA SAMPLE NUMBER
1. GP-1 (21-24)	7/11/01 10:00	S	1							X								
2. GP-1 (9-12)	7/11/01 9:45	S	1							X								
3. GP-2 (21-24)	7/11/01 11:40	S	1							X								
4. GP-2 (9-12)	7/11/01 11:25	S	1							X								
5. GP-3 (21-24)	7/11/01 13:00	S	1							X								
6. GP-3 (9-12)	7/11/01 12:40	S	1							X								
7. GP-4 (21-24)	7/11/01 14:15	S	1							X								
8. GP-4 (9-12)	7/11/01 14:00	S	1							X								
9. GP-5 (22-24)	7/11/01 16:05	S	1							X								
10. GP-5 (9-12)	7/11/01 15:45	S	1							X								

Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.	GEI	7/12/01 11:00	Rachel Amick	NCA	7/12/01 12:42
2.					
3.					

Comments:

7.7

Page 1 of 1
Rev. Tbs3.3.2/99

Comments:

Distribution: White - Laboratory Yellow - Consultant Photocopy - Tosco

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	08/06/01 10:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GP-6 (14-16)	P1G0929-01	Soil	07/25/01 09:45	07/27/01 12:00
GP-6 (22-24)	P1G0929-02	Soil	07/25/01 09:55	07/27/01 12:00
GP-7 (14-16)	P1G0929-03	Soil	07/25/01 10:45	07/27/01 12:00
GP-7 (22-24)	P1G0929-04	Soil	07/25/01 10:55	07/27/01 12:00
GP-8 (14-16)	P1G0929-05	Soil	07/25/01 13:25	07/27/01 12:00
GP-8 (22-24)	P1G0929-06	Soil	07/25/01 13:35	07/27/01 12:00
GP-9 (14-16)	P1G0929-07	Soil	07/25/01 14:15	07/27/01 12:00
GP-9 (22-24)	P1G0929-08	Soil	07/25/01 14:25	07/27/01 12:00

North Creek Analytical - Portland

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	08/06/01 10:34

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP-6 (14-16) (P1G0929-01) Soil					Sampled: 07/25/01 Received: 07/27/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/27/01	07/30/01	1071806	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*86.0 %*	*50-150*							
GP-6 (22-24) (P1G0929-02) Soil					Sampled: 07/25/01 Received: 07/27/01				
Diesel Range Organics	**580**	25.0	mg/kg dry	1	NWTPH-Dx	07/27/01	07/30/01	1071806	
Heavy Oil Range Hydrocarbons	**54.1**	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*85.7 %*	*50-150*							
GP-7 (14-16) (P1G0929-03) Soil					Sampled: 07/25/01 Received: 07/27/01				
Diesel Range Organics	**53.9**	25.0	mg/kg dry	1	NWTPH-Dx	07/27/01	07/31/01	1071806	D-16
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*102 %*	*50-150*							
GP-7 (22-24) (P1G0929-04) Soil					Sampled: 07/25/01 Received: 07/27/01				
Diesel Range Organics	**13700**	1000	mg/kg dry	40	NWTPH-Dx	07/27/01	07/31/01	1071806	R-02
Heavy Oil Range Hydrocarbons	ND	2000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
GP-8 (14-16) (P1G0929-05) Soil					Sampled: 07/25/01 Received: 07/27/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/27/01	07/31/01	1071806	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*85.5 %*	*50-150*							
GP-8 (22-24) (P1G0929-06) Soil					Sampled: 07/25/01 Received: 07/27/01				
Diesel Range Organics	**216**	25.0	mg/kg dry	1	NWTPH-Dx	07/27/01	07/31/01	1071806	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*78.7 %*	*50-150*							

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	08/06/01 10:34

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP-9 (14-16) (P1G0929-07) Soil					Sampled: 07/25/01 Received: 07/27/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/27/01	07/31/01	1071806	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*89.9 %*	*50-150*							
GP-9 (22-24) (P1G0929-08) Soil					Sampled: 07/25/01 Received: 07/27/01				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	07/27/01	07/30/01	1071806	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*100 %*	*50-150*							

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	08/06/01 10:34

Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP-6 (14-16) (P1G0929-01) Soil					Sampled: 07/25/01 Received: 07/27/01				
% Solids	**92.0**	1.00	% by Weight	1	NCA SOP	07/31/01	08/01/01	1071918	
GP-6 (22-24) (P1G0929-02) Soil					Sampled: 07/25/01 Received: 07/27/01				
% Solids	**77.9**	1.00	% by Weight	1	NCA SOP	07/31/01	08/01/01	1071918	
GP-7 (14-16) (P1G0929-03) Soil					Sampled: 07/25/01 Received: 07/27/01				
% Solids	**88.3**	1.00	% by Weight	1	NCA SOP	07/31/01	08/01/01	1071918	
GP-7 (22-24) (P1G0929-04) Soil					Sampled: 07/25/01 Received: 07/27/01				
% Solids	**79.4**	1.00	% by Weight	1	NCA SOP	07/31/01	08/01/01	1071918	
GP-8 (14-16) (P1G0929-05) Soil					Sampled: 07/25/01 Received: 07/27/01				
% Solids	**92.5**	1.00	% by Weight	1	NCA SOP	07/31/01	08/01/01	1071918	
GP-8 (22-24) (P1G0929-06) Soil					Sampled: 07/25/01 Received: 07/27/01				
% Solids	**75.7**	1.00	% by Weight	1	NCA SOP	07/31/01	08/01/01	1071918	
GP-9 (14-16) (P1G0929-07) Soil					Sampled: 07/25/01 Received: 07/27/01				
% Solids	**91.5**	1.00	% by Weight	1	NCA SOP	07/31/01	08/01/01	1071918	
GP-9 (22-24) (P1G0929-08) Soil					Sampled: 07/25/01 Received: 07/27/01				
% Solids	**77.6**	1.00	% by Weight	1	NCA SOP	07/31/01	08/01/01	1071918	

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	08/06/01 10:34

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071806 - EPA 3550 Fuels										
Blank (1071806-BLK1)				Prepared: 07/27/01 Analyzed: 07/30/01						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.17*		"	*4.80*		*86.9*	*50-150*			
LCS (1071806-BS1)				Prepared: 07/27/01 Analyzed: 07/30/01						
Diesel Range Organics	108	25.0	mg/kg	129		83.7	50-150			
Heavy Oil Range Hydrocarbons	59.1	50.0	"	79.0		74.8	50-150			
Surr: 1-Chlorooctadecane	*3.73*		"	*4.80*		*77.7*	*50-150*			
Duplicate (1071806-DUP1)		**Source: P1G0929-01**		Prepared: 07/27/01 Analyzed: 07/30/01						
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	*4.43*		"	*5.22*		*84.9*	*50-150*			

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	08/06/01 10:34

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071918 - Dry Weight										
Duplicate (1071918-DUP1)		**Source: P1G0931-26**		Prepared: 07/31/01	Analyzed: 08/01/01					
% Solids	97.3	1.00	% by Weight		97.5			0.205	20	
Duplicate (1071918-DUP2)		**Source: P1G0929-04**		Prepared: 07/31/01	Analyzed: 08/01/01					
% Solids	79.9	1.00	% by Weight		79.4			0.628	20	
Duplicate (1071918-DUP3)		**Source: P1G0931-56**		Prepared: 07/31/01	Analyzed: 08/01/01					
% Solids	96.7	1.00	% by Weight		97.5			0.824	20	
Duplicate (1071918-DUP4)		**Source: P1G0931-52**		Prepared: 07/31/01	Analyzed: 08/01/01					
% Solids	97.3	1.00	% by Weight		94.6			2.81	20	
Duplicate (1071918-DUP5)		**Source: P1G0901-01**		Prepared: 07/31/01	Analyzed: 08/01/01					
% Solids	84.6	1.00	% by Weight		83.5			1.31	20	

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	08/06/01 10:34

Notes and Definitions

D-16	Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel.
R-02	The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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Environmental Laboratory Services

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P1G0929

TOSCO CHAIN OF CUSTODY REPORT

TOSCO INFORMATION

Facility Number: Portland Terminal
Site Address:
City, State, ZIP: Portland, OR
Site Release Number:
Tosco Manager: Marty Cramer
CERT INFO: (check one) [X] Evaluation [ ] Remediation [ ] Detection [ ] Demolition [ ] Closure [ ] Miscellaneous

CONSULTANT INFORMATION

Firm: GeoEngineers Project# 4823-030-00
Address: 7504 SW Bridgeport, Rd
Portland, OR 97224
Phone: 603-6688 Fax: 620-5940
Project Manager: Kyle Sattler
Sample Collection by: KRS

Chain of Custody Record #:

Quality Assurance Data Level: A B
A: Standard Summary
B: Standard + Chromatograms

Laboratory Turnaround Days: 10 5 3 2 1

○ OR ○ WA ○ AK ☒ NW Series

SAMPLE INDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CON-TAINERS	TPH-HCID	TPH-Gas	BTEX EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS SemiVols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved	TCLP or RCRA Metals (8)	NCA SAMPLE NUMBER
1. GP-6(14-16)	7/25/01 9:45	S	1							X								
2. GP-6(22-24)	7/25/01 9:55	S	1							X								
3. GP-7(14-16)	7/25/01 10:45	S	1							X								
4. GP-7(22-24)	7/25/01 10:55	S	1							X								
5. GP-8(14-16)	7/25/01 13:25	S	1							X								
6. GP-8(22-24)	7/25/01 13:35	S	1							X								
7. GP-9(14-16)	7/25/01 14:15	S	1							X								
8. GP-9(22-24)	7/25/01 14:25	S	1							X								
9.																		
10.																		

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.	[signature]	GEI	7/27/01 10:30	Sarah Passarge	NCA	7/27/01 1200
2.				[signature]		
3.						

Final Report Approval

Were all requested results provided? yes no Define
Were results within requested turnaround? yes no "No"
Final Approval Signature: on back

Firm: Date:

Page____of____
Rev. Tos3.3.5/98

Comments: 27

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	09/25/01 16:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GP-1	P1G0973-01	Other wet	07/30/01 10:00	07/30/01 11:30
GP-3	P1G0973-02	Other wet	07/30/01 09:50	07/30/01 11:30
GP-6	P1G0973-03	Other wet	07/30/01 09:40	07/30/01 11:30
GP-7	P1G0973-04	Other wet	07/30/01 10:10	07/30/01 11:30
HA-1	P1G0973-05	Other wet	07/30/01 10:20	07/30/01 11:30

North Creek Analytical - Portland

Crystal Burkholder, Project Manager

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	09/25/01 16:22

Hydrocarbon Identification per NW-TPH Methodology
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP-1 (P1G0973-01) Other wet						Sampled: 07/30/01	Received: 07/30/01		
Gasoline Range Hydrocarbons	**DET**	1820	mg/kg wet	1	NWTPH HCID	07/30/01	07/30/01	1071880	
Diesel Range Hydrocarbons	**DET**	4550	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	**DET**	9090	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*119 %*	*50-150*							
GP-3 (P1G0973-02) Other wet						Sampled: 07/30/01	Received: 07/30/01		
Gasoline Range Hydrocarbons	**DET**	1670	mg/kg wet	1	NWTPH HCID	07/30/01	07/30/01	1071880	
Diesel Range Hydrocarbons	**DET**	4170	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	**DET**	8330	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*122 %*	*50-150*							
GP-6 (P1G0973-03) Other wet						Sampled: 07/30/01	Received: 07/30/01		
Gasoline Range Hydrocarbons	**DET**	2000	mg/kg wet	1	NWTPH HCID	07/30/01	07/30/01	1071880	
Diesel Range Hydrocarbons	**DET**	5000	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	**DET**	10000	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*106 %*	*50-150*							
GP-7 (P1G0973-04) Other wet						Sampled: 07/30/01	Received: 07/30/01		
Gasoline Range Hydrocarbons	**DET**	1820	mg/kg wet	1	NWTPH HCID	07/30/01	07/30/01	1071880	
Diesel Range Hydrocarbons	**DET**	4550	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	**DET**	9090	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*102 %*	*50-150*							
HA-1 (P1G0973-05) Other wet						Sampled: 07/30/01	Received: 07/30/01		
Gasoline Range Hydrocarbons	**DET**	2000	mg/kg wet	1	NWTPH HCID	07/30/01	07/30/01	1071880	
Diesel Range Hydrocarbons	**DET**	5000	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	**DET**	10000	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*107 %*	*50-150*							

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	09/25/01 16:22

Hydrocarbon Identification per NW-TPH Methodology - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071880 - TPH-HCID Extraction										
Blank (1071880-BLK1)				Prepared & Analyzed: 07/30/01						
Gasoline Range Hydrocarbons	ND	20.0	mg/kg							
Diesel Range Hydrocarbons	ND	50.0	"							
Heavy Oil Range Hydrocarbons	ND	100	"							
Surr: 1-Chlorooctadecane	*DET*		"	*3.96*		*92.7*	*50-150*			
Duplicate (1071880-DUP1)		**Source: P1G0973-01**		Prepared & Analyzed: 07/30/01						
Gasoline Range Hydrocarbons	DET	2000	mg/kg wet		DET			8.84	50	
Diesel Range Hydrocarbons	DET	5000	"		DET			7.51	50	
Heavy Oil Range Hydrocarbons	DET	10000	"		DET			8.24	50	
Surr: 1-Chlorooctadecane	*DET*		"	*396*		*99.7*	*50-150*			
Duplicate (1071880-DUP2)		**Source: P1G0993-01**		Prepared: 07/30/01 Analyzed: 07/31/01						
Gasoline Range Hydrocarbons	ND	20.0	mg/kg dry		ND				50	
Diesel Range Hydrocarbons	ND	50.0	"		ND				50	
Heavy Oil Range Hydrocarbons	ND	100	"		ND				50	
Surr: 1-Chlorooctadecane	*DET*		"	*5.22*		*92.9*	*50-150*			

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GeoEngineers, Inc.	Project: Tosco Portland Terminal	
7504 S.W. Bridgeport Road	Project Number: 4823-030-00	**Reported:**
Portland, OR 97224	Project Manager: Kyle Sattler	09/25/01 16:22

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

North Creek Analytical - Portland

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TOSCO CHAIN OF CUSTODY REPORT

PIG0973

16.8

TOSCO INFORMATION

Facility Number: Portland Terminal
Site Address: 5528 N.W. Doane Ave
City, State, ZIP: Portland, OR 97210
Project/AWO Code
Tosco Manager: Marty Cramer
FACILITY TYPE: (check one) ☐ BP/Ⓚ ☒ Terminal/Bulk Plant
☐ Brown Bear ☐ Former 76 Site ☐ Other _____

CONSULTANT INFORMATION

Firm: GeoEngineers Project# 4823-030-00
Address: 7504 SW Bridgeport Rd
Portland, OR 97224
Phone: 603-6688 Fax: 620-5940
Project Manager: Kyle Sattler E-mail:
Sample Collection by: KAS

Quality Assurance Data Level:
[A] [B]
A: Standard Summary
B: Standard + Chromatograms

Laboratory Turnaround Days:
[10] [5] [3] [2] [ ]
10 Day - Standard

○ OR ○ WA ○ AK ○ NW Series ○ ID

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CON-TAINERS	TPH-HCID	TPH-Gas	BTEX EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS Semi Vols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved	TCLP or RCRA Metals (8)	NCA SAMPLE NUMBER
1. GP-1	7/30/01 10:00		1	X														
2. GP-3	9:50		1	X														
3. GP-6	9:40		1	X														
4. GP-7	10:10		1	X														
5. HA-1	10:20		1	X														
6.																		
7.																		
8.																		
9.																		
10.																		

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.	[signature]	GeoE	7/30/01 11:30	[signature]	NCA	7/30/01 1130
2.						
3.						

Comments: Send portion of sample to Steve Bonde in AK.

Page ____ of ____

Comments:

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Case Narrative

CLIENT: TOSCO **August 28, 2001**
PROJECT: MDO Line Leak
PROJECT #: 350608
NCA #: P1F0709, P1F0765, P1F0791, P1G0050, P1G0337, P1G0973

1.0 DESCRIPTION OF CASE

North Creek Analytical, Portland received six work orders from Tosco and GeoEngineers, Inc. between 6/22/01 and 7/30/01. Samples included fresh products from product tanks, products collected from environmental sampling wells, and soils from excavations and environmental sampling points. All samples were received under proper Chain of Custody (COC) and held under refrigeration prior to extraction and analysis. Tosco Project Manager, Marty Cramer requested that in addition to specific analysis marked on the COC, NCA should review analytical data in an effort to determine the source of environmental contamination.

2.0 SAMPLE LIST

Refer to the *Chain of Custody* documents for a summary of sample information.

Each group of samples received is given an NCA# (SDG#), proceeded by a P for Portland. This number consists of a one-digit code for the year, an alpha code for the month and a sequential number for the group within the month. Each sample within the group is numbered sequentially by placing a dash after the NCA#. All samples were received and entered into the NCA LIMs system and stored according to NCA sample handling procedures.

3.0 COMMENTS ON ANALYSIS

3.1 Analysis

The samples were analyzed following the procedures outlined by the applicable methods. Refer to the NCA report for specific prep methods used. The samples were refrigerated at approximately 4°C and were extracted and analyzed within the EPA recommended holding times without incident. Target analyte concentrations were quantitated using EPA and NW-TPH methodology. Results can be found in original reports. Forensic determinations based on data obtained from GC-FID traces, GC/MS SIM and full scans data acquisition and GC Atomic Emission Detector (GC/AED). Relevant GC/FID, GC/AED chromatographic traces have been included with this case narrative.

Hydrocarbon Identification

Product Samples, 2483 Decant, 3579 Industrial Fuel Oil, 100N Base Stock, 600N Base Stock, 5R Base Stock, 220N Base Stock were analyzed. None of the product profiles matched any of the soils submitted for analysis. These products are not considered a source of environmental contamination.

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Case Narrative

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PROJECT #: 350608
NCA #: P1F0709, P1F0765, P1F0791, P1G0050, P1G0337, P1G0973

MDO Source Oil

Two samples of Marine Diesel Oil (MDO) source oil were submitted to NCA for use in product identification. Both samples provided identical results in composition and were used by the laboratory for product identification of site soils. The MDO product (P1F0709-05, P1F0765-07) is a middle distillate fuel oil with an n-alkane range between C-8 and C-25. The chromatographic trace for this product is similar in hydrocarbon range to heating oil #2 and auto diesel. The MDO product composition is lower in n-alkanes and higher in sulfur, branched aliphatic and aromatic hydrocarbons than the fuel oil #2. Number 2 fuel oil contamination was not detected in samples received.

MDO Source Oil Matches

Samples SL-1-3, SL-2-3, SL-3-3 and EX-FL-3-8.0 contained measurable concentrations of petroleum hydrocarbons consistent with the MDO source oil. The samples contained aliphatic, aromatic and sulfur compounds in comparable ratios with the fresh product. Lack of alteration suggests that the release of MDO product occurred recently. The only other soil sample to produce a reasonable match for MDO was soil HA-1-10. The hydrocarbon profile is very consistent with a recent release of MDO source oil. The relative concentration of sulfur and the presence of light sulfur compounds make the source of fuel in HA-1-10 questionable, but MDO is one potential partial source. The comparison is also confounded by soil samples HA-1-6 and HA-1-17, which bracket the depth of HA-1-10 but do not contain the MDO product.

Bunker and High Paraffinic Fuel Oils

Sample extracts from soil HA-1-6, HA-1-17, HA-2-4 and HA-2-10 produce chromatograms where the hydrocarbon hump is covered by distinct evenly spaced peaks. Straight chain hydrocarbons known as normal paraffins, normal alkanes, or waxes produce these peaks. The longer the hydrocarbon chain the higher the boiling point and longer retention within the chromatographic column. Therefore, n-alkane C-10 is followed by C-11, C-12, C-13 etc. Eluting from the column between these waxes are branched and aromatic hydrocarbons. A complex mixture of hydrocarbons in which no compound is present in great enough concentration to form a discrete peak produces the hydrocarbon hump. Typically 2-10 percent of these compounds forming the "hump" contain nitrogen, oxygen or sulfur.

The HA soils, described above, contain a highly paraffinic bunker type fuel oil. These samples contain a much higher concentration of straight chain hydrocarbons then the MDO product. The n-alkanes are not significantly weathered and are at concentrations that are too high to be attributed to an MDO release. Although the Tosco product #3579 Industrial Fuel Oil (IFO) does contain high concentrations of n-alkane waxes, the abundance of high molecular weight hydrocarbons in the C-26 to C-40 range makes it dissimilar to any HA samples. Therefore, it is highly unlikely the Tosco MDO or IFO are sources of the fuel oils found in the aforementioned samples.

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Case Narrative

CLIENT: TOSCO **August 28, 2001**
PROJECT: MDO Line Leak
PROJECT #: 350608
NCA #: P1F0709, P1F0765, P1F0791, P1G0050, P1G0337, P1G0973

Weathered Bunker related fuel oil

Soils HA-2-15, HA-3-14, HA-4-15 and HA-4-20 are derived from weathered bunker oil or a mixture of weathered middle distillate and heavy oil. The source of this contamination is old and unrelated to the MDO leak.

Products Collected From Environmental Sampling Points

Products GP-6 and GP-7 are extremely weathered middle distillate fuel oils. The n-alkane waxes are completely depleted. The weathering process of free product is much slower than the alteration that occurs is unsaturated soils and product dissolved in groundwater. These two product samples are very similar in composition to that of the Outfall Oil (P1F0709-04). Both traces of organic carbon and sulfur compounds are near identical matches.

Products GP-1 and GP-3 are similar in composition to GP-6 and GP-7 described above but they have not undergone complete degradation of n-alkane waxes. All four products are highly altered and clearly from an old fuel oil release. Alteration (weathering) of products is dependant on local environmental conditions and the thickness of the free product layer. The GP products appear to have been in the environment for several decades and could not be derived from a recent MDO release. The GP product could be a source of outfall oil contamination if there is physical continuity between GP source areas and the Outfall location.

Product HA-1

Of all products collected from environmental sampling points, HA-1 presents a chromatographic signature that most resembles the MDO product. Normal alkanes, branched aliphatic hydrocarbon ratios, and a suite of similar sulfur containing compounds indicate that the MDO product may be present at HA-1. The product from HA-1 appears to have higher levels of sulfur and a number of light sulfur compounds not detected in the MDO source oil. This may indicate that the MDO is not a match with HA-1 or that HA-1 is a mixture of MDO product and a product present from an earlier release. Further evaluation of this product may be warranted. Soils from HA-1 contained two differing hydrocarbon profiles suggesting that multiple releases are likely to have occurred in this area.

GC/FID Traces, GC/AED Traces

Chromatographic traces from products and extracts are found in the attachments. Tosco and NCA ID#s are on each trace. GC/AED Traces illustrate chromatographic data from the Carbon Channel (top) and the Sulfur Channel (bottom).

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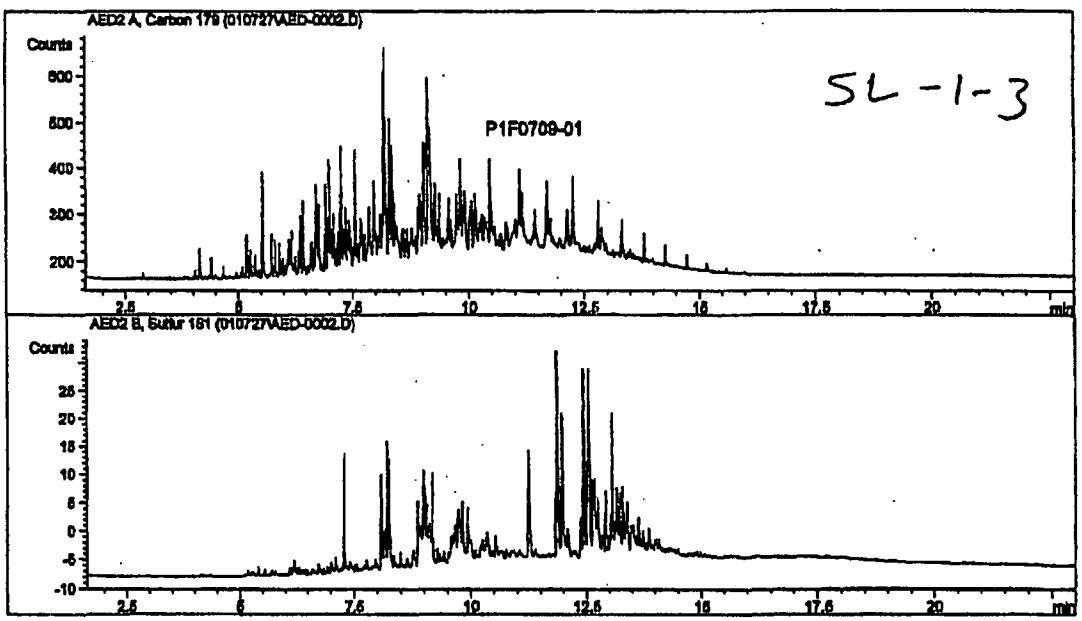
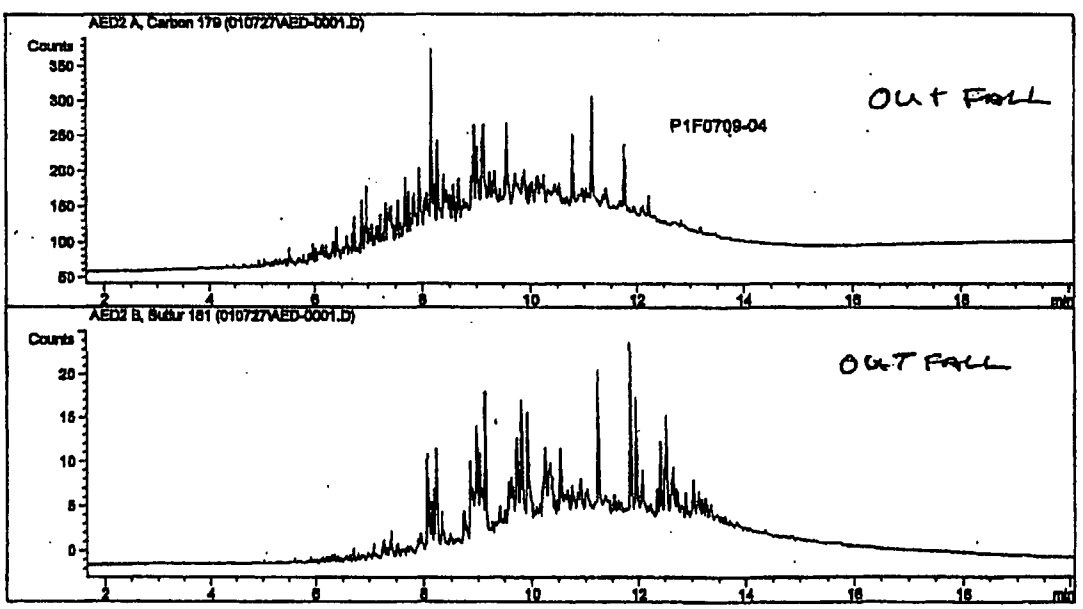
Case Narrative

CLIENT: TOSCO **August 28, 2001**
PROJECT: MDO Line Leak
PROJECT #: 350608
NCA #: P1F0709, P1F0765, P1F0791, P1G0050, P1G0337, P1G0973

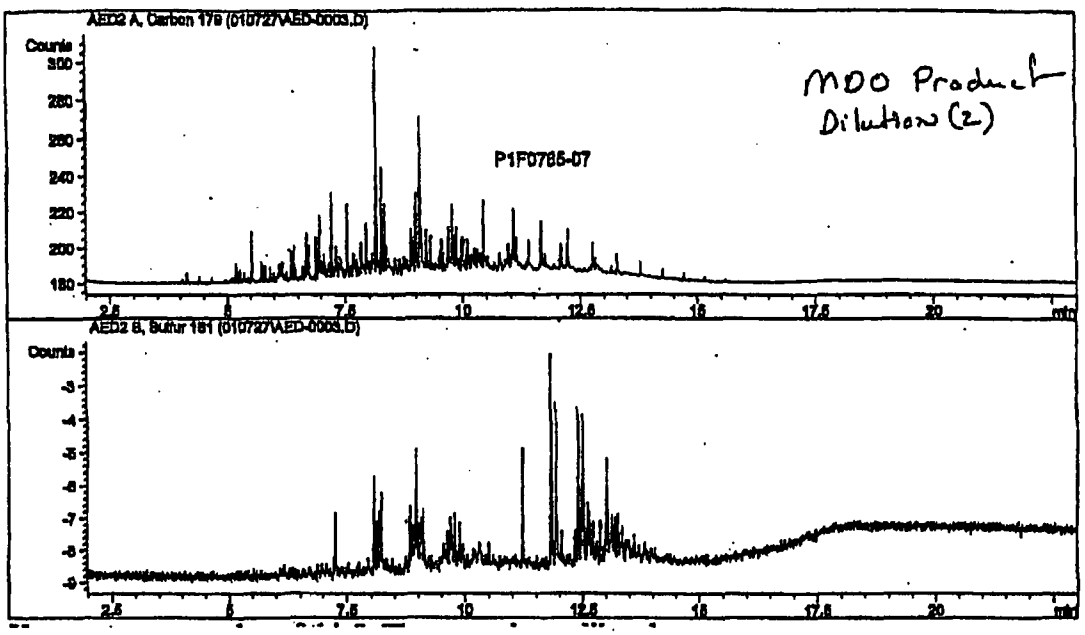
Philip Neenberg/for
Kent Patton, Technical Director
North Creek Analytical, Portland

North Creek Analytical, Inc.
Environmental Laboratory Network

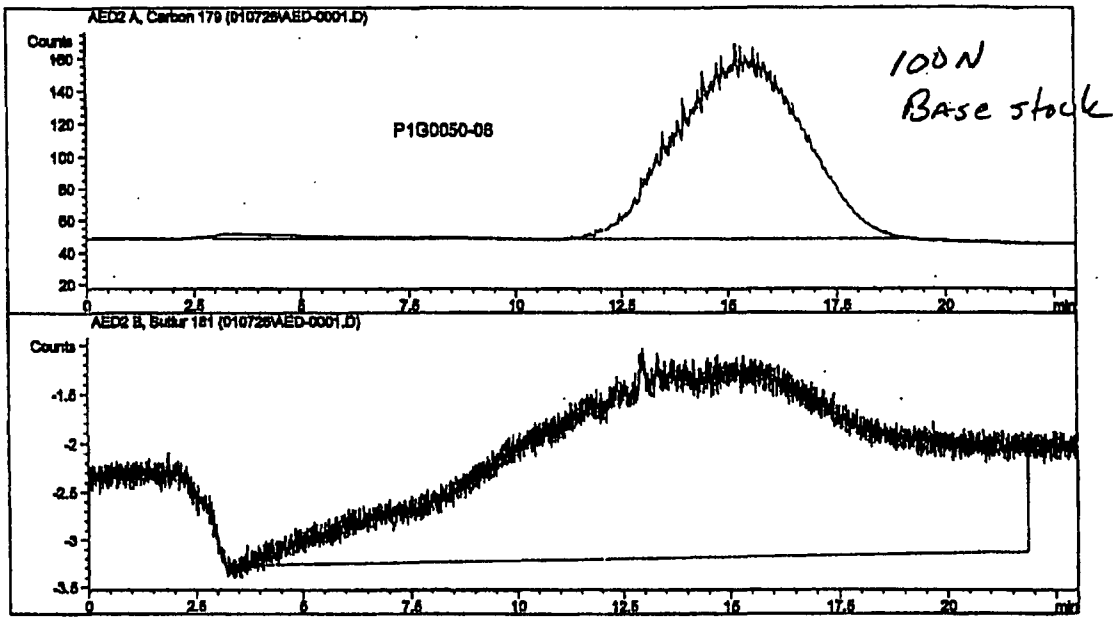

AED2 A, Carbon 179 (010727\AED-0002.D)
Counts
P1F0709-01
SL-1-3
AED2 B, Sulfur 181 (010727\AED-0002.D)
Counts
min

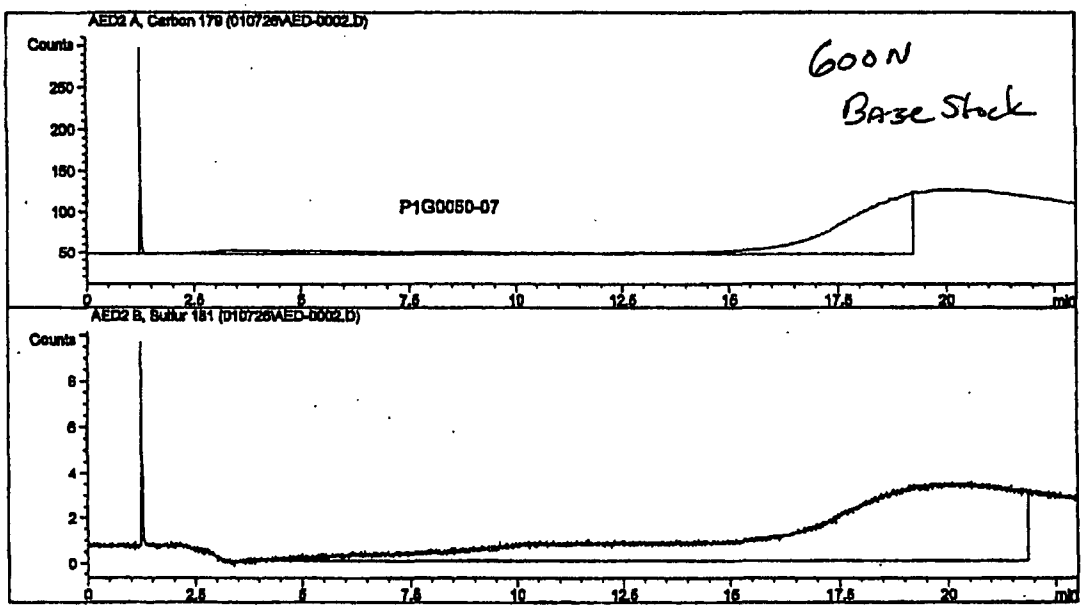

AED2 A, Carbon 179 (010727\AED-0001.D)
Counts
P1F0709-04
OUTFALL
AED2 B, Sulfur 181 (010727\AED-0001.D)
Counts
OUTFALL
min

COP0015757

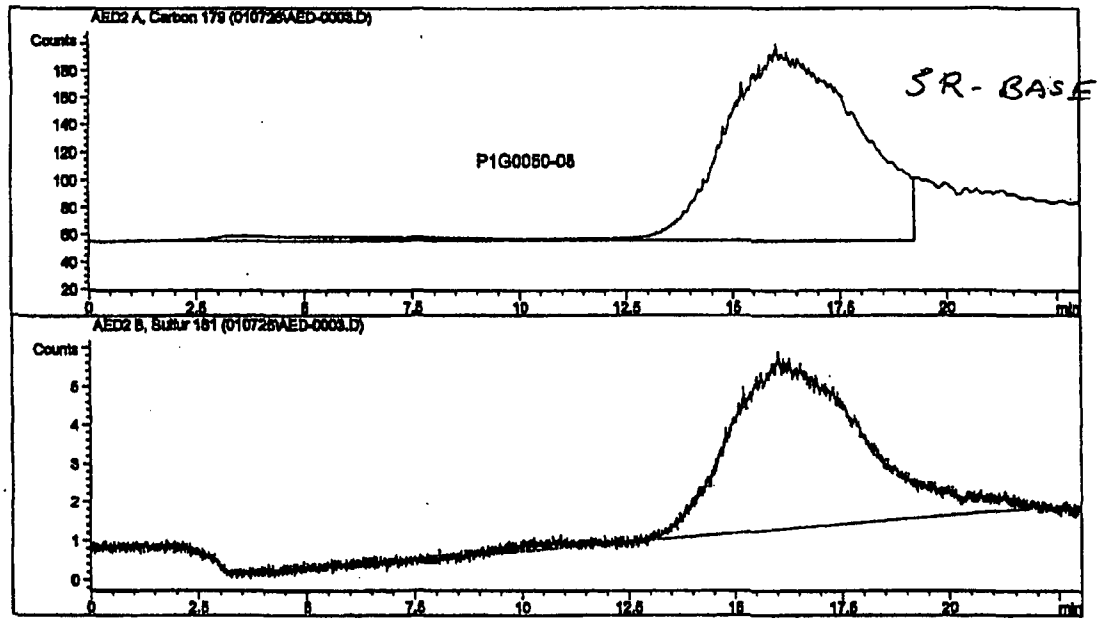

AED2 A, Carbon 179 (010727\AED-0003.D)
Counts
300
280
260
240
220
200
180
P1F0765-07
MDO Product
Dilution (2)
2.5
5
7.5
10
12.5
15
17.5
20
min
AED2 S, Sulfur 181 (010727\AED-0003.D)
Counts
-3
-4
-5
-6
-7
-8
-9
2.5
5
7.5
10
12.5
15
17.5
20
min

COP0015758

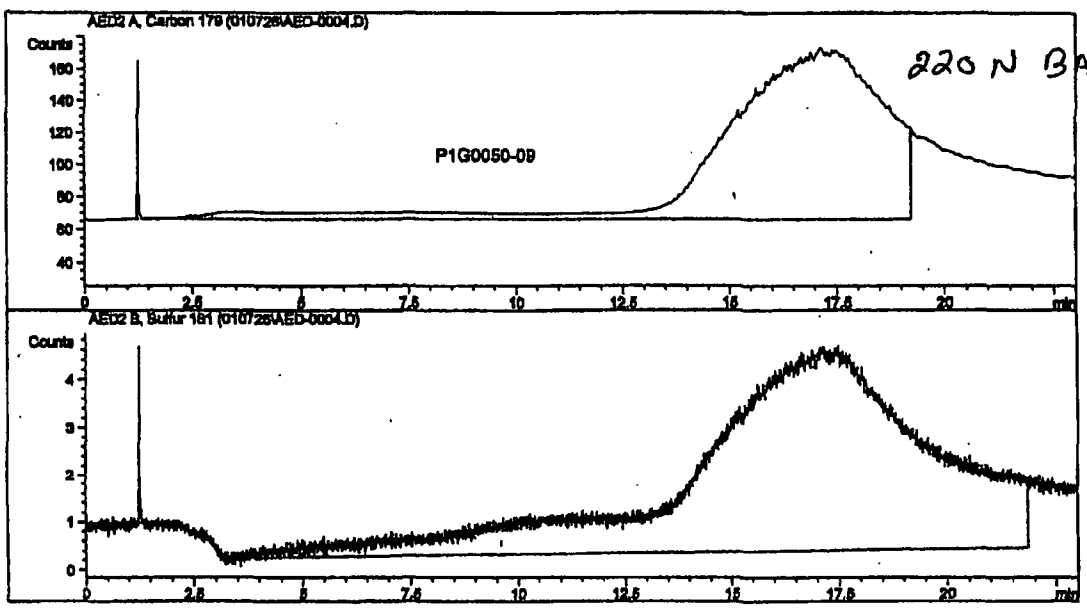

AED2 A, Carbon 179 (010726\AED-0001.D)
Counts
P1G0050-08
100N
Base stock
AED2 B, Sulfur 181 (010726\AED-0001.D)
Counts
min


AED2 A, Carbon 179 (010726\AED-0002.D)
Counts
P1G0050-07
600N
Base Stock
AED2 B, Sulfur 181 (010726\AED-0002.D)
Counts
min

COP0015759

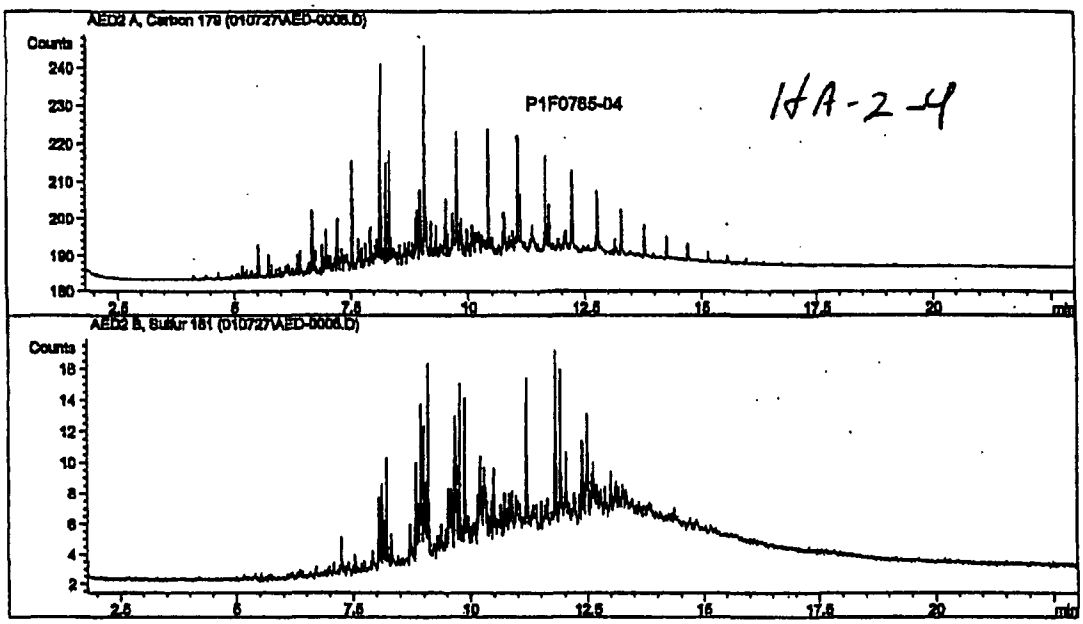


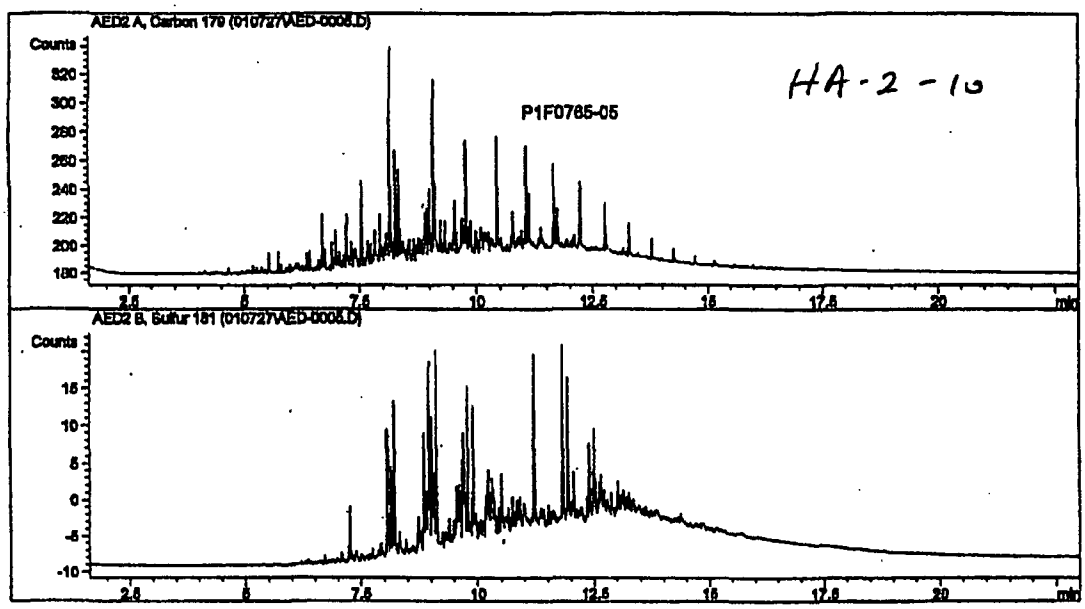
5R-BASE STOCK



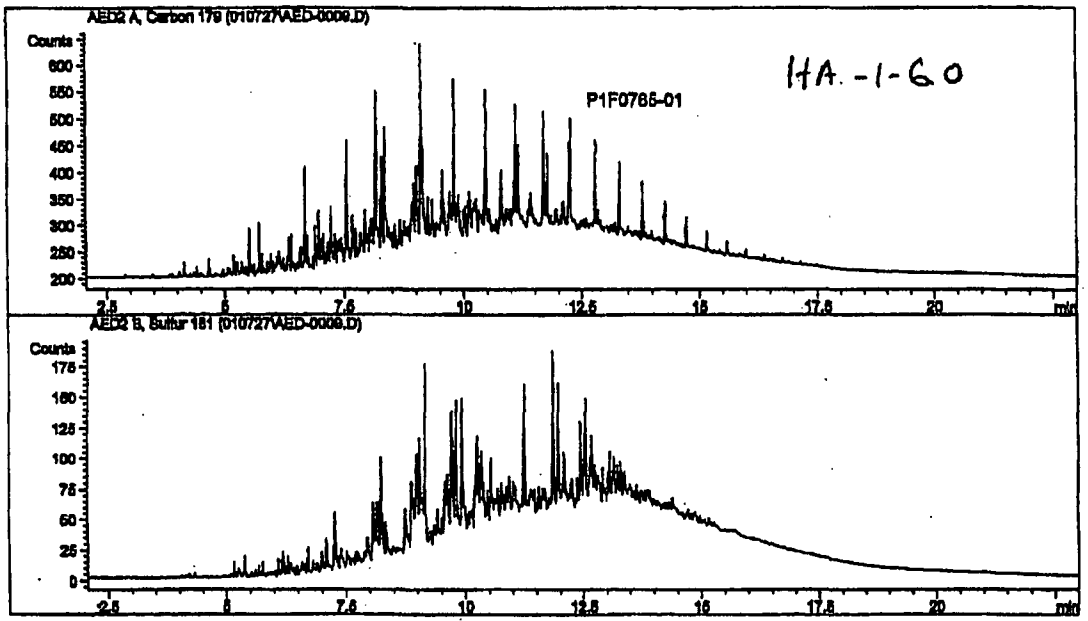
220N BASE STOCK

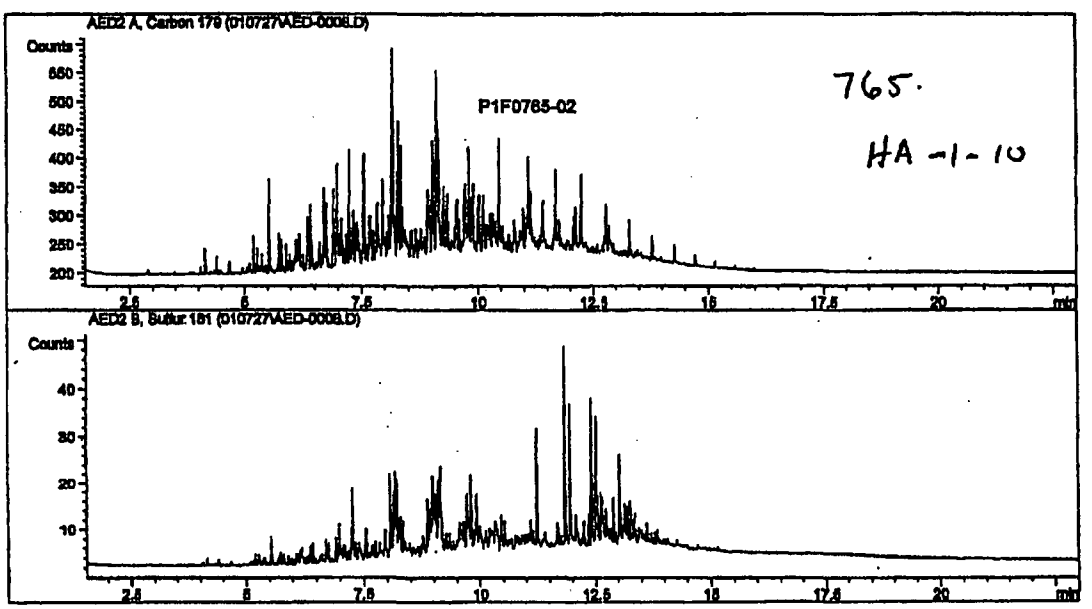
COP0015760


AED2 A, Carbon 179 (010727\AED-0004.D)
Counts
P1F0785-04
HA-2-4
AED2 B, Sulfur 181 (010727\AED-0004.D)
Counts

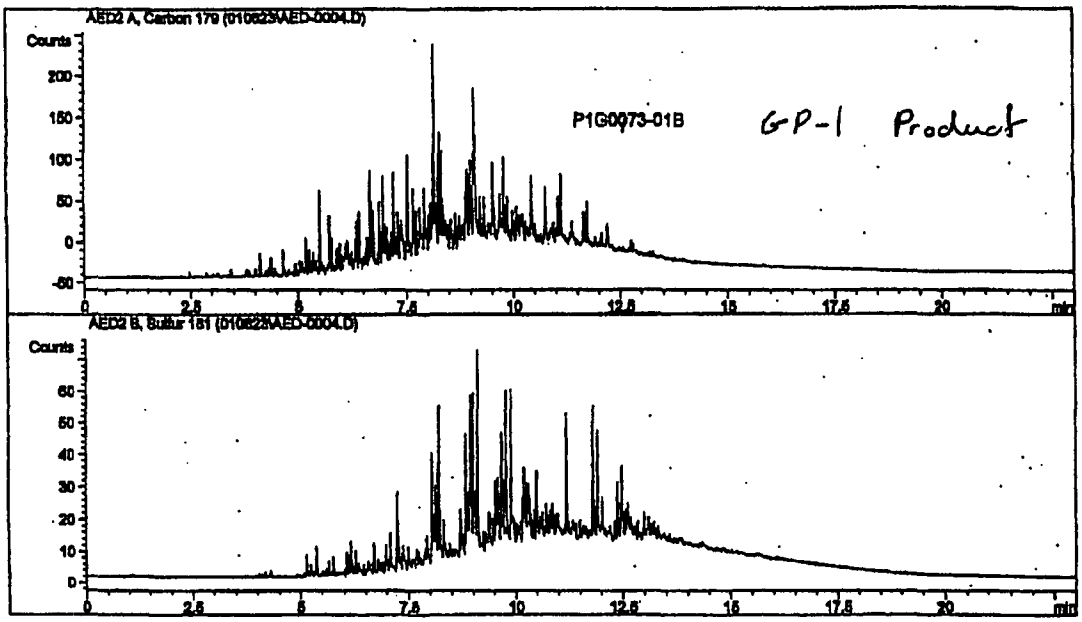

AED2 A, Carbon 179 (010727\AED-0005.D)
Counts
P1F0785-05
HA-2-10
AED2 B, Sulfur 181 (010727\AED-0005.D)
Counts

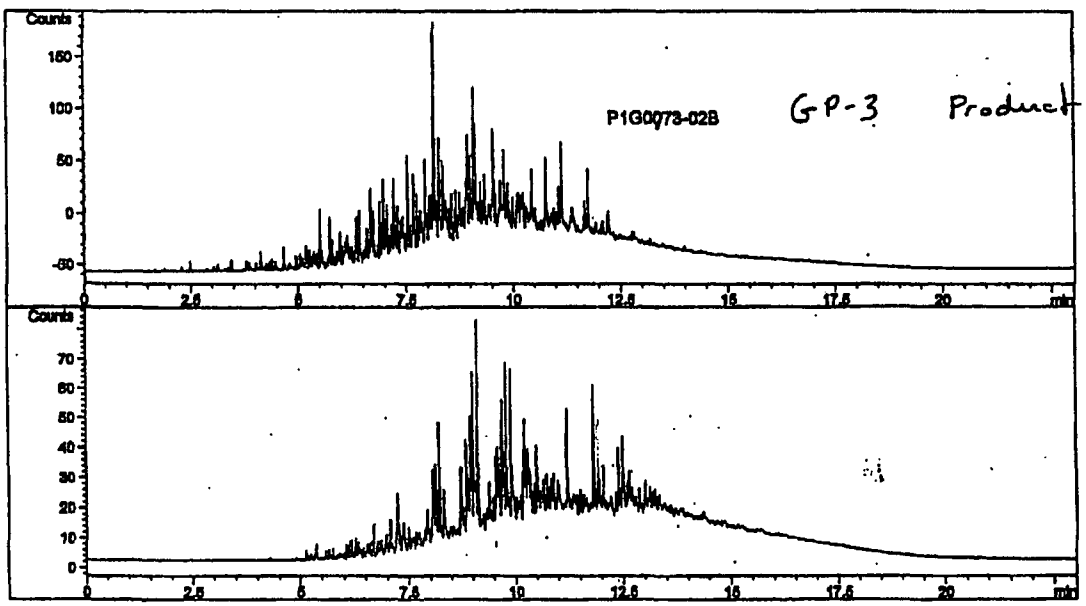
COP0015761


AED2 A, Carbon 179 (010727\AED-0009.D)
Counts
P1F0765-01
HA-1-60
AED2 B, Sulfur 181 (010727\AED-0009.D)
Counts
min

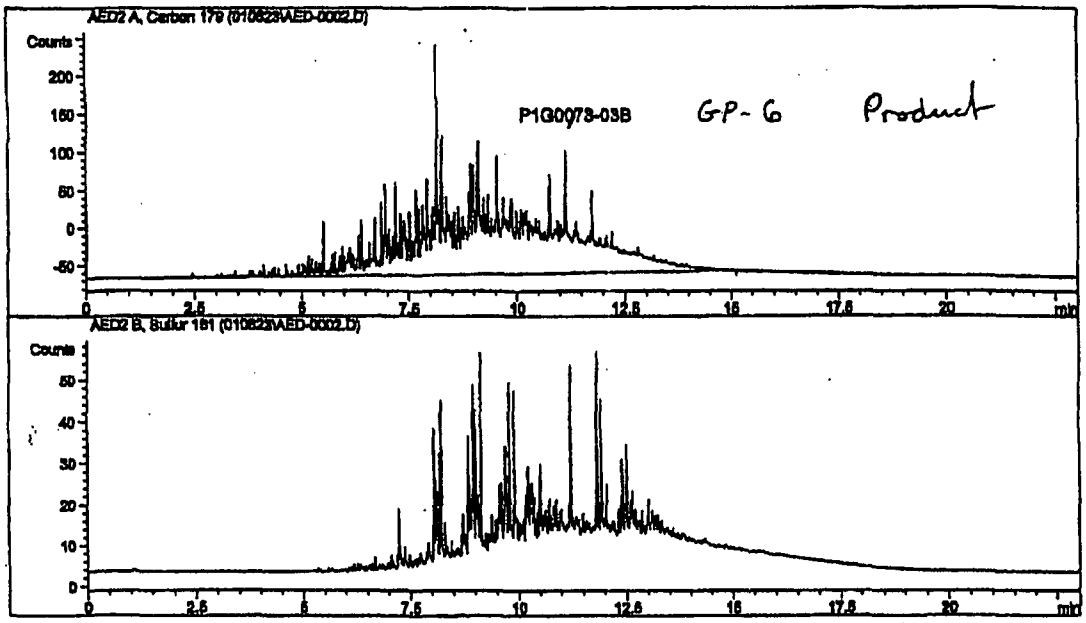

AED2 A, Carbon 179 (010727\AED-0008.D)
Counts
P1F0765-02
765.
HA-1-10
AED2 B, Sulfur 181 (010727\AED-0008.D)
Counts
min

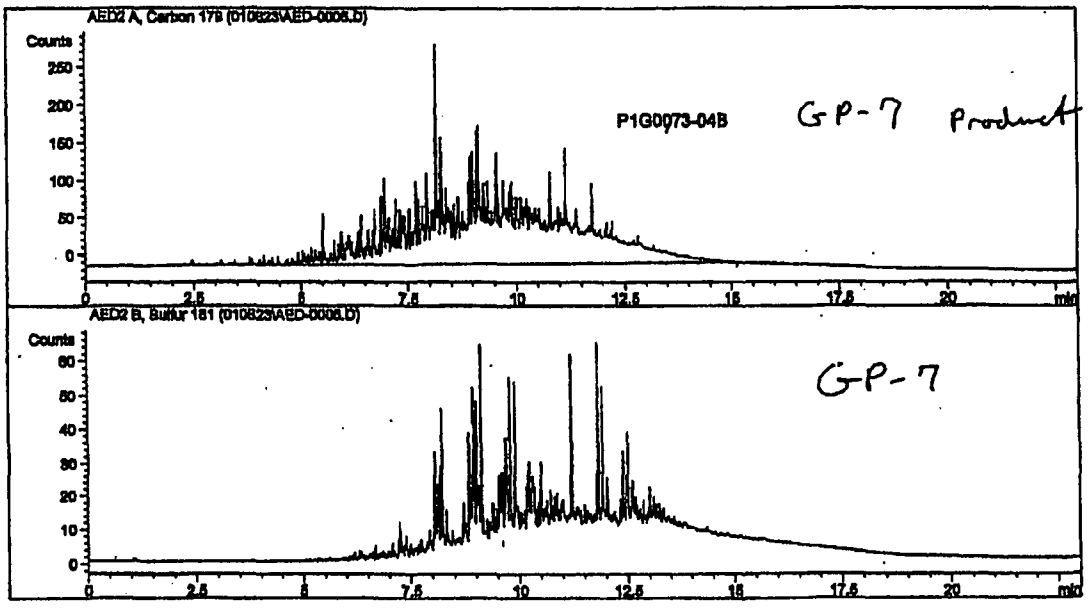
COP0015762


AED2 A, Carbon 179 (010823\AED-0004.D)
Counts
P1G0073-01B
GP-1 Product
AED2 B, Sulfur 181 (010823\AED-0004.D)
Counts
min

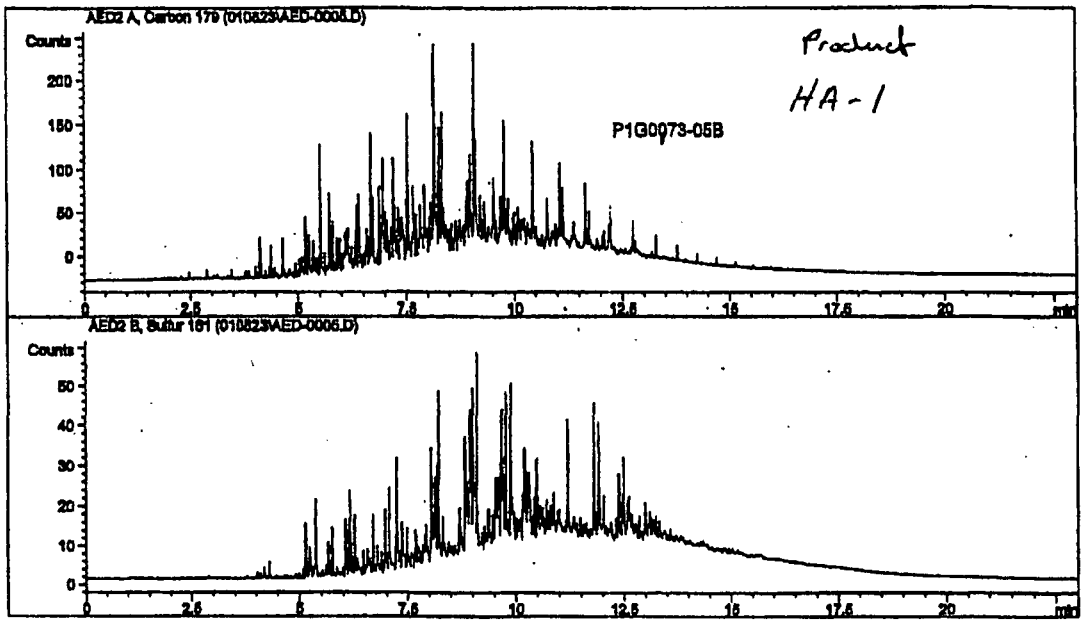

Counts
P1G0073-02B
GP-3 Product
Counts
min

COP0015763

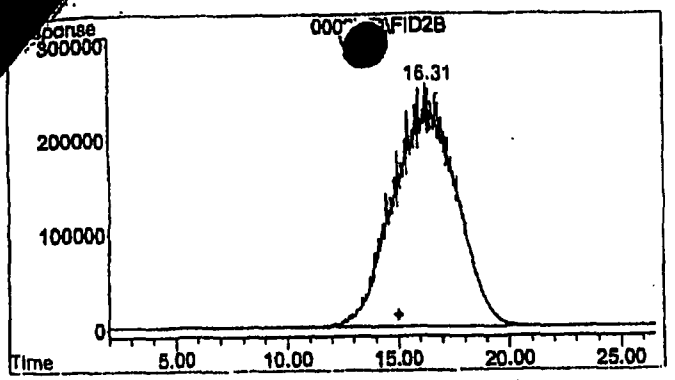

AED2 A, Carbon 179 (010823\AED-0002.D)
Counts
P1G0073-03B
GP-6
Product
AED2 B, Sulfur 181 (010823\AED-0002.D)
Counts
min


AED2 A, Carbon 179 (010823\AED-0006.D)
Counts
P1G0073-04B
GP-7
Product
AED2 B, Sulfur 181 (010823\AED-0006.D)
Counts
GP-7
min

COP0015764


AED2 A, Carbon 179 (010823\AED-0004.D)
Counts
Product
HA-1
P1G0073-05B
AED2 B, Sulfur 181 (010823\AED-0004.D)
Counts
min

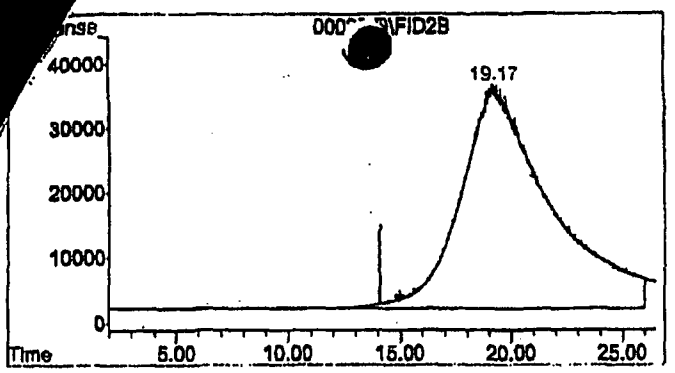
COP0015765



#5 Totalon[redacted]ale(qualitative)

R.T.: 15.000 min
Delta R.T.: 0.000 min
Response: 469151693
Conc: 0.15 m

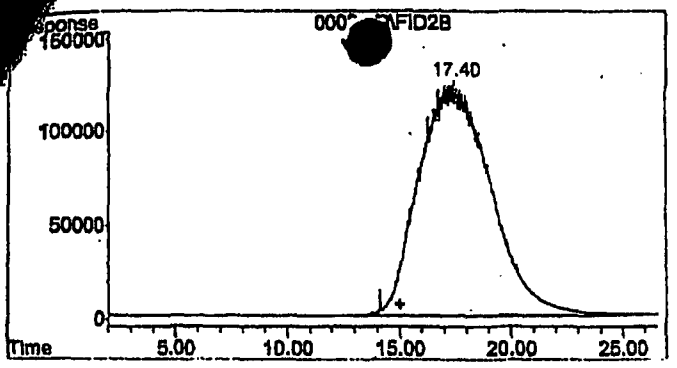
P1G0050-06
100N BASE STOCK



#5 Totalon[redacted]ale(qualitative)

R.T.: 15.000 min
Delta R.T.: 0.000 min
Response: 89452577
Conc: 0.03 m

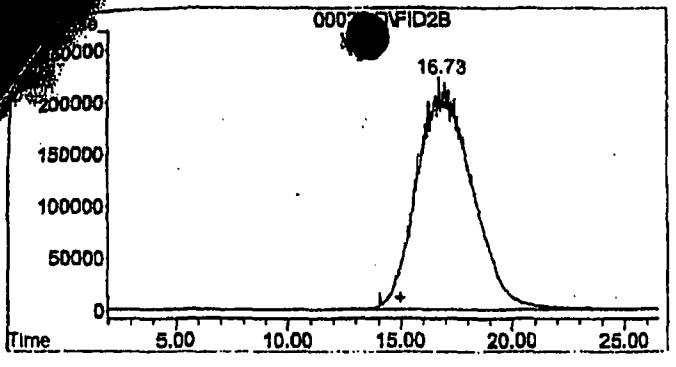
50-7
600N BASE STOCK



#5 Totalon[redacted]ale(qualitative)

R.T.: 15.000 min
Delta R.T.: 0.000 min
Response: 275798892
Conc: 0.09 m

P1G0050-09
220N BASESTOCK

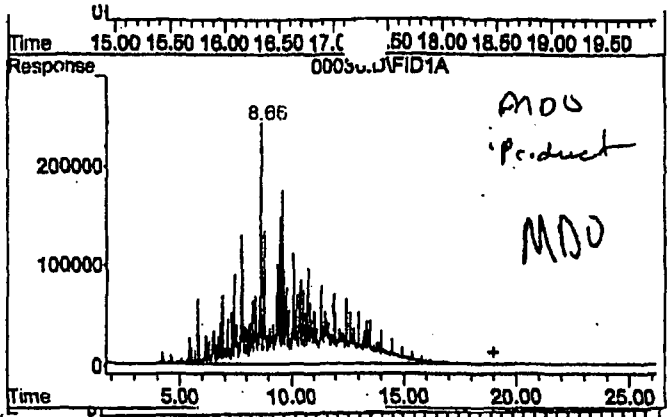


#5 Totalon[redacted]ale(qualitative)

R.T.: 15.000 min
Delta R.T.: 0.000 min
Response: 364952263
Conc: 0.12 m

50-08
5R BASE STOCK

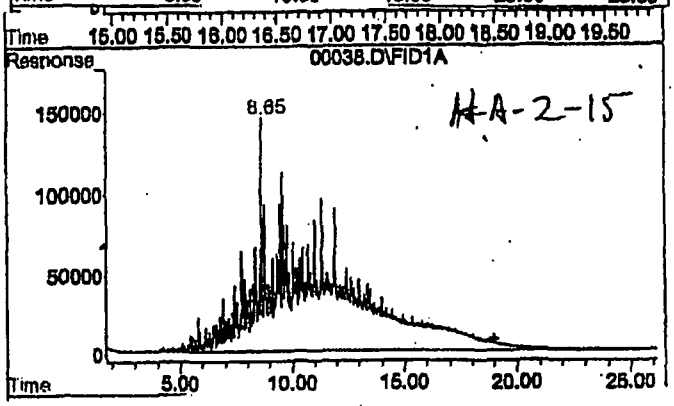
COP0015766



#3 TotalOnscale(qualitative)

R.T.: 19.000 min
Delta R.T.: 0.000 min
Response: 146601030
Conc: 2340.06 ug/mL m

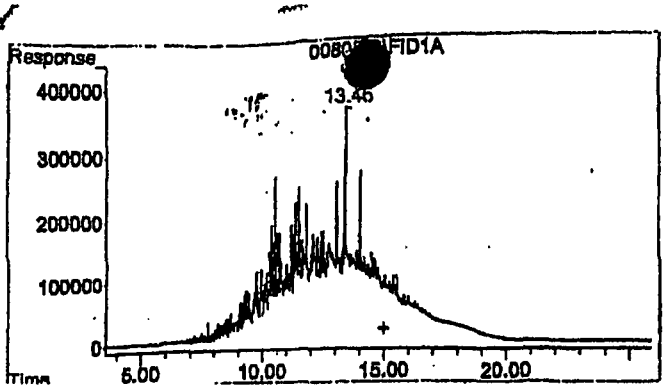
765-7



#3 TotalOnscale(qualitative)

R.T.: 19.000 min
Delta R.T.: 0.000 min
Response: 195623617
Conc: 3122.56 ug/mL m

765-6 x10

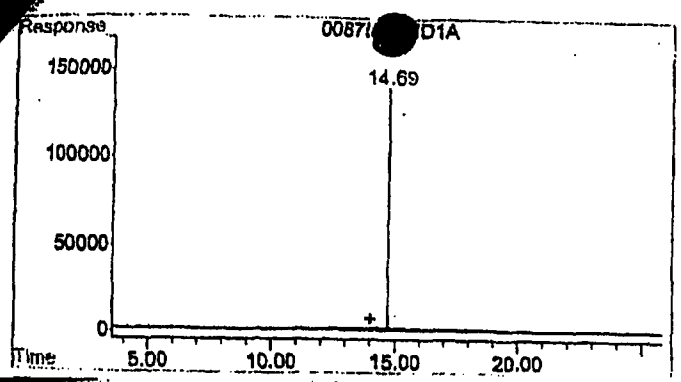


#5 TotalOnscale(qualitative)

R.T.: 15.000 min
Delta R.T.: 0.000 min
Response: 497734284
Conc: 9.03 m

OUTFALL
709-04

COP0015767

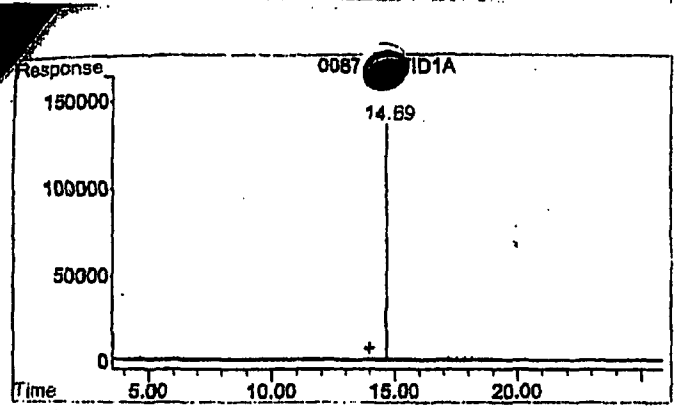


#5 Total on[redacted]ale(qualitative)

R.T.: 14.000 min
Delta R.T.: 0.000 min
Response: 5267753
Conc: 0.00 ug/mL m

791-04

HA-4-5

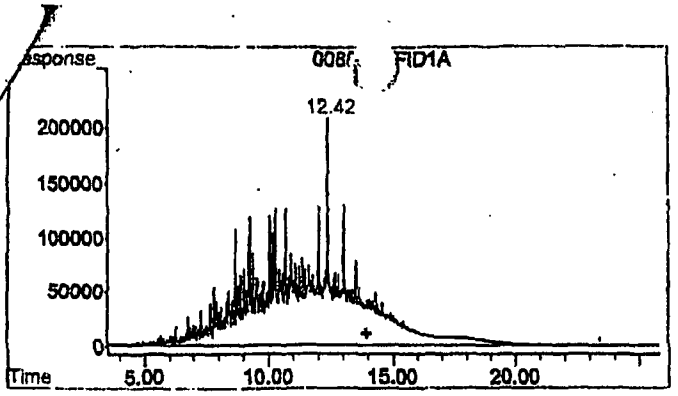


#5 Total on[redacted]ale(qualitative)

R.T.: 14.000 min
Delta R.T.: 0.000 min
Response: 3285527
Conc: 0.00 ug/mL m

HA-4-10

791-05

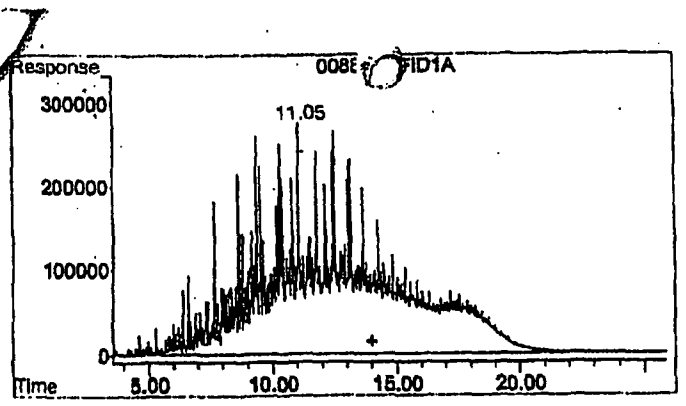


#5 Total on[redacted]ale(qualitative)

R.T.: 14.000 min
Delta R.T.: 0.000 min
Response: 225025317
Conc: 0.00 ug/mL m

791-06

HA-4-15



#5 Total on[redacted]ale(qualitative)

R.T.: 14.000 min
Delta R.T.: 0.000 min
Response: 534089677
Conc: 0.00 ug/mL m

791-07

HA-4-20

COP0015768

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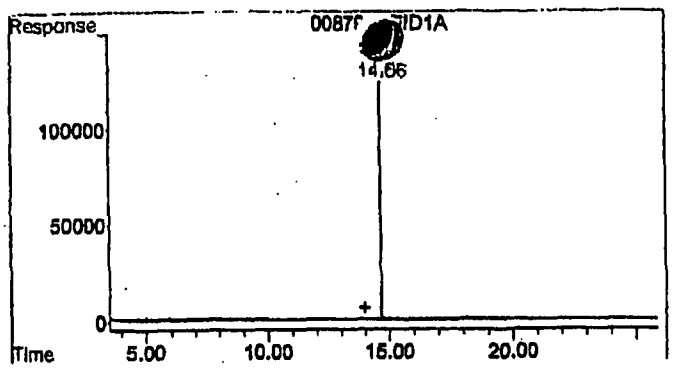
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

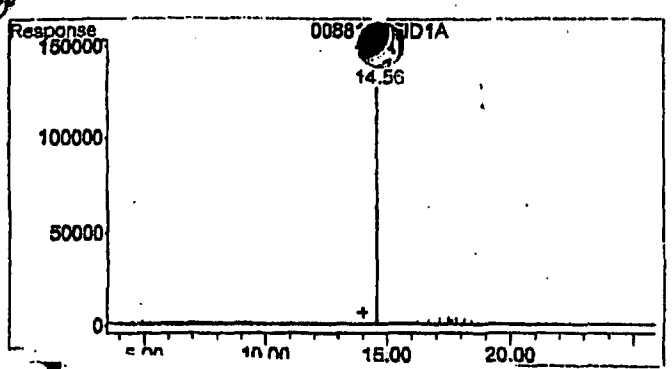


#5 Total on...ale(qualitative)

R.T.: 14.000 min
Delta R.T.: 0.000 min
Response: 2597938
Conc: 0.00 ug/mL m

791-01

HA-3-5

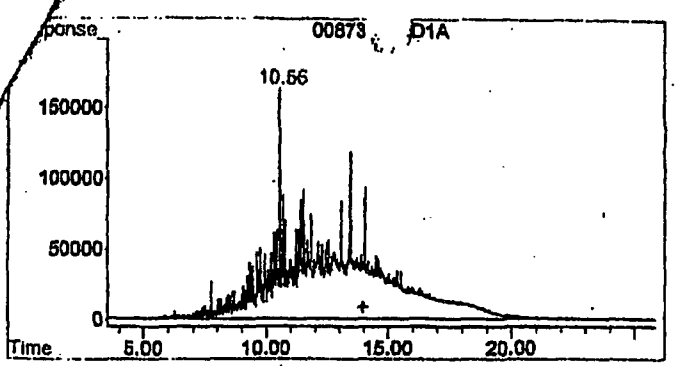


#5 Total on...ale(qualitative)

R.T.: 14.000 min
Delta R.T.: 0.000 min
Response: 3017653
Conc: 0.00 ug/mL m

791-02

HA-3-10



#5 Total on...ale(qualitative)

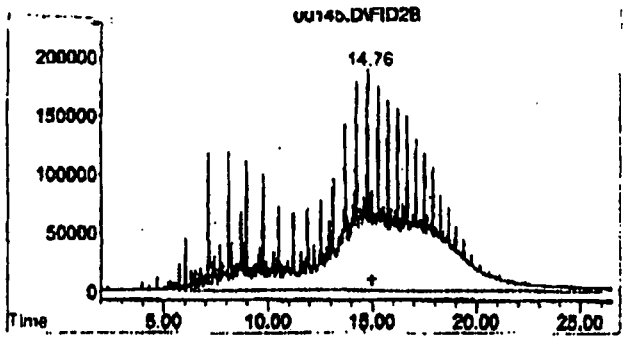
R.T.: 14.000 min
Delta R.T.: 0.000 min
Response: 170589343
Conc: 0.00 ug/mL m

791-03

HA-3-14

North Creek Analytical, Inc.
Environmental Laboratory Network

COP0015769

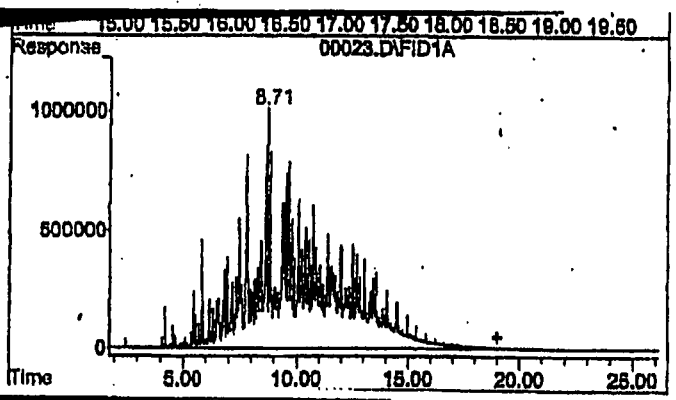


#5 TotalOnscale(qualitative)

R.T.: 15.000 min
Delta R.T.: 0.000 min
Response: 321955180
Conc: 0.11 m

3579

IFO

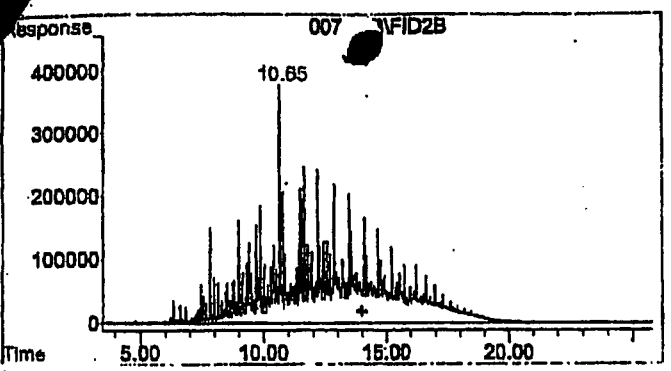


#3 TotalOnscale(qualitative)

R.T.: 19.000 min
Delta R.T.: 0.000 min
Response: 1179872052
Conc: 18833.23 ug/mL m

709-01

SL-1-3

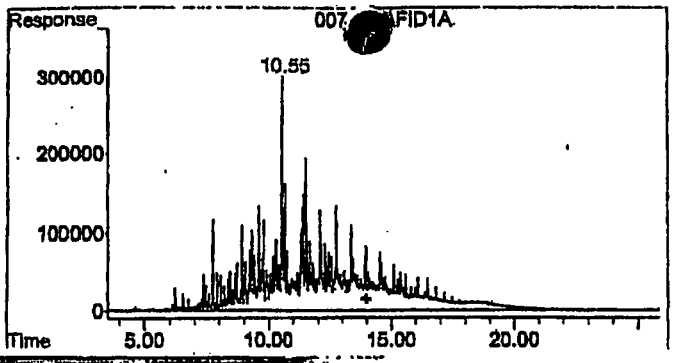


#5 Total r (cale(qualitative)

R.T.: 14.000 min
Delta R.T.: 0.000 min
Response: 312428008
Conc: 0.00 ug/mL m

709-02

SL-2-3

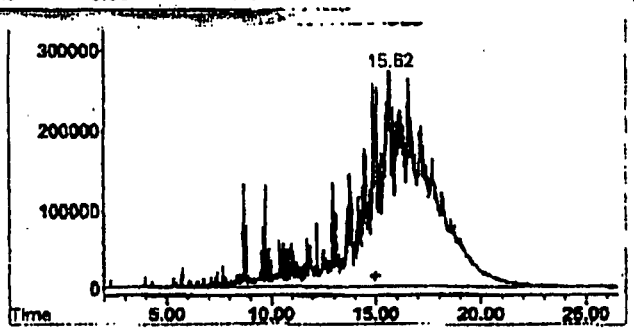


#5 Total c cale(qualitative)

R.T.: 14.000 min
Delta R.T.: 0.000 min
Response: 219373056
Conc: 0.00 ug/mL m

709-03

SL-3-3

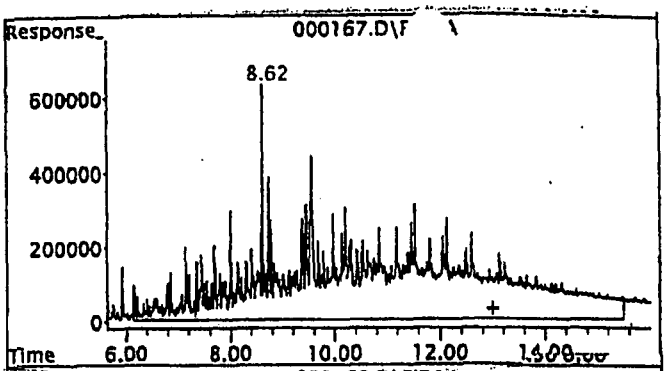


#5 TotalOnscale(qualitative)

R.T.: 15.000 min
Delta R.T.: 0.000 min
Response: 537743892
Conc: 0.19 m

DECANT

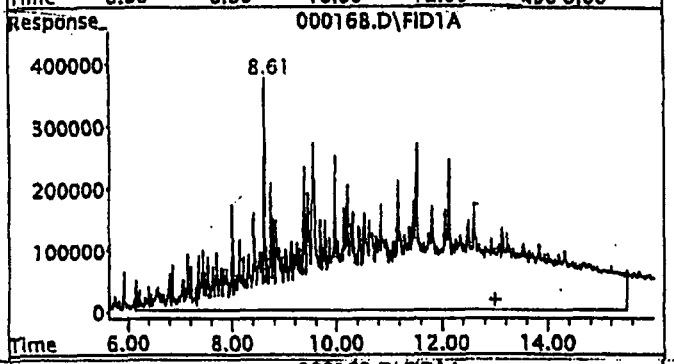
COP0015770



#3 NW Diesel (C - C25)

R.T.: 13.000 min
Delta R.T.: 0.000 min
Response: 579789943
Conc: 19725.82 ug/mL m

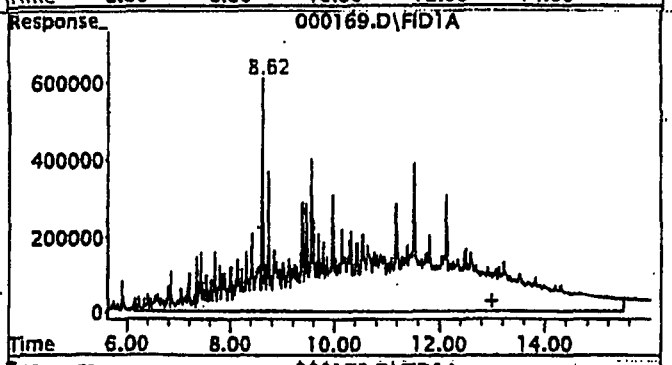
GP-1
PIG0973-01 Product



#3 NW Diesel (C10 - C25)

R.T.: 13.000 min
Delta R.T.: 0.000 min
Response: 459611956
Conc: 15637.08 ug/mL m

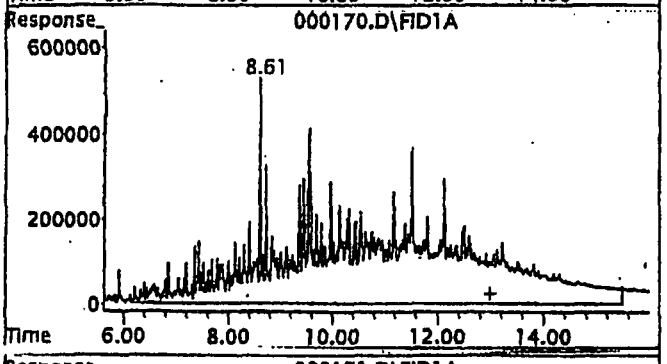
GP-3
PIG0973-02 Product



#3 NW Diesel (C10 - C25)

R.T.: 13.000 min
Delta R.T.: 0.000 min
Response: 521229851
Conc: 17733.46 ug/mL m

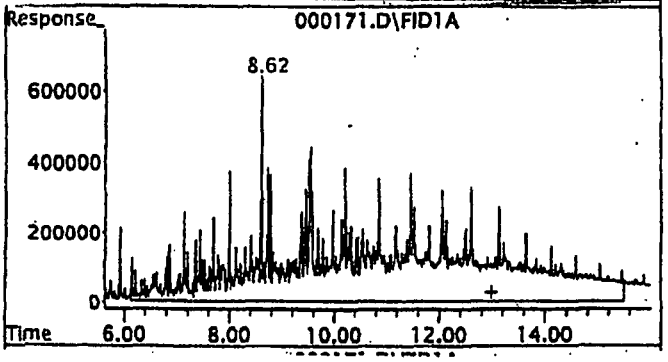
GP-6
PIG0973-03
Product



#3 NW Diesel (C10 - C25)

R.T.: 13.000 min
Delta R.T.: 0.000 min
Response: 507738336
Conc: 17274.45 ug/mL m

GP-7 Product
PIG0973-04



#3 NW Diesel (C10 - C25)

R.T.: 13.000 min
Delta R.T.: 0.000 min
Response: 589064288
Conc: 20041.35 ug/mL m

HA-1
PIG0973-05
Product

COP0015771

ATTACHMENT C

ATTACHMENT C

REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This attachment provides information to help you manage your risks with respect to the use of this report.

ENVIRONMENTAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES, PERSONS AND PROJECTS

This report has been prepared for use by Tosco Corporation. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Tosco Corporation should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

THIS ENVIRONMENTAL REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

This report has been prepared for Tosco Portland Terminal. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

RELIANCE CONDITIONS FOR THIRD PARTIES

If a lending agency or other parties intend to place legal reliance on the product of our services, we require that those parties indicate in writing their acknowledgement that the scope of services provided, and the general conditions under which the services were rendered including

[1] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

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the limitation of professional liability, are understood and accepted by them. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions.

ENVIRONMENTAL REGULATIONS ARE ALWAYS EVOLVING

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

UNCERTAINTY MAY REMAIN EVEN AFTER THIS PHASE IS COMPLETED

No investigation can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

SUBSURFACE CONDITIONS CAN CHANGE

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or ground water fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

MOST ENVIRONMENTAL FINDINGS ARE PROFESSIONAL OPINIONS

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

DO NOT REDRAW THE EXPLORATION LOGS

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an

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environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

READ THESE PROVISIONS CLOSELY

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

GEOTECHNICAL, GEOLOGIC AND GEOENVIRONMENTAL REPORTS SHOULD NOT BE INTERCHANGED

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

COP0015775

Memorandum

AOC 0922
CORRESP.

TOSCO

January 7, 2002

To: Max Boone

From: Marty Cramer

cc:

Subject: **Spill Reports for Portland Terminal**

Per our discussion the other day, enclosed are the reports for two relatively recent spills at the Portland Terminal. The reports are:

- "June 2000 Kerosene Release Soil Sampling", GeoEngineers November 8, 2000
- "Supplement Remedial Activities Associated with June 2000 Kerosene Release in Tank Farm 2", Internal Tosco Letter to John Sherman, November 24, 2001
- "June 2001 MDO Release Delineation Assessment", GeoEngineers, November 27, 2001

I didn't realize it but June appears to be a bad month for the terminal here and November seems to be a good month for reports. Anyway, both spills were reported to DEQ who have just wrapped them into the overall remediation project for the terminal and the consent order for the Willbridge Terminals (Chevron, Kinder Morgan and Unocal/Tosco/Phillips are doing a combined RI/FS for the area around the terminals here in Portland. To date there has not been any additional work conducted as part of the RI/FS that is related to the spills, hence there has not been an incremental increase in the remedial costs. The initial spill response costs were covered by the terminal and we removed as much contaminated soil as was feasible in each case. Additional work may, however, be required with respect to the MDO release but that will likely be limited to installation of recovery well and pump which can then be tied into our existing recovery system. The terminal would pay for the well and pump system but the recovery system operation would still be billed to the Unocal account.

Call me if you have questions.

Portland Terminal 0608

Tosco Refining Company
A Division of Tosco Corporation
Portland Terminal
5528 Northwest Doane Avenue
Portland, Oregon 97210

TOSCO

June 3, 2002

Mr. Greg Grunow
Air Quality Program
Oregon Department of Environmental Quality
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97201-4987

RE: Oil-Water Separator Emissions
Tosco Portland Terminal, 5528 NW Doane Avenue, Portland, Oregon

Dear Mr. Grunow,

As discussed in our recent telephone conversations, Tosco's Portland Terminal (Terminal) has collected data indicating far greater than normal throughput through our process water oil-water separator (i.e., Separator 003). If the throughput data we have collected for Separator 003 is correct, there is the potential that total volatile organic compound (VOC) emissions at the Terminal may potentially exceed our permit limits.

Tosco has undertaken an investigation to determine if the increased throughput observed for Separator 003 is real, and if so, determine the source of the additional throughput. Our investigation consists of three phases: 1) meter proving; 2) potential connection to the City of Portland's (City) sanitary sewer system; and 3) source testing to more accurately estimated emissions from the separators. This letter presents some background information regarding our permit and historical separator throughput for the Terminal, and discusses each of the three phases of our investigation.

Background

The Terminal operates under Air Contaminant Discharge Permit No. 26-2026. The permit limits throughput for all four separators (i.e., Separators 001, 002, 003 and 004) at the Terminal to 12,750 gallons per day (gal/day) and 4,653,750 year. Historically, the separator throughput has been well below these limits. Two graphs are

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attached to this letter that describe throughput for all the separators and separately for just Separator 003 since January 2001.

Beginning in October/November 2001 an increase in throughput attributed to normal attributed to seasonal variation was observed. The seasonal increase continued more-or-less through January 2002 when a decrease in throughput was observed for all separators except for Separator 003. Since October/November 2001, Separator 003 throughput has generally remained at an elevated levels compared to the same time period the year before, and during February 2002, increased to a value far greater than any previously recorded.

Reasons for the greater than normal throughput for Separator 003 are attributed to a faulty meter which services Separator 003 and to connection of a ground water recovery system operated by the Willbridge Terminals Group to the Terminal's process system in October 2002.

Meter Proving

A Panametrics sonic meter services the 6-inch line leading from Separator 003. Panametrics was called to the Terminal on May 2, 2001 to determine if the meter was functioning properly. According to Panametrics, the meter servicing Separator 003 performs poorly in low flow conditions as it is difficult for a sonic-type meter to meter low flow in a relatively large pipe (i.e., 6-inch line). More specifically, under low flow conditions, the Panametrics meter continues to count flow at a default value of 10 gallons per minute (gpm) until the fault is cleared (i.e., flow increases). It is our opinion that the spike in Separator 003 throughput observed during February 2002 is attributed to a poorly functioning meter functioning, possibly as a result of low flow conditions which is generally the case in Separator 003.

Ground Water Recovery System – City of Portland Sanitary Sewer System

The ground water recovery system consists of a sheet-pile cutoff wall installed around the City's storm water outfall and several hydrogeologically upgradient recovery wells. Recovered ground water and product are pumped to a dedicated system consisting primarily of an enclosed oil-water separator, batch tank, filter vessels and a recovered product storage tank. Separated product is recycled; whereas, the recovered water is pumped into the Terminal's process line. It is estimated that flow into the system oil-water separator is at the rate of approximately 15 gallons per minute (gpm). Based on this assumption, the volume of additional flow introduced into Separator 003 on a monthly basis is approximately 669,600 gallons. It is our opinion that the increase in flow from Separator 003 observed beginning in October/November (i.e., the increase

from approximately 300,000 to 400,000 gallons to approximately 1,000,000 gallons) can be attributed to the ground water recovery system.

Numerous underground utilities prevented connection of the ground water recovery system directly into City's sanitary sewer system as originally planned. However, partly because of concerns over the additional flow to Separator 003, the Willbridge Terminals Group has revisited the issue and has contracted KHM Environmental Management, Inc. (KHM) to make the connection. It is KHM's estimate that this work will be completed in approximately 3 months (i.e., August 2001). KHM's estimate was qualified as being somewhat optimistic since the City may require significant modifications to the system beyond the addition of a carbon filtration system that is already planned.

Source Testing

The Terminal is in the process of contracting Trinity Consultants (Trinity) to perform source testing which would allow us to better estimate emissions resulting from the Terminal's four oil-water separators. Historically, an emissions factor equal to 5 pounds of VOCs per 1,000 gallons of throughput has been assumed. The source testing will consist of collecting multiple grab wastewater samples from the Terminal's separators and the ground water recovery system, and possibly longer-term composite samples and evaluating the samples for the presence of VOCs s. This analytical data will be used to calculate both "expected" and "worst-case" factors. The worse-case factor will assume that all VOCs present in the wastewater are volatized, while the expected factor will be more realistic and take local conditions into account. It is expected that the source testing study will be completed in approximately 2 months.

Summary

The spike in Separator 003 throughput observed during February 2002 is likely the result of a poorly functioning meter. In the absence of good data, we propose that the February 2001 (i.e., 163,000 gallons) total and the estimated monthly contribution from the ground water recovery system (i.e., 669,600 gallons) be added together to more accurately estimate Separator 003 throughput for February 2002 (i.e., proposed 832,600 gallons). Emissions would then be recalculated using the existing using the existing emissions. Once results of the new source testing have been reviewed and determined to representative of site conditions, we propose that monthly emissions for 2002 be recalculated. When the flow from the ground water recovery system is plumbed directly into the City's sanitary sewer system, flow through Separator 003 is expected to decrease back to historical values where the resultant emissions were not substantial enough to affect permit limitations.

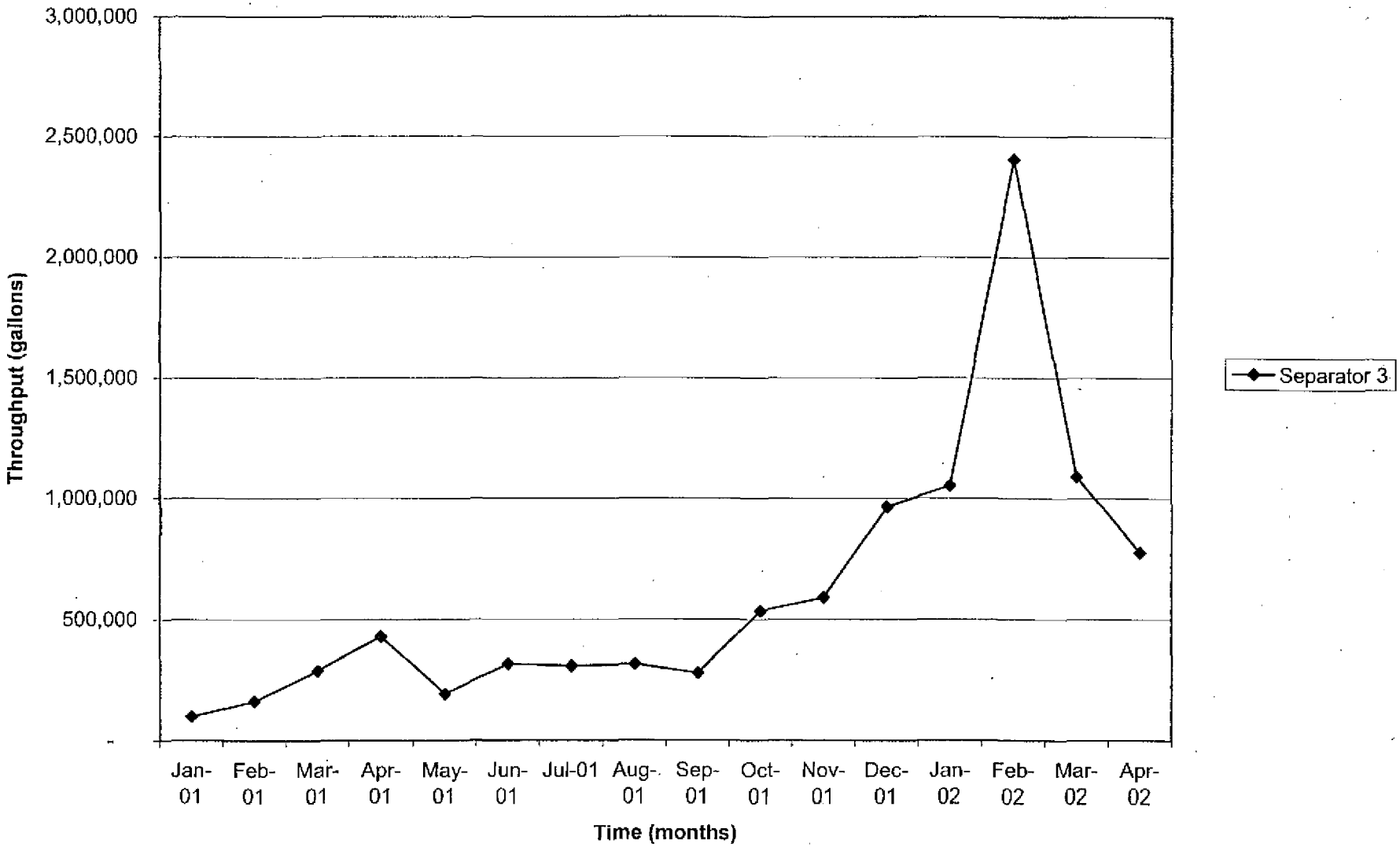
Tosco appreciates DEQ's assistance regarding air emissions at the Portland Terminal. Please contact the undersigned at (503) 248-1552 if you have questions concerning the information provided in this letter or require additional information.

Sincerely,

William H. Collins
Environmental Compliance Specialist

cc: John Sherman – Terminal Superintendent
Marty Cramer – Property Risk Management Group – Phillips Petroleum
HES Files

Portland Terminal - Separator 003 Throughput



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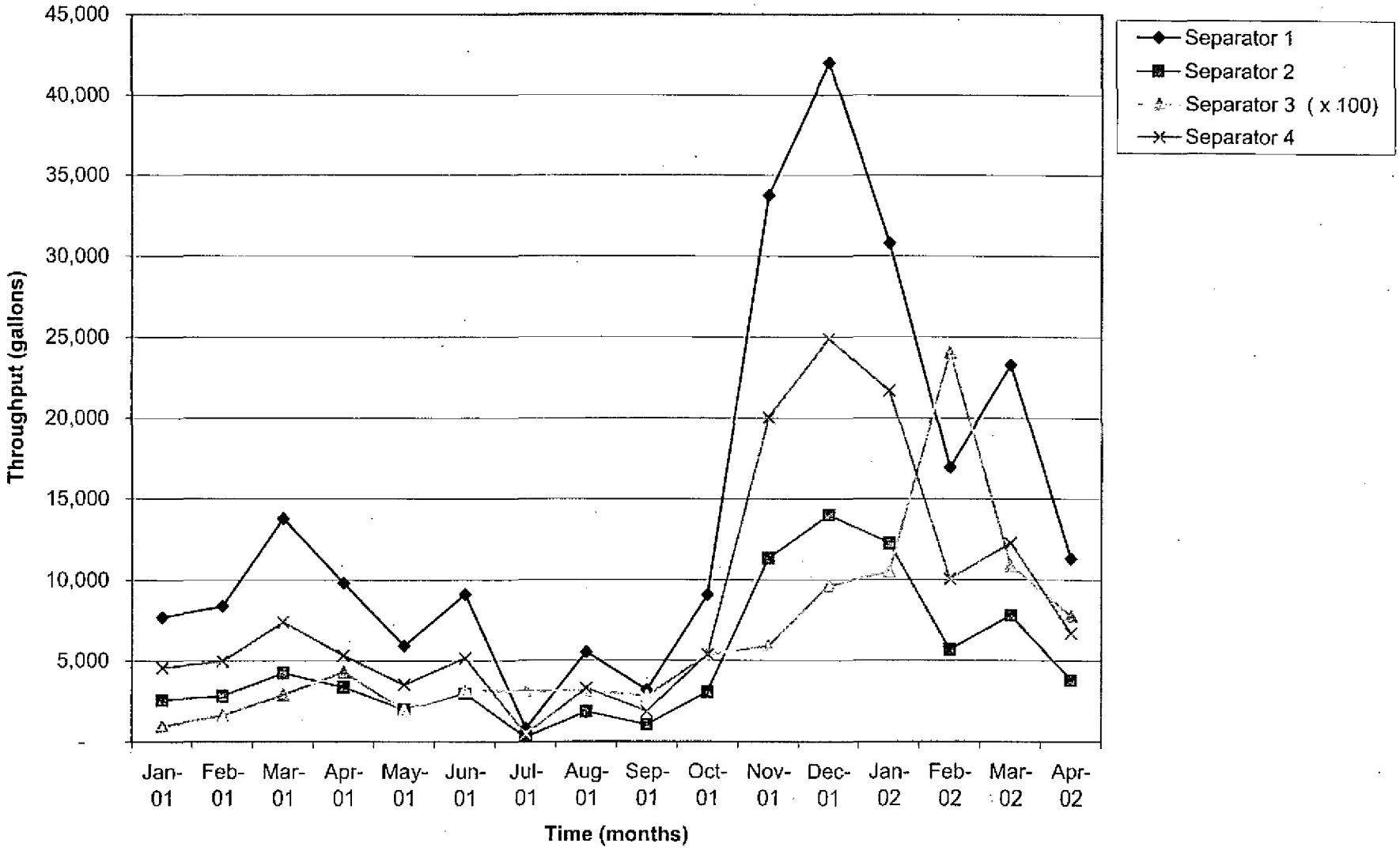
Portland Terminal Separator Throughput



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KHM ENVIRONMENTAL MANAGEMENT

7150 SW Hampton, Suite 220
Tigard, Oregon 97223
Phone (503) 639-8098
Fax (503) 639-7619

LETTER OF TRANSMITTAL

To:	Mr. Martin Cramer	**From:**	R. Scott Miller
Company:	Philips Petroleum Company 5528 NW Doane Avenue Portland, OR 97210	**Date:**	October 14, 2002
Re:	Discharge Monitoring Report September 2002 Tosco-Chevron Remediation Site	**Project #:**	B17-05H Permit No. 500.015

Mr. Cramer,

Attached is the Discharge Monitoring Report (DMR) form for September 2002. The system operated in accordance with the industrial wastewater discharge Permit No. 500.015. Please sign the signatory certification statement (printed on bottom of DMR).

Please submit the letter of transmittal (addressed to Eric Deberry), the signed DMR, and the analytical results to the Industrial Source Control Division. A self-addressed envelope has been provided for your convenience.

If you have any questions regarding the enclosed DMR, please feel free to contact me at (503) 639-8098. Thank you.

R. Scott Miller
KHM Environmental Management, Inc.

KHM ENVIRONMENTAL MANAGEMENT

7150 SW Hampton, Suite 220
Tigard, Oregon 97223
Phone (503) 639-8098
Fax (503) 639-7619

LETTER OF TRANSMITTAL

To:	Mr. Eric De Berry	**From:**	R. Scott Miller
Company:	Industrial Source Control Division Water Pollution Control 6543 N. Burlington Avenue Portland, OR 97203-5452	**Date:**	October 14, 2002
Re:	Discharge Monitoring Report September 2002 Tosco-Chevron Remediation Site	**Project #:**	B17-05H Permit No. 500.015

Mr. Deberry,

In late August 2002, the existing recovery system at the Tosco-Remediation Site located at 5528 NW Doane Avenue in Portland, Oregon was modified to provide separate discharge points for the process water and recovery system effluent. The effluent is currently being discharged to the sanitary sewer.

Water samples were collected by KHM Environmental Management on September 12, 2002 (Grab) and September 26, 2002 (Composite). Samples were collected by discharging water from sample ports on the process piping directly into laboratory-prepared containers. The sample containers were sealed, labeled, placed in a cooler with ice, and transported to the project laboratory. The effluent samples were analyzed for HEM Oil and Grease (APHA/EPA Method), volatile organic compounds (EPA 624), semivolatile organic compounds (EPA 625), and total metals (EPA 200). Laboratory analysis was performed by North Creek Analytical (NCA) in Beaverton, Oregon. A copy of the laboratory analytical reports is included as Attachment 1.

The monitoring was conducted in accordance with the industrial wastewater discharge Permit No. 500.015. The discharge monitoring report (DMR) is being submitted as the first compliance self-monitoring report and is included as Attachment 2. All parameters monitored were within the limits listed in the facility's discharge permit.

If you have any questions regarding the enclosed DMR, please feel free to contact me at (503) 639-8098. Thank you.

R. Scott Miller
KHM Environmental Management, Inc.

Cc: Martin Cramer, Philips Petroleum Company

CITY OF PORTLAND
INDUSTRIAL WASTEWATER DISCHARGE
FIRST FINAL COMPLIANCE SELF-MONITORING REPORT

INDUSTRY NAME: Tosco-Chevron Remediation Site

PERMIT NUMBER: 500.015

REPORT DUE DATE: October 15, 2002

SAMPLING PERIOD: September 2002

For Industrial Source Control Division Use Only

Date Postmarked/Received **Date Entered**

Entered By:

Comments:

SAMPLE DATE	POINT OF COMPLIANCE	SAMPLE TYPE
09/12/02	Mid	GRAB

PARAMETER	ANALYSIS METHOD	REPORTED CONCENTRATION		MDL	LIMITS DAILY	LIMITS MONTHLY	COMMENTS
HEM Oil & Grease (Total) [1]	APHA/EPA	ND	mg/L	5.00	N/A	N/A	
HEM Oil and Grease (Non-Polar)	APHA/EPA	ND	mg/L	5.00	110 mg/L	N/A	
HEM Oil and Grease (Polar)	APHA/EPA	ND	mg/L	5.00	500 mg/L	N/A	
pH	HORIBA Meter	7.34	SU		5.0 - 11.5	N/A	
Volatile Organic Compounds(EPA 624)	EPA 624	ND	mg/L	0.00200-0.0100			
Semivolatile Organic Compounds (EPA 625)	EPA 625	ND	mg/L	0.00500-0.0250		N/A	

1. If the value of HEM Oil and Grease Total is greater than 110 mg/L, then the Permittee shall analyze the sample for the HEM Oil and Grease Non-Polar constituent.

SAMPLE DATE	POINT OF COMPLIANCE	SAMPLE TYPE
09/26/02	Mid	COMPOSITE

PARAMETER	ANALYSIS METHOD	REPORTED CONCENTRATION		MDL	LIMITS DAILY	LIMITS MONTHLY	COMMENTS
Arsenic (Total)	EPA 200	0.00156	mg/L	0.0010	0.2 mg/L	N/A	
Cadmium (Total)	EPA 200	ND	mg/L	0.0010	0.7 mg/L	N/A	
Chromium (Total)	EPA 200	ND	mg/L	0.0010	5.0 mg/L	N/A	
Copper (Total)	EPA 200	ND	mg/L	0.0020	3.7 mg/L	N/A	
Lead (Total)	EPA 200	0.00115	mg/L	0.0010	0.7 mg/L	N/A	

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Date: 10/14/02

All self-monitoring reports (SMR) must include the following to be considered complete. For more detailed information regarding these items, please refer to the colored reference sheet. If you have any questions, please contact your permit manager for assistance.

Self Monitoring Report Check List:

- Chain of Custody form
- Analytical Results with Method Detection Limits (MDL)
- QA/QC Results, if applicable
- Signed Signatory Certification Statement (Printed on bottom of SMR)
- Completed Self Monitoring Report form

Whenever appropriate:

- Hand Composite Sample form
- Copies of pH charts showing the violation
- Calculations of monthly average
- Any other required reports

To assure prompt delivery, mail all monitoring results to:

Industrial Source Control Division
Water Pollution Control Laboratory
6543 N. Burlington Avenue
Portland, OR 97203-5452

Attn: Eric De Berry

nca™
www.ncalabs.com

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

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OCT 08 2002

KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Mid	P2I0324-01	Water	09/12/02 07:15	09/12/02 12:00
Post	P2I0324-02	Water	09/12/02 07:20	09/12/02 12:00

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Jones, Project Manager

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Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
425.420.9200 fax 425.420.9210
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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Total Metals per EPA 200 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Mid (P2I0324-01) Water					Sampled: 09/12/02 Received: 09/12/02				
Arsenic	**0.00193**	0.00100	mg/l	1	EPA 200.8	09/17/02	09/18/02	2090676	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Post (P2I0324-02) Water					Sampled: 09/12/02 Received: 09/12/02				
Arsenic	**0.00224**	0.00100	mg/l	1	EPA 200.8	09/17/02	09/18/02	2090676	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	

www.ncalabs.com

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Purgeables per EPA Method 624

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Mid (P2I0324-01) Water					Sampled: 09/12/02 Received: 09/12/02				
Benzene	ND	2.00	ug/l	1	EPA 624	09/19/02	09/19/02	2090759	
Bromodichloromethane	ND	2.00	"	"	"	"	"	"	
Bromoform	ND	2.00	"	"	"	"	"	"	
Bromomethane	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.00	"	"	"	"	"	"	
Chlorobenzene	ND	2.00	"	"	"	"	"	"	
Chloroethane	ND	5.00	"	"	"	"	"	"	
Chloroform	ND	2.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.00	"	"	"	"	"	"	
Ethylbenzene	ND	2.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.00	"	"	"	"	"	"	
Tetrachloroethene	ND	2.00	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.00	"	"	"	"	"	"	
Vinyl chloride	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	*97.5 %*	*84-118*							
Surr: 1,2-DCA-d4	*104 %*	*75-130*							
Surr: Dibromofluoromethane	*105 %*	*81-121*							
Surr: Toluene-d8	*102 %*	*87-111*							

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Purgeables per EPA Method 624

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post (P2I0324-02) Water					Sampled: 09/12/02 Received: 09/12/02				
Benzene	ND	2.00	ug/l	1	EPA 624	09/19/02	09/19/02	2090759	
Bromodichloromethane	ND	2.00	"	"	"	"	"	"	
Bromoform	ND	2.00	"	"	"	"	"	"	
Bromomethane	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.00	"	"	"	"	"	"	
Chlorobenzene	ND	2.00	"	"	"	"	"	"	
Chloroethane	ND	5.00	"	"	"	"	"	"	
Chloroform	ND	2.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.00	"	"	"	"	"	"	
Ethylbenzene	ND	2.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.00	"	"	"	"	"	"	
Tetrachloroethene	ND	2.00	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.00	"	"	"	"	"	"	
Vinyl chloride	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	*98.0 %*	*84-118*							
Surr: 1,2-DCA-d4	*104 %*	*75-130*							
Surr: Dibromofluoromethane	*103 %*	*81-121*							
Surr: Toluene-d8	*101 %*	*87-111*							

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Acid and Base/Neutral Extractables per EPA Method 625

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Mid (P2I0324-01) Water					Sampled: 09/12/02 Received: 09/12/02				
Acenaphthene	ND	5.00	ug/l	1	EPA 625	09/18/02	09/30/02	2090704	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzidine	ND	50.0	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	5.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	5.00	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	10.0	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	5.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	10.0	"	"	"	"	"	"	
2-Chloronaphthalene	ND	5.00	"	"	"	"	"	"	
2-Chlorophenol	ND	5.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	5.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	5.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	5.00	"	"	"	"	"	"	
1,2 Diphenylhydrazine (as Azobenzene)	ND	5.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	5.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	5.00	"	"	"	"	"	"	
Diethyl phthalate	ND	5.00	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	10.0	"	"	"	"	"	"	
Dimethyl phthalate	ND	5.00	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	10.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	25.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Acid and Base/Neutral Extractables per EPA Method 625

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Mid (P210324-01) Water					Sampled: 09/12/02 Received: 09/12/02				
Hexachlorobenzene	ND	5.00	ug/l	1	EPA 625	09/18/02	09/30/02	2090704	
Hexachlorobutadiene	ND	10.0	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	10.0	"	"	"	"	"	"	
Hexachloroethane	ND	10.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	5.00	"	"	"	"	"	"	
Isophorone	ND	5.00	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Nitrobenzene	ND	5.00	"	"	"	"	"	"	
2-Nitrophenol	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	25.0	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	5.00	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	10.0	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	10.0	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Phenol	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.00	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	5.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*59.4 %*	*26-135*							
Surr: 2-Fluorophenol	*30.2 %*	*6-124*							
Surr: Nitrobenzene-d5	*61.6 %*	*23-147*							
Surr: Phenol-d6	*20.1 %*	*11-130*							
Surr: p-Terphenyl-d14	*104 %*	*38-149*							
Surr: 2,4,6-Tribromophenol	*87.4 %*	*19-126*							

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Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Acid and Base/Neutral Extractables per EPA Method 625

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post (P2I0324-02) Water					Sampled: 09/12/02 Received: 09/12/02				
Acenaphthene	ND	5.00	ug/l	1	EPA 625	09/18/02	09/30/02	2090704	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzidine	ND	50.0	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	5.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	5.00	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	10.0	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	5.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	10.0	"	"	"	"	"	"	
2-Chloronaphthalene	ND	5.00	"	"	"	"	"	"	
2-Chlorophenol	ND	5.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	5.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	5.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	5.00	"	"	"	"	"	"	
1,2 Diphenylhydrazine (as Azobenzene)	ND	5.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	5.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	5.00	"	"	"	"	"	"	
Diethyl phthalate	ND	5.00	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	10.0	"	"	"	"	"	"	
Dimethyl phthalate	ND	5.00	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	10.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	25.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Acid and Base/Neutral Extractables per EPA Method 625

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post (P2I0324-02) Water					Sampled: 09/12/02 Received: 09/12/02				
Hexachlorobenzene	ND	5.00	ug/l	1	EPA 625	09/18/02	09/30/02	2090704	
Hexachlorobutadiene	ND	10.0	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	10.0	"	"	"	"	"	"	
Hexachloroethane	ND	10.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	5.00	"	"	"	"	"	"	
Isophorone	ND	5.00	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Nitrobenzene	ND	5.00	"	"	"	"	"	"	
2-Nitrophenol	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	25.0	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	5.00	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	10.0	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	10.0	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Phenol	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.00	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	5.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*57.1 %*	*26-135*							
Surr: 2-Fluorophenol	*30.1 %*	*6-124*							
Surr: Nitrobenzene-d5	*62.0 %*	*23-147*							
Surr: Phenol-d6	*19.4 %*	*11-130*							
Surr: p-Terphenyl-d14	*95.9 %*	*38-149*							
Surr: 2,4,6-Tribromophenol	*73.4 %*	*19-126*							

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Conventional Chemistry Parameters by APHA/EPA Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Mid (P2I0324-01) Water					Sampled: 09/12/02 Received: 09/12/02				
Fats, Oil & Grease (total)	ND	5.00	mg/l	1	EPA 1664	09/16/02	09/17/02	2I16014	
Fats, Oil & Grease (non-polar)	ND	5.00	"	"	"	"	"	"	
Fats, Oil & Grease (polar)	ND	5.00	"	"	"	"	"	"	
Post (P2I0324-02) Water					Sampled: 09/12/02 Received: 09/12/02				
Fats, Oil & Grease (total)	ND	5.00	mg/l	1	EPA 1664	09/16/02	09/17/02	2I16014	
Fats, Oil & Grease (non-polar)	ND	5.00	"	"	"	"	"	"	
Fats, Oil & Grease (polar)	ND	5.00	"	"	"	"	"	"	

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Total Metals per EPA 200 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2090676 - EPA 200/3005										
Blank (2090676-BLK1)				Prepared: 09/17/02 Analyzed: 09/19/02						
Arsenic	ND	0.00100	mg/l							
Cadmium	ND	0.00100	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00200	"							
Lead	ND	0.00100	"							
LCS (2090676-BS1)				Prepared: 09/17/02 Analyzed: 09/19/02						
Arsenic	0.0999	0.00100	mg/l	0.100		99.9	85-115			
Cadmium	0.106	0.00100	"	0.100		106	85-115			
Chromium	0.107	0.00100	"	0.100		107	85-115			
Copper	0.106	0.00200	"	0.100		106	85-115			
Lead	0.110	0.00100	"	0.100		110	85-115			
Duplicate (2090676-DUP1)	**Source: P2I0348-01**			Prepared: 09/17/02 Analyzed: 09/19/02						
Arsenic	ND	0.00100	mg/l		ND				20	
Cadmium	ND	0.00100	"		ND				20	
Chromium	ND	0.00100	"		ND			3.39	20	
Copper	0.00374	0.00200	"		0.00376			0.533	20	
Lead	ND	0.00100	"		ND			6.32	20	
Matrix Spike (2090676-MS1)	**Source: P2I0348-01**			Prepared: 09/17/02 Analyzed: 09/19/02						
Arsenic	0.103	0.00100	mg/l	0.100	ND	103	70-130			
Cadmium	0.106	0.00100	"	0.100	ND	106	70-130			
Chromium	0.105	0.00100	"	0.100	ND	104	70-130			
Copper	0.107	0.00200	"	0.100	0.00376	103	70-130			
Lead	0.106	0.00100	"	0.100	ND	106	70-130			
Matrix Spike (2090676-MS2)	**Source: P2I0348-02**			Prepared: 09/17/02 Analyzed: 09/19/02						
Arsenic	0.105	0.00100	mg/l	0.100	ND	105	70-130			
Cadmium	0.105	0.00100	"	0.100	ND	105	70-130			
Chromium	0.106	0.00100	"	0.100	ND	106	70-130			
Copper	0.104	0.00200	"	0.100	0.00207	102	70-130			
Lead	0.105	0.00100	"	0.100	ND	105	70-130			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Purgeables per EPA Method 624 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2090759 - EPA 5030B										
Blank (2090759-BLK1)				Prepared & Analyzed: 09/19/02						
Benzene	ND	2.00	ug/l							
Bromodichloromethane	ND	2.00	"							
Bromoform	ND	2.00	"							
Bromomethane	ND	10.0	"							
Carbon tetrachloride	ND	2.00	"							
Chlorobenzene	ND	2.00	"							
Chloroethane	ND	5.00	"							
Chloroform	ND	2.00	"							
Chloromethane	ND	5.00	"							
Dibromochloromethane	ND	2.00	"							
1,2-Dichlorobenzene	ND	2.00	"							
1,3-Dichlorobenzene	ND	2.00	"							
1,4-Dichlorobenzene	ND	2.00	"							
1,1-Dichloroethane	ND	2.00	"							
1,2-Dichloroethane	ND	2.00	"							
1,1-Dichloroethene	ND	2.00	"							
trans-1,2-Dichloroethene	ND	2.00	"							
1,2-Dichloropropane	ND	2.00	"							
cis-1,3-Dichloropropene	ND	2.00	"							
trans-1,3-Dichloropropene	ND	2.00	"							
Ethylbenzene	ND	2.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	2.00	"							
Tetrachloroethene	ND	2.00	"							
Toluene	ND	2.00	"							
1,1,1-Trichloroethane	ND	2.00	"							
1,1,2-Trichloroethane	ND	2.00	"							
Trichloroethene	ND	2.00	"							
Trichlorofluoromethane	ND	5.00	"							
Vinyl chloride	ND	2.00	"							
Surr: 4-BFB	*20.0*		"	*20.0*		*100*	*84-118*			
Surr: 1,2-DCA-d4	*20.4*		"	*20.0*		*102*	*75-130*			
Surr: Dibromofluoromethane	*20.3*		"	*20.0*		*102*	*81-121*			
Surr: Toluene-d8	*20.2*		"	*20.0*		*101*	*87-111*			

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Purgeables per EPA Method 624 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2090759 - EPA 5030B										
LCS (2090759-BS1)				Prepared & Analyzed: 09/19/02						
Benzene	20.7	2.00	ug/l	20.0		104	80-120			
Chlorobenzene	21.8	2.00	"	20.0		109	75-130			
1,1-Dichloroethene	20.0	2.00	"	20.0		100	61-145			
Toluene	21.2	2.00	"	20.0		106	76-125			
Trichloroethene	21.8	2.00	"	20.0		109	71-120			
Surr: 4-BFB	*20.1*		"	*20.0*		*100*	*84-118*			
Surr: 1,2-DCA-d4	*20.4*		"	*20.0*		*102*	*75-130*			
Surr: Dibromofluoromethane	*20.6*		"	*20.0*		*103*	*81-121*			
Surr: Toluene-d8	*20.6*		"	*20.0*		*103*	*87-111*			
Matrix Spike (2090759-MS1)	**Source: P2I0379-02**			Prepared & Analyzed: 09/19/02						
Benzene	21.8	2.00	ug/l	20.0	ND	108	76-127			
Chlorobenzene	22.5	2.00	"	20.0	ND	112	75-130			
1,1-Dichloroethene	21.3	2.00	"	20.0	ND	106	61-145			
Toluene	22.0	2.00	"	20.0	ND	109	76-125			
Trichloroethene	19.5	2.00	"	20.0	ND	97.5	71-120			
Surr: 4-BFB	*20.1*		"	*20.0*		*100*	*84-118*			
Surr: 1,2-DCA-d4	*20.4*		"	*20.0*		*102*	*75-130*			
Surr: Dibromofluoromethane	*20.6*		"	*20.0*		*103*	*81-121*			
Surr: Toluene-d8	*20.6*		"	*20.0*		*103*	*87-111*			
Matrix Spike Dup (2090759-MSD1)	**Source: P2I0379-02**			Prepared & Analyzed: 09/19/02						
Benzene	21.8	2.00	ug/l	20.0	ND	108	76-127	0.00	11	
Chlorobenzene	22.7	2.00	"	20.0	ND	114	75-130	0.885	13	
1,1-Dichloroethene	21.1	2.00	"	20.0	ND	106	61-145	0.943	14	
Toluene	21.8	2.00	"	20.0	ND	108	76-125	0.913	13	
Trichloroethene	20.0	2.00	"	20.0	ND	100	71-120	2.53	14	
Surr: 4-BFB	*19.9*		"	*20.0*		*99.5*	*84-118*			
Surr: 1,2-DCA-d4	*20.2*		"	*20.0*		*101*	*75-130*			
Surr: Dibromofluoromethane	*20.2*		"	*20.0*		*101*	*81-121*			
Surr: Toluene-d8	*20.2*		"	*20.0*		*101*	*87-111*			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2090704 - EPA 3510/600 Series										
Blank (2090704-BLK1)				Prepared: 09/18/02 Analyzed: 09/30/02						
Acenaphthene	ND	5.00	ug/l							
Acenaphthylene	ND	5.00	"							
Anthracene	ND	5.00	"							
Benzidine	ND	50.0	"							
Benzo (a) anthracene	ND	5.00	"							
Benzo (a) pyrene	ND	5.00	"							
Benzo (b) fluoranthene	ND	5.00	"							
Benzo (ghi) perylene	ND	5.00	"							
Benzo (k) fluoranthene	ND	5.00	"							
4-Bromophenyl phenyl ether	ND	5.00	"							
Butyl benzyl phthalate	ND	5.00	"							
4-Chloro-3-methylphenol	ND	5.00	"							
Bis(2-chloroethoxy)methane	ND	10.0	"							
Bis(2-chloroethyl)ether	ND	5.00	"							
Bis(2-chloroisopropyl)ether	ND	10.0	"							
2-Chloronaphthalene	ND	5.00	"							
2-Chlorophenol	ND	5.00	"							
4-Chlorophenyl phenyl ether	ND	5.00	"							
Chrysene	ND	5.00	"							
Di-n-butyl phthalate	ND	5.00	"							
Di-n-octyl phthalate	ND	5.00	"							
Dibenzo (a,h) anthracene	ND	5.00	"							
1,2 Diphenylhydrazine (as Azobenzene)	ND	5.00	"							
1,2-Dichlorobenzene	ND	5.00	"							
1,3-Dichlorobenzene	ND	5.00	"							
1,4-Dichlorobenzene	ND	5.00	"							
3,3'-Dichlorobenzidine	ND	5.00	"							
2,4-Dichlorophenol	ND	5.00	"							
Diethyl phthalate	ND	5.00	"							
2,4-Dimethylphenol	ND	10.0	"							
Dimethyl phthalate	ND	5.00	"							
4,6-Dinitro-2-methylphenol	ND	10.0	"							
2,4-Dinitrophenol	ND	25.0	"							
2,4-Dinitrotoluene	ND	5.00	"							
2,6-Dinitrotoluene	ND	5.00	"							
Bis(2-ethylhexyl)phthalate	ND	10.0	"							

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2090704 - EPA 3510/600 Series										
Blank (2090704-BLK1)				Prepared: 09/18/02 Analyzed: 09/30/02						
Fluoranthene	ND	5.00	ug/l							
Fluorene	ND	5.00	"							
Hexachlorobenzene	ND	5.00	"							
Hexachlorobutadiene	ND	10.0	"							
Hexachlorocyclopentadiene	ND	10.0	"							
Hexachloroethane	ND	10.0	"							
Indeno (1,2,3-cd) pyrene	ND	5.00	"							
Isophorone	ND	5.00	"							
Naphthalene	ND	5.00	"							
Nitrobenzene	ND	5.00	"							
2-Nitrophenol	ND	5.00	"							
4-Nitrophenol	ND	25.0	"							
N-Nitrosodimethylamine	ND	5.00	"							
N-Nitrosodi-n-propylamine	ND	10.0	"							
N-Nitrosodiphenylamine	ND	5.00	"							
Pentachlorophenol	ND	10.0	"							
Phenanthrene	ND	5.00	"							
Phenol	ND	5.00	"							
Pyrene	ND	5.00	"							
1,2,4-Trichlorobenzene	ND	5.00	"							
2,4,6-Trichlorophenol	ND	5.00	"							
Surr: 2-Fluorobiphenyl	*27.9*		"	*75.0*		*37.2*	*26-135*			
Surr: 2-Fluorophenol	*61.6*		"	*150*		*41.1*	*6-124*			
Surr: Nitrobenzene-d5	*55.6*		"	*75.0*		*74.1*	*23-147*			
Surr: Phenol-d6	*40.9*		"	*150*		*27.3*	*11-130*			
Surr: p-Terphenyl-d14	*78.9*		"	*75.0*		*105*	*38-149*			
Surr: 2,4,6-Tribromophenol	*131*		"	*150*		*87.3*	*19-126*			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2090704 - EPA 3510/600 Series										
LCS (2090704-BS1)				Prepared: 09/18/02 Analyzed: 09/27/02						
Acenaphthene	57.6	5.00	ug/l	75.0		76.8	40-110			
4-Chloro-3-methylphenol	85.9	5.00	"	150		57.3	40-110			
2-Chlorophenol	81.2	5.00	"	150		54.1	40-110			
1,4-Dichlorobenzene	44.3	5.00	"	75.0		59.1	20-90			
2,4-Dinitrotoluene	56.4	5.00	"	75.0		75.2	50-110			
4-Nitrophenol	43.4	25.0	"	150		28.9	15-100			
N-Nitrosodi-n-propylamine	51.4	10.0	"	75.0		68.5	40-110			
Pentachlorophenol	109	10.0	"	150		72.7	30-120			
Phenol	35.4	5.00	"	150		23.6	15-110			
Pyrene	71.5	5.00	"	75.0		95.3	40-110			
1,2,4-Trichlorobenzene	50.2	5.00	"	75.0		66.9	25-100			
Surr: 2-Fluorobiphenyl	*50.9*		"	*75.0*		*67.9*	*26-135*			
Surr: 2-Fluorophenol	*64.2*		"	*150*		*42.8*	*6-124*			
Surr: Nitrobenzene-d5	*58.5*		"	*75.0*		*78.0*	*23-147*			
Surr: Phenol-d6	*45.5*		"	*150*		*30.3*	*11-130*			
Surr: p-Terphenyl-d14	*73.8*		"	*75.0*		*98.4*	*38-149*			
Surr: 2,4,6-Tribromophenol	*138*		"	*150*		*92.0*	*19-126*			
LCS Dup (2090704-BSD1)				Prepared: 09/18/02 Analyzed: 09/27/02						
Acenaphthene	60.0	5.00	ug/l	75.0		80.0	40-110	4.08	36	
4-Chloro-3-methylphenol	91.4	5.00	"	150		60.9	40-110	6.20	43	
2-Chlorophenol	88.8	5.00	"	150		59.2	40-110	8.94	38	
1,4-Dichlorobenzene	47.7	5.00	"	75.0		63.6	20-90	7.39	43	
2,4-Dinitrotoluene	58.3	5.00	"	75.0		77.7	50-110	3.31	31	
4-Nitrophenol	45.2	25.0	"	150		30.1	15-100	4.06	36	
N-Nitrosodi-n-propylamine	51.2	10.0	"	75.0		68.3	40-110	0.390	37	
Pentachlorophenol	109	10.0	"	150		72.7	30-120	0.00	40	
Phenol	35.3	5.00	"	150		23.5	15-110	0.283	36	
Pyrene	74.6	5.00	"	75.0		99.5	40-110	4.24	31	
1,2,4-Trichlorobenzene	53.6	5.00	"	75.0		71.5	25-100	6.55	42	
Surr: 2-Fluorobiphenyl	*51.5*		"	*75.0*		*68.7*	*26-135*			
Surr: 2-Fluorophenol	*66.5*		"	*150*		*44.3*	*6-124*			
Surr: Nitrobenzene-d5	*56.3*		"	*75.0*		*75.1*	*23-147*			
Surr: Phenol-d6	*46.0*		"	*150*		*30.7*	*11-130*			
Surr: p-Terphenyl-d14	*74.7*		"	*75.0*		*99.6*	*38-149*			
Surr: 2,4,6-Tribromophenol	*143*		"	*150*		*95.3*	*19-126*			

North Creek Analytical - Portland

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch 2090704 - EPA 3510/600 Series

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2I16014 - Grav. Preparation										
Blank (2I16014-BLK1)				Prepared: 09/16/02 Analyzed: 09/17/02						
Fats, Oil & Grease (total)	ND	5.00	mg/l							
Fats, Oil & Grease (non-polar)	ND	5.00	"							
Fats, Oil & Grease (polar)	ND	5.00	"							
LCS (2I16014-BS1)				Prepared: 09/16/02 Analyzed: 09/17/02						
Fats, Oil & Grease (total)	35.2	5.00	mg/l	42.1		83.6	78-107			
Fats, Oil & Grease (non-polar)	15.4	5.00	"	20.1		76.6	65-132			
LCS Dup (2I16014-BSD1)				Prepared: 09/16/02 Analyzed: 09/17/02						
Fats, Oil & Grease (total)	40.2	5.00	mg/l	42.1		95.5	78-107	13.3	10	Q-07
Fats, Oil & Grease (non-polar)	18.5	5.00	"	20.1		92.0	65-132	18.3	20	

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/01/02 12:34

Notes and Definitions

Q-07	The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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CHEVRON U.S.A., Inc. CHAIN OF CUSTODY REPORT PO10324

CHEVRON INFORMATION

Facility Number: 100 - 1868
Site Address: Willbridge Lt Products
City, State, ZIP: Terminal, Portland, OR
Service Code: ☐ Site Assessment
Service Order: ☑ Remediation
Cost Element: 75100100 ☐ O & M
Chevron Project Manager: Gerald O'Regan ☐ GWM

CONSULTANT INFORMATION

Name: KHM Project# B17-0514
Address: Tigard, OR
Phone: 503-639-8098 Fax: [illegible]-7619
Project Manager: Scott Miller Airbill#:
Sample Collection by: NWH

Laboratory Turnaround Time

☐ 1 Business Day
☐ 3 Business Days
☐ 5 Business Days
☐ ~~10 Business Days~~
☐ 3 Day Air Samples
(Please Select One)

☐ AK ☐ OR ☐ WA ☐ NW Series

SAMPLE INDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CON-TAINERS	TPH-HCID	TPH-Gas	BTEX Only EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS SemiVols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved	TCLP or RCRA Metals (8)						NCA SAMPLE NUMBER
1. Mid	9-12-2/07:15	W	5																				
2. POST	9-12-2/07:40	W	5																				
3.																							
4.																							
5.																							
6.																							
7.																							
8.																							
9.																							
10.																							

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.	[signature]	KHM	9/12/02@11:45	[signature]		
2.	[signature]			Erica Dakan	NCA	9/12/02 12:00
3.						

Additional Comments:

Chev CoC. Rev. 3.3. 2/99

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KHM Environmental	Project: Tosco #0608, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/11/02 16:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Post C-1 Composite	P210827-01	Water	09/26/02 13:00	09/27/02 16:20

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KHM Environmental	Project: Tosco #0608, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/11/02 16:13

Total Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post C-1 Composite (P210827-01) Water						Sampled: 09/26/02	Received: 09/27/02		
Arsenic	**0.00156**	0.00100	mg/l	1	EPA 6020	10/09/02	10/11/02	2100304	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00200	"	"	"	"	"	"	
Lead	**0.00115**	0.00100	"	"	"	"	"	"	

North Creek Analytical - Portland

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KHM Environmental	Project: Tosco #0608, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/11/02 16:13

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2100304 - EPA 200/3005										
Blank (2100304-BLK1)				Prepared: 10/09/02 Analyzed: 10/10/02						
Arsenic	ND	0.00100	mg/l							
Cadmium	ND	0.00100	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00200	"							
Lead	ND	0.00100	"							
LCS (2100304-BS1)				Prepared: 10/09/02 Analyzed: 10/10/02						
Arsenic	0.100	0.00100	mg/l	0.100		100	80-120			
Cadmium	0.0988	0.00100	"	0.100		98.8	80-120			
Chromium	0.104	0.00100	"	0.100		104	80-120			
Copper	0.100	0.00200	"	0.100		100	80-120			
Lead	0.100	0.00100	"	0.100		100	80-120			
Duplicate (2100304-DUP1)	**Source: P2I0825-01**			Prepared: 10/09/02 Analyzed: 10/10/02						
Arsenic	0.00664	0.00100	mg/l		0.00678			2.09	20	
Cadmium	ND	0.00100	"		ND				20	
Chromium	ND	0.00100	"		ND				20	
Copper	0.00298	0.00200	"		0.00277			7.30	20	
Lead	ND	0.00100	"		ND			0.00	20	
Matrix Spike (2100304-MS1)	**Source: P2I0825-01**			Prepared: 10/09/02 Analyzed: 10/10/02						
Arsenic	0.117	0.00844	mg/l	0.100	ND	110	75-125			
Cadmium	0.101	0.00100	"	0.100	ND	101	75-125			
Chromium	0.104	0.00100	"	0.100	ND	104	75-125			
Copper	0.102	0.00200	"	0.100	0.00277	99.2	75-125			
Lead	0.0996	0.00100	"	0.100	ND	99.0	75-125			
Matrix Spike (2100304-MS2)	**Source: P2I0825-02**			Prepared: 10/09/02 Analyzed: 10/10/02						
Arsenic	0.131	0.00820	mg/l	0.100	0.0183	113	75-125			
Cadmium	0.104	0.00100	"	0.100	ND	104	75-125			
Chromium	0.116	0.00100	"	0.100	0.00432	112	75-125			
Copper	0.114	0.00200	"	0.100	0.0105	104	75-125			
Lead	0.101	0.00100	"	0.100	0.00484	96.2	75-125			

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KHM Environmental	Project: Tosco #0608, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	10/11/02 16:13

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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P210827

TOSCO CHAIN OF CUSTODY REPORT

TOSCO INFORMATION

Facility Number: 0608
Site Address: 5528 NW Doane Ave
City, State, ZIP: Portland, OR 97210
Project/AWO Code
Tosco Manager: Marty Cramer
FACILITY TYPE: (check one) ☐ BP/Ⓚ ☑ Terminal/Bulk Plant
☐ Brown Bear ☐ Former 76 Site ☐ Other

CONSULTANT INFORMATION

Firm: KHM Project# B17-05H
Address: Tigard, OR
Phone: 503-639-8098 Fax:
Project Manager: Scott Miller E-mail:
Sample Collection by: NWH

Quality Assurance Data Level: [A] [B]
A: Standard Summary
B: Standard + Chromatograms

Laboratory Turnaround Days: [10] [5] [3] [2] [1]
10 Day - Standard

○ OR ○ WA ○ AK ○ NW Series ○ ID

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONTAINERS	TPH-HCID	TPH-Gas	BTEX EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS SemiVols. EPA 8270	PAH's 8270 SIM or 8310	Lead: Total or Dissolved	TCLP or RCRA Metals (8)	Grab Composite	NCA SAMPLE NUMBER
1. Post C-1 Composite	9-26-2/13ºº	W	1													X		X	
2.																			
3.																			
4.																			
5.																			
6.																			
7.																			
8.																			
9.																			
10.																			

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.		KHM	9-27-2 16:00		NCA	9/27/02@16:00
2.					NCA	9/27 @1620
3.						

Comments: 4.7°C, -0.2, 4.8°C, 0.9°C

Page 1 of 1
Rev. Tos3.3.2/99

Comments:

Distribution: White - Laboratory Yellow - Consultant Photocopy - Tosco

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ENVIRONMENTAL MANAGEMENT, INC.

KHM

LETTER OF TRANSMITTAL

To:	Mr. Eric De Berry	**From:**	R. Scott Miller
Company:	Industrial Source Control Division Water Pollution Control 6543 N. Burlington Avenue Portland, OR 97203-5452	**Date:**	January 7, 2002
Re:	Discharge Monitoring Report December 2002 Tosco-Chevron Remediation Site	**Project #:**	B17-05H Permit No. 500.015

Mr. De Berry,

Water samples were collected by KHM Environmental Management on December 11, 2002 (Grab and Composite). Samples were collected by discharging water from sample ports on the process piping directly into laboratory-prepared containers. The sample containers were sealed, labeled, placed in a cooler with ice, and transported to the project laboratory. The effluent samples were analyzed for HEM Oil and Grease (APHA/EPA Method), volatile organic compounds (EPA 624), semivolatile organic compounds (EPA 625), and total metals (EPA 200). Laboratory analysis was performed by North Creek Analytical (NCA) in Beaverton, Oregon. A copy of the laboratory analytical reports is included.

The monitoring was conducted in accordance with the industrial wastewater discharge Permit No. 500.015. The discharge monitoring report (DMR) is being submitted as the second compliance self-monitoring report and is included. All parameters monitored were within the limits listed in the facility's discharge permit.

If you have any questions regarding the enclosed DMR, please feel free to contact me at (503) 639-8098. Thank you.

R. Scott Miller
KHM Environmental Management, Inc.

cc: Martin Cramer, Philips Petroleum Company ✓

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CITY OF PORTLAND
INDUSTRIAL WASTEWATER DISCHARGE
THIRD FINAL COMPLIANCE SELF-MONITORING REPORT

INDUSTRY NAME: Tosco-Chevron Remediation Site

PERMIT NUMBER: 500.015

REPORT DUE DATE: January 15, 2003

SAMPLING PERIOD: December 2002

For Industrial Source Control Division Use Only

Date Postmarked/Received **Date Entered**

Entered By:

Comments:

SAMPLE DATE	POINT OF COMPLIANCE	SAMPLE TYPE
12/11/02	1A	GRAB

PARAMETER	ANALYSIS METHOD	REPORTED CONCENTRATION		MDL	LIMITS DAILY	LIMITS MONTHLY	COMMENTS
HEM Oil & Grease (Total) [1]	APHA/EPA	ND	mg/L	5.00	N/A	N/A	
HEM Oil and Grease (Non-Polar)	APHA/EPA		mg/L	5.00	110 mg/L	N/A	Not analyzed
HEM Oil and Grease (Polar)	APHA/EPA		mg/L	5.00	500 mg/L	N/A	Not analyzed
pH		6.51	SU		5.0 - 11.5	N/A	
Volatile Organic Compounds(EPA 624)	EPA 624	ND	mg/L	0.00200-0.0100			
Semivolatile Organic Compounds (EPA 625)	EPA 625	ND	mg/L	0.00500-0.0250		N/A	

1. If the value of HEM Oil and Grease Total is greater than 110 mg/L, then the Permittee shall analyze the sample for the HEM Oil and Grease Non-Polar constituent.

SAMPLE DATE	POINT OF COMPLIANCE	SAMPLE TYPE
12/11/02	1A	COMPOSITE

PARAMETER	ANALYSIS METHOD	REPORTED CONCENTRATION		MDL	LIMITS DAILY	LIMITS MONTHLY	COMMENTS
Arsenic (Total)	EPA 200	0.00800	mg/L	0.00100	0.2 mg/L	N/A	
Cadmium (Total)	EPA 200	ND	mg/L	0.00100	0.7 mg/L	N/A	
Chromium (Total)	EPA 200	ND	mg/L	0.00100	5.0 mg/L	N/A	
Copper (Total)	EPA 200	ND	mg/L	0.00200	3.7 mg/L	N/A	
Lead (Total)	EPA 200	ND	mg/L	0.00100	0.7 mg/L	N/A	

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Date: 1/3/03

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JAN 0 4 2002

KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pre	P2L0473-01	Water	12/11/02 12:00	12/13/02 14:00
Post	P2L0473-03	Water	12/11/02 12:00	12/13/02 14:00

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Pre (P2L0473-01) Water					Sampled: 12/11/02 Received: 12/13/02				
Benzene	**1.36**	0.500	ug/l	1	NW-G, 8021B	12/13/02	12/14/02	2120493	
Toluene	**3.48**	0.500	"	"	"	"	"	"	
Ethylbenzene	**6.93**	0.500	"	"	"	"	"	"	
Xylenes (total)	**38.9**	1.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**1750**	80.0	"	"	"	"	"	"	
Surr: 4-BFB (FID)	*103 %*	*50-150*							
Surr: 4-BFB (PID)	*111 %*	*75-120*							

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Pre (P2L0473-01) Water					Sampled: 12/11/02 Received: 12/13/02				
Diesel Range Organics	**13.6**	0.250	mg/l	1	NWTPH-Dx	12/18/02	12/19/02	2120665	A-01
Heavy Oil Range Hydrocarbons	**2.46**	0.500	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*76.9 %*	*50-150*							

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Oil and Grease Analysis per EPA Method 1664

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post (P2L0473-03) Water					Sampled: 12/11/02 Received: 12/13/02				
Oil & Grease	ND	5.00	mg/l	1	EPA 1664	12/18/02	12/19/02	2120688	

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Total Metals per EPA 200 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post (P2L0473-03) Water					Sampled: 12/11/02 Received: 12/13/02				
Arsenic	**0.00800**	0.00100	mg/l	1	EPA 200.8	12/16/02	12/17/02	2120583	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00200	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Purgeables per EPA Method 624 Modified

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post (P2L0473-03) Water					Sampled: 12/11/02 Received: 12/13/02				
Benzene	ND	2.00	ug/l	1	EPA 624	12/18/02	12/18/02	2120653	
Bromodichloromethane	ND	2.00	"	"	"	"	"	"	
Bromoform	ND	2.00	"	"	"	"	"	"	
Bromomethane	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.00	"	"	"	"	"	"	
Chlorobenzene	ND	2.00	"	"	"	"	"	"	
Chloroethane	ND	5.00	"	"	"	"	"	"	
Chloroform	ND	2.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.00	"	"	"	"	"	"	
Ethylbenzene	ND	2.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.00	"	"	"	"	"	"	
Tetrachloroethene	ND	2.00	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.00	"	"	"	"	"	"	
Vinyl chloride	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	*97.0 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*123 %*	*77.9-123*							
Surr: Dibromofluoromethane	*116 %*	*83.5-119*							
Surr: Toluene-d8	*111 %*	*84.1-116*							

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Acid and Base/Neutral Extractables per EPA Method 625

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post (P2L0473-03) Water					Sampled: 12/11/02 Received: 12/13/02				
Acenaphthene	ND	5.00	ug/l	1	EPA 625	12/16/02	12/19/02	2120548	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzidine	ND	50.0	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	5.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	5.00	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	10.0	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	5.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	10.0	"	"	"	"	"	"	
2-Chloronaphthalene	ND	5.00	"	"	"	"	"	"	
2-Chlorophenol	ND	5.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	5.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	5.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	5.00	"	"	"	"	"	"	
1,2 Diphenylhydrazine (as Azobenzene)	ND	5.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	5.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	5.00	"	"	"	"	"	"	
Diethyl phthalate	ND	5.00	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	10.0	"	"	"	"	"	"	
Dimethyl phthalate	ND	5.00	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	10.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	25.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Acid and Base/Neutral Extractables per EPA Method 625

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post (P2L0473-03) Water					Sampled: 12/11/02 Received: 12/13/02				
Hexachlorobenzene	ND	5.00	ug/l	1	EPA 625	12/16/02	12/19/02	2120548	
Hexachlorobutadiene	ND	10.0	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	10.0	"	"	"	"	"	"	
Hexachloroethane	ND	10.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	5.00	"	"	"	"	"	"	
Isophorone	ND	5.00	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Nitrobenzene	ND	5.00	"	"	"	"	"	"	
2-Nitrophenol	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	25.0	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	5.00	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	10.0	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	10.0	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Phenol	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.00	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	5.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*76.4 %*	*26-135*							
Surr: 2-Fluorophenol	*47.3 %*	*6-124*							
Surr: Nitrobenzene-d5	*87.2 %*	*23-147*							
Surr: Phenol-d6	*29.9 %*	*11-130*							
Surr: p-Terphenyl-d14	*92.7 %*	*38-149*							
Surr: 2,4,6-Tribromophenol	*93.3 %*	*19-126*							

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120493 - EPA 5030B										
Blank (2120493-BLK1)				Prepared & Analyzed: 12/13/02						
Benzene	ND	0.500	ug/l							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Gasoline Range Hydrocarbons	ND	80.0	"							
Surr: 4-BFB (FID)	*46.9*		"	*50.0*		*93.8*	*50-150*			
Surr: 4-BFB (PID)	*45.8*		"	*50.0*		*91.6*	*75-120*			
LCS (2120493-BS1)				Prepared & Analyzed: 12/13/02						
Gasoline Range Hydrocarbons	1180	80.0	ug/l	1250		94.4	70-130			
Surr: 4-BFB (FID)	*49.6*		"	*50.0*		*99.2*	*50-150*			
LCS (2120493-BS2)				Prepared & Analyzed: 12/13/02						
Benzene	16.3	0.500	ug/l	20.0		81.5	70-130			
Toluene	18.2	0.500	"	20.0		91.0	70-130			
Ethylbenzene	20.1	0.500	"	20.0		100	70-130			
Xylenes (total)	60.5	1.00	"	60.0		101	70-130			
Surr: 4-BFB (PID)	*47.4*		"	*50.0*		*94.8*	*75-120*			
Duplicate (2120493-DUP1)	**Source: P2L0452-01**			Prepared & Analyzed: 12/13/02						
Gasoline Range Hydrocarbons	39400	4000	ug/l		36400			7.92	50	
Surr: 4-BFB (FID)	*45.8*		"	*50.0*		*91.6*	*50-150*			
Duplicate (2120493-DUP2)	**Source: P2L0486-01**			Prepared: 12/13/02 Analyzed: 12/14/02						
Gasoline Range Hydrocarbons	458	80.0	ug/l		503			9.37	50	
Surr: 4-BFB (FID)	*50.1*		"	*50.0*		*100*	*50-150*			
Matrix Spike (2120493-MS1)	**Source: P2L0452-02**			Prepared & Analyzed: 12/13/02						
Benzene	2190	50.0	ug/l	2000	485	85.2	70-130			
Toluene	6940	50.0	"	2000	5030	95.5	70-130			
Ethylbenzene	3370	50.0	"	2000	1310	103	70-130			
Xylenes (total)	17300	100	"	6000	11500	96.7	70-130			
Surr: 4-BFB (PID)	*47.0*		"	*50.0*		*94.0*	*75-120*			

North Creek Analytical - Portland

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120493 - EPA 5030B										
Matrix Spike Dup (2120493-MSD1)		**Source: P2L0452-02**		Prepared: 12/13/02 Analyzed: 12/14/02						
Benzene	2160	50.0	ug/l	2000	485	83.8	70-130	1.38	15	
Toluene	6790	50.0	"	2000	5030	88.0	70-130	2.18	15	
Ethylbenzene	3290	50.0	"	2000	1310	99.0	70-130	2.40	15	
Xylenes (total)	16500	100	"	6000	11500	83.3	70-130	4.73	15	
Surr: 4-BFB (PID)	*45.4*		"	*50.0*		*90.8*	*75-120*			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120665 - EPA 3510 Fuels										
Blank (2120665-BLK1)				Prepared: 12/18/02 Analyzed: 12/19/02						
Diesel Range Organics	ND	0.250	mg/l							
Heavy Oil Range Hydrocarbons	ND	0.500	"							
Surr: 1-Chlorooctadecane	*0.0844*		"	*0.0960*		*87.9*	*50-150*			
LCS (2120665-BS1)				Prepared: 12/18/02 Analyzed: 12/19/02						
Diesel Range Organics	1.99	0.250	mg/l	2.50		79.6	50-150			
Heavy Oil Range Hydrocarbons	1.59	0.500	"	1.50		106	50-150			
Surr: 1-Chlorooctadecane	*0.0816*		"	*0.0960*		*85.0*	*50-150*			
LCS Dup (2120665-BSD1)				Prepared: 12/18/02 Analyzed: 12/19/02						
Diesel Range Organics	1.95	0.250	mg/l	2.50		78.0	50-150	2.03	50	
Heavy Oil Range Hydrocarbons	1.58	0.500	"	1.50		105	50-150	0.631	50	
Surr: 1-Chlorooctadecane	*0.0847*		"	*0.0960*		*88.2*	*50-150*			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Oil and Grease Analysis per EPA Method 1664 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120688 - EPA 1664										
Blank (2120688-BLK1)				Prepared: 12/18/02 Analyzed: 12/19/02						
Oil & Grease	ND	5.00	mg/l							
LCS (2120688-BS1)				Prepared: 12/18/02 Analyzed: 12/19/02						
Oil & Grease	74.9	5.00	mg/l	80.0		93.6	73-109			
LCS Dup (2120688-BSD1)				Prepared: 12/18/02 Analyzed: 12/19/02						
Oil & Grease	76.3	5.00	mg/l	80.0		95.4	73-109	1.85	18	

North Creek Analytical - Portland

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Total Metals per EPA 200 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120583 - EPA 200/3005										
Blank (2120583-BLK1)				Prepared: 12/16/02 Analyzed: 12/17/02						
Arsenic	ND	0.00100	mg/l							
Cadmium	ND	0.00100	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00200	"							
Lead	ND	0.00100	"							
LCS (2120583-BS1)				Prepared: 12/16/02 Analyzed: 12/17/02						
Arsenic	0.0954	0.00100	mg/l	0.100		95.4	85-115			
Cadmium	0.0953	0.00100	"	0.100		95.3	85-115			
Chromium	0.102	0.00100	"	0.100		102	85-115			
Copper	0.102	0.00200	"	0.100		102	85-115			
Lead	0.103	0.00100	"	0.100		103	85-115			
Duplicate (2120583-DUP1)		**Source: P2L0523-07**		Prepared: 12/16/02 Analyzed: 12/17/02						
Arsenic	ND	0.00100	mg/l		ND				20	
Cadmium	ND	0.00100	"		ND				20	
Chromium	0.00214	0.00100	"		0.00281			27.1	20	Q-06
Copper	ND	0.00200	"		ND			5.64	20	
Lead	ND	0.00100	"		ND			12.2	20	
Matrix Spike (2120583-MS1)		**Source: P2L0523-07**		Prepared: 12/16/02 Analyzed: 12/17/02						
Arsenic	0.106	0.00100	mg/l	0.100	ND	106	70-130			
Cadmium	0.0964	0.00100	"	0.100	ND	96.4	70-130			
Chromium	0.101	0.00100	"	0.100	0.00281	98.2	70-130			
Copper	0.112	0.00200	"	0.100	ND	110	70-130			
Lead	0.110	0.00100	"	0.100	ND	110	70-130			
Matrix Spike (2120583-MS2)		**Source: P2L0473-03**		Prepared: 12/16/02 Analyzed: 12/17/02						
Arsenic	0.109	0.00100	mg/l	0.100	0.00800	101	70-130			
Cadmium	0.0938	0.00100	"	0.100	ND	93.8	70-130			
Chromium	0.0957	0.00100	"	0.100	ND	95.7	70-130			
Copper	0.104	0.00200	"	0.100	ND	104	70-130			
Lead	0.103	0.00100	"	0.100	ND	103	70-130			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Purgeables per EPA Method 624 Modified - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120653 - EPA 5030B										
Blank (2120653-BLK1)				Prepared & Analyzed: 12/18/02						
Benzene	ND	2.00	ug/l							
Bromodichloromethane	ND	2.00	"							
Bromoform	ND	2.00	"							
Bromomethane	ND	10.0	"							
Carbon tetrachloride	ND	2.00	"							
Chlorobenzene	ND	2.00	"							
Chloroethane	ND	5.00	"							
Chloroform	ND	2.00	"							
Chloromethane	ND	5.00	"							
Dibromochloromethane	ND	2.00	"							
1,2-Dichlorobenzene	ND	2.00	"							
1,3-Dichlorobenzene	ND	2.00	"							
1,4-Dichlorobenzene	ND	2.00	"							
1,1-Dichloroethane	ND	2.00	"							
1,2-Dichloroethane	ND	2.00	"							
1,1-Dichloroethene	ND	2.00	"							
trans-1,2-Dichloroethene	ND	2.00	"							
1,2-Dichloropropane	ND	2.00	"							
cis-1,3-Dichloropropene	ND	2.00	"							
trans-1,3-Dichloropropene	ND	2.00	"							
Ethylbenzene	ND	2.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	2.00	"							
Tetrachloroethene	ND	2.00	"							
Toluene	ND	2.00	"							
1,1,1-Trichloroethane	ND	2.00	"							
1,1,2-Trichloroethane	ND	2.00	"							
Trichloroethene	ND	2.00	"							
Trichlorofluoromethane	ND	5.00	"							
Vinyl chloride	ND	2.00	"							
Surr: 4-BFB	*18.8*		"	*20.0*		*94.0*	*84.5-124*			
Surr: 1,2-DCA-d4	*23.2*		"	*20.0*		*116*	*77.9-123*			
Surr: Dibromofluoromethane	*21.9*		"	*20.0*		*110*	*83.5-119*			
Surr: Toluene-d8	*20.8*		"	*20.0*		*104*	*84.1-116*			

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907.334.9200 fax 907.334.9339

KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Purgeables per EPA Method 624 Modified - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120653 - EPA 5030B										
LCS (2120653-BS1)				Prepared & Analyzed: 12/18/02						
Benzene	21.4	2.00	ug/l	20.0		107	80-120			
Chlorobenzene	21.1	2.00	"	20.0		106	80-120			
1,1-Dichloroethene	21.8	2.00	"	20.0		109	80-120			
Toluene	20.7	2.00	"	20.0		104	80-120			
Trichloroethene	22.1	2.00	"	20.0		110	80-124			
Surr: 4-BFB	*19.6*		"	*20.0*		*98.0*	*84.5-124*			
Surr: 1,2-DCA-d4	*22.6*		"	*20.0*		*113*	*77.9-123*			
Surr: Dibromofluoromethane	*21.7*		"	*20.0*		*108*	*83.5-119*			
Surr: Toluene-d8	*21.2*		"	*20.0*		*106*	*84.1-116*			
Matrix Spike (2120653-MS1)	**Source: P2L0483-02**			Prepared & Analyzed: 12/18/02						
Benzene	65.2	2.00	ug/l	20.0	43.5	108	80-124			
Chlorobenzene	20.5	2.00	"	20.0	ND	102	72.9-134			
1,1-Dichloroethene	20.0	2.00	"	20.0	ND	100	79.3-127			
Toluene	21.4	2.00	"	20.0	ND	101	79.7-131			
Trichloroethene	20.0	2.00	"	20.0	ND	100	68.4-130			
Surr: 4-BFB	*19.7*		"	*20.0*		*98.5*	*84.5-124*			
Surr: 1,2-DCA-d4	*21.6*		"	*20.0*		*108*	*77.9-123*			
Surr: Dibromofluoromethane	*21.3*		"	*20.0*		*106*	*83.5-119*			
Surr: Toluene-d8	*20.6*		"	*20.0*		*103*	*84.1-116*			
Matrix Spike Dup (2120653-MSD1)	**Source: P2L0483-02**			Prepared & Analyzed: 12/18/02						
Benzene	63.3	2.00	ug/l	20.0	43.5	99.0	80-124	2.96	25	
Chlorobenzene	20.6	2.00	"	20.0	ND	103	72.9-134	0.487	25	
1,1-Dichloroethene	20.3	2.00	"	20.0	ND	102	79.3-127	1.49	25	
Toluene	21.7	2.00	"	20.0	ND	102	79.7-131	1.39	25	
Trichloroethene	20.1	2.00	"	20.0	ND	100	68.4-130	0.499	25	
Surr: 4-BFB	*20.2*		"	*20.0*		*101*	*84.5-124*			
Surr: 1,2-DCA-d4	*21.6*		"	*20.0*		*108*	*77.9-123*			
Surr: Dibromofluoromethane	*21.0*		"	*20.0*		*105*	*83.5-119*			
Surr: Toluene-d8	*20.4*		"	*20.0*		*102*	*84.1-116*			

North Creek Analytical - Portland

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Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120548 - EPA 3510/600 Series										
Blank (2120548-BLK1)				Prepared: 12/16/02 Analyzed: 12/20/02						
Acenaphthene	ND	5.00	ug/l							
Acenaphthylene	ND	5.00	"							
Anthracene	ND	5.00	"							
Benzidine	ND	50.0	"							
Benzo (a) anthracene	ND	5.00	"							
Benzo (a) pyrene	ND	5.00	"							
Benzo (b) fluoranthene	ND	5.00	"							
Benzo (ghi) perylene	ND	5.00	"							
Benzo (k) fluoranthene	ND	5.00	"							
4-Bromophenyl phenyl ether	ND	5.00	"							
Butyl benzyl phthalate	ND	5.00	"							
4-Chloro-3-methylphenol	ND	5.00	"							
Bis(2-chloroethoxy)methane	ND	10.0	"							
Bis(2-chloroethyl)ether	ND	5.00	"							
Bis(2-chloroisopropyl)ether	ND	10.0	"							
2-Chloronaphthalene	ND	5.00	"							
2-Chlorophenol	ND	5.00	"							
4-Chlorophenyl phenyl ether	ND	5.00	"							
Chrysene	ND	5.00	"							
Di-n-butyl phthalate	ND	5.00	"							
Di-n-octyl phthalate	ND	5.00	"							
Dibenzo (a,h) anthracene	ND	5.00	"							
1,2 Diphenylhydrazine (as Azobenzene)	ND	5.00	"							
1,2-Dichlorobenzene	ND	5.00	"							
1,3-Dichlorobenzene	ND	5.00	"							
1,4-Dichlorobenzene	ND	5.00	"							
3,3'-Dichlorobenzidine	ND	5.00	"							
2,4-Dichlorophenol	ND	5.00	"							
Diethyl phthalate	ND	5.00	"							
2,4-Dimethylphenol	ND	10.0	"							
Dimethyl phthalate	ND	5.00	"							
4,6-Dinitro-2-methylphenol	ND	10.0	"							
2,4-Dinitrophenol	ND	25.0	"							
2,4-Dinitrotoluene	ND	5.00	"							
2,6-Dinitrotoluene	ND	5.00	"							
Bis(2-ethylhexyl)phthalate	ND	10.0	"							

North Creek Analytical - Portland

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Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120548 - EPA 3510/600 Series										
Blank (2120548-BLK1)				Prepared: 12/16/02 Analyzed: 12/20/02						
Fluoranthene	ND	5.00	ug/l							
Fluorene	ND	5.00	"							
Hexachlorobenzene	ND	5.00	"							
Hexachlorobutadiene	ND	10.0	"							
Hexachlorocyclopentadiene	ND	10.0	"							
Hexachloroethane	ND	10.0	"							
Indeno (1,2,3-cd) pyrene	ND	5.00	"							
Isophorone	ND	5.00	"							
Naphthalene	ND	5.00	"							
Nitrobenzene	ND	5.00	"							
2-Nitrophenol	ND	5.00	"							
4-Nitrophenol	ND	25.0	"							
N-Nitrosodimethylamine	ND	5.00	"							
N-Nitrosodi-n-propylamine	ND	10.0	"							
N-Nitrosodiphenylamine	ND	5.00	"							
Pentachlorophenol	ND	10.0	"							
Phenanthrene	ND	5.00	"							
Phenol	ND	5.00	"							
Pyrene	ND	5.00	"							
1,2,4-Trichlorobenzene	ND	5.00	"							
2,4,6-Trichlorophenol	ND	5.00	"							
Surr: 2-Fluorobiphenyl	*36.0*		"	*75.0*		*48.0*	*26-135*			
Surr: 2-Fluorophenol	*69.5*		"	*150*		*46.3*	*6-124*			
Surr: Nitrobenzene-d5	*65.8*		"	*75.0*		*87.7*	*23-147*			
Surr: Phenol-d6	*46.4*		"	*150*		*30.9*	*11-130*			
Surr: p-Terphenyl-d14	*68.2*		"	*75.0*		*90.9*	*38-149*			
Surr: 2,4,6-Tribromophenol	*111*		"	*150*		*74.0*	*19-126*			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2120548 - EPA 3510/600 Series										
LCS (2120548-BS1)				Prepared: 12/16/02 Analyzed: 12/20/02						
Acenaphthene	55.4	5.00	ug/l	75.0		73.9	40-110			
4-Chloro-3-methylphenol	118	5.00	"	150		78.7	40-110			
2-Chlorophenol	117	5.00	"	150		78.0	40-110			
1,4-Dichlorobenzene	27.3	5.00	"	75.0		36.4	20-90			
2,4-Dinitrotoluene	65.0	5.00	"	75.0		86.7	50-110			
4-Nitrophenol	50.0	25.0	"	150		33.3	15-100			
N-Nitrosodi-n-propylamine	54.2	10.0	"	75.0		72.3	40-110			
Pentachlorophenol	124	10.0	"	150		82.7	30-120			
Phenol	53.3	5.00	"	150		35.5	15-110			
Pyrene	63.2	5.00	"	75.0		84.3	40-110			
1,2,4-Trichlorobenzene	30.5	5.00	"	75.0		40.7	25-100			
Surr: 2-Fluorobiphenyl	*46.2*		"	*75.0*		*61.6*	*26-135*			
Surr: 2-Fluorophenol	*70.9*		"	*150*		*47.3*	*6-124*			
Surr: Nitrobenzene-d5	*66.9*		"	*75.0*		*89.2*	*23-147*			
Surr: Phenol-d6	*47.9*		"	*150*		*31.9*	*11-130*			
Surr: p-Terphenyl-d14	*67.8*		"	*75.0*		*90.4*	*38-149*			
Surr: 2,4,6-Tribromophenol	*118*		"	*150*		*78.7*	*19-126*			
LCS Dup (2120548-BSD1)				Prepared: 12/16/02 Analyzed: 12/20/02						
Acenaphthene	56.8	5.00	ug/l	75.0		75.7	40-110	2.50	36	
4-Chloro-3-methylphenol	124	5.00	"	150		82.7	40-110	4.96	43	
2-Chlorophenol	122	5.00	"	150		81.3	40-110	4.18	38	
1,4-Dichlorobenzene	36.0	5.00	"	75.0		48.0	20-90	27.5	43	
2,4-Dinitrotoluene	63.1	5.00	"	75.0		84.1	50-110	2.97	31	
4-Nitrophenol	51.8	25.0	"	150		34.5	15-100	3.54	36	
N-Nitrosodi-n-propylamine	60.6	10.0	"	75.0		80.8	40-110	11.1	37	
Pentachlorophenol	128	10.0	"	150		85.3	30-120	3.17	40	
Phenol	55.4	5.00	"	150		36.9	15-110	3.86	36	
Pyrene	63.4	5.00	"	75.0		84.5	40-110	0.316	31	
1,2,4-Trichlorobenzene	40.6	5.00	"	75.0		54.1	25-100	28.4	42	
Surr: 2-Fluorobiphenyl	*47.8*		"	*75.0*		*63.7*	*26-135*			
Surr: 2-Fluorophenol	*74.8*		"	*150*		*49.9*	*6-124*			
Surr: Nitrobenzene-d5	*65.1*		"	*75.0*		*86.8*	*23-147*			
Surr: Phenol-d6	*51.6*		"	*150*		*34.4*	*11-130*			
Surr: p-Terphenyl-d14	*67.7*		"	*75.0*		*90.3*	*38-149*			
Surr: 2,4,6-Tribromophenol	*119*		"	*150*		*79.3*	*19-126*			

North Creek Analytical - Portland

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Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch 2120548 - EPA 3510/600 Series

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Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05H	**Reported:**
Tigard, OR 97223	Project Manager: Scott Miller	12/26/02 16:37

Notes and Definitions

A-01	Detected hydrocarbons appear to be due to weathered gas as well as weathered diesel.
Q-06	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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CHEVRON U.S.A., Inc. CHAIN OF CUSTODY REPORT

CHEVRON INFORMATION

Facility Number: 100-1868
Site Address: Willbridge Light Products
City, State, ZIP: Portland, OR
Service Code:
Service Order:
Cost Element: 75100100
Chevron Project Manager: Gerald O'Regan

☐ Site Assesment
☐ Remediation
☐ O & M
☐ GWM

CONSULTANT INFORMATION

Name: KHM Environmental Project# B17-05H
Address: 7150 SW Hampton ST #220
Tigard, OR 97223
Phone: 503-639-8098 Fax: 639-7619
Project Manager: Scott Miller Airbill#:
Sample Collection by: NWH

Laboratory Turnaround Time
☐ 1 Business Day
☐ 3 Business Days
☐ 5 Business Days
☐ 10 Business Days
☐ 3 Day Air Samples
(Please Select One)

☐ AK ☐ OR ☐ WA ☐ NW Series

SAMPLE INDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CON-TAINERS	TPH-HCID	TPH-Gas	BTEX Only EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS Semi Vols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved	~~TCLP~~ RCRA Metals ~~8T~~	HEM O,G (Method 1664)	Hold		EPA 624 VOCs	EPA 625 SVOCs	NCA SAMPLE NUMBER
1. Pre	12-11-02	W	4				X		X														
2. Mid	12-11-02	W	6																X				
3. Post	12-11-02	W	6														X	X			X	X	
4.																							
5.																							
6.																							
7.																							
8.																							
9.																							
10.																							

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.		(KHM)	12/13/02 @ 13:45		NCA	12/13/02 @ 13:45
2.					NCA	12/13/02 1400
3.						

Additional Comments:
2.2°

Page 1 of 1

Chev CoC, Rev. 3.3, 2/99

COP0015834

Portland Term #0608
Human Corresp.

Willbridge Mtg 1/28/03

DEQ Comment Ltr.

Risk of Seeps

- Initially agree to exclude in-water risk but then asks to quantify impacts of seeps & g.w. to river & seds → can only do in terms of risk which agreed not to do.
  - seeps may need to be addressed in RI → add seep section
  - one or two seeps at KM but one was sampled & determined to be clean
  - May need to look at DEQ level 2 screening guidance for terrestrial effects of seeps & g.w. discharges

Response to Seeps - Gen

- HC seeps will be addressed under S.C. report → will identify seeps in ~~RI~~ RI & characterize in S.C. report → will sample KM seep
- Will factor in new cut-off wall to avoid doing seep RA → if DEQ insists we can do a simple screening level RA to show it is a risk

Responses to #3, 11, etc

- Will apply risk guidance where available → already done

Response to #30, 94 etc

- Will acknowledge seep is pathway but will be eliminated by wall & does not need to be quantified

CSM

- Will acknowledge utility workers exposure to g.w. but will argue against g.w. ingestion - shouldn't be a problem

Responses to #31, 123

- O.K. → will do but exclude seep exposure ~~to~~ per above

Responses to #40

- Will look at data from wells closest to river & sample P-1 & P-2 & any other wells to determine if sig. conc. exist & if not, will say no need to sample & if so do simple modeling to est. concen. reaching river → if below AWQS. no further action → Const. RPT to be completed by 2/21/03

COP0015835

Willbridge Mtg 1/28/03

Resp #71 + #72

- Agreed

Resp. #82 + #84

- Agreed

Resp. #107

- See previous Seep comments

Resp. #126

- Agreed → will go to 1m where eco habitat is present (KHM)

Resp. #135

- Agreed – no bioaccum chems present where a problem

Next Steps → will send response ltr. on ~~[illegible]~~ our position on each comment & if she doesn't agree to any of them request mtg.

Schedule → KHM to propose schedule

Hart Crowser Budget → Extended Timeline & QA/QC issues & x-tra mtgs requiring and effort → est. e$3-5K

27" Wall – Plans completed soon + will send over when done → Hammond applies for permit yet & can't until drawings are complete

ENVIRONMENTAL MANAGEMENT, INC.

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LETTER OF TRANSMITTAL

To:	Mr. Eric De Berry	**From:**	R. Scott Miller
Company:	Industrial Source Control Division Water Pollution Control 6543 N. Burlington Avenue Portland, OR 97203-5452	**Date:**	February 10, 2003
Re:	Discharge Monitoring Report January 2003 Tosco-Chevron Remediation Site	**Project #:**	B17-05H Permit No. 500.015

Mr. De Berry,

Water samples were collected by KHM Environmental Management on January 17, 2003 (Grab and Composite). Samples were collected by discharging water from sample ports on the process piping directly into laboratory-prepared containers. The sample containers were sealed, labeled, placed in a cooler with ice, and transported to the project laboratory. The effluent samples were analyzed for HEM Oil and Grease (APHA/EPA Method), volatile organic compounds (EPA 624), and semivolatile organic compounds (EPA 625) Laboratory analysis was performed by North Creek Analytical (NCA) in Beaverton, Oregon. A copy of the laboratory analytical reports is included.

The monitoring was conducted in accordance with the industrial wastewater discharge Permit No. 500.015. The discharge monitoring report (DMR) is being submitted as the self-monitoring report and is included. All parameters monitored were within the limits listed in the facility's discharge permit.

In addition, the certification statement for the Final Compliance period is included. The applicable requirements were met on a consistent basis during the compliance monitoring period from October to December 2002.

If you have any questions regarding the enclosed DMR, please feel free to contact me at (503) 639-8098. Thank you.

R. Scott Miller
KHM Environmental Management, Inc.

cc: Martin Cramer, Philips Petroleum Company ✓

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CITY OF PORTLAND
INDUSTRIAL WASTEWATER DISCHARGE
SELF-MONITORING REPORT

INDUSTRY NAME: Tosco-Chevron Remediation Site

PERMIT NUMBER: 500.015

REPORT DUE DATE: February 15, 2003

SAMPLING PERIOD: January 2003

For Industrial Source Control Division Use Only

Date Postmarked/Received **Date Entered**

Entered By:

Comments:

SAMPLE DATE	POINT OF COMPLIANCE	SAMPLE TYPE
01/17/03	1A	GRAB

PARAMETER	ANALYSIS METHOD	REPORTED CONCENTRATION	MDL	LIMITS DAILY	LIMITS MONTHLY	COMMENTS
HEM Oil & Grease (Total) [1]	**APHA/EPA**	ND mg/L	**5.00**	**N/A**	**N/A**	
HEM Oil and Grease (Non-Polar)	**APHA/EPA**	mg/L	**5.00**	**110 mg/L**	**N/A**	Not analyzed
HEM Oil and Grease (Polar)	**APHA/EPA**	mg/L	**5.00**		**N/A**	Not analyzed
pH		6.24 SU		**5.0 - 11.5**	**N/A**	
BTEX	**EPA 624**	0.00584 mg/L (Total Xylenes)	**0.00200**	**0.75 mg/L**		

1. If the value of HEM Oil and Grease Total is greater than 110 mg/L, then the Permittee shall analyze the sample for the HEM Oil and Grease Non-Polar constituent.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: 2/6/03

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FEB 07 2003

KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05K	**Amended Report**
Tigard, OR 97223	Project Manager: Scott Miller	Issued: 02/04/03 17:16

ANALYTICAL REPORT FOR SAMPLES - Amended

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pre	P3A0543-01	Water	01/17/03 15:10	01/21/03 13:00
Mid	P3A0543-02	Water	01/17/03 15:05	01/21/03 13:00

North Creek Analytical - Portland

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Crystal Jones, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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Tigard, OR 97223	Project Manager: Scott Miller	Issued: 02/04/03 17:16

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Pre (P3A0543-01) Water					Sampled: 01/17/03 Received: 01/21/03				
Benzene	**2.32**	0.500	ug/l	1	NW-G, 8021B	01/21/03	01/21/03	3010557	
Toluene	**3.77**	0.500	"	"	"	"	"	"	
Ethylbenzene	**5.36**	0.500	"	"	"	"	"	"	
Xylenes (total)	**29.2**	1.00	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**1330**	80.0	"	"	"	"	"	"	
Surr: 4-BFB (FID)	*102 %*	*50-150*							
Surr: 4-BFB (PID)	*115 %*	*75-120*							

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Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Pre (P3A0543-01) Water					Sampled: 01/17/03 Received: 01/21/03				
Diesel Range Organics	5.57	0.250	mg/l	1	NWTPH-Dx	01/23/03	01/23/03	3010660	A-01
Heavy Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*99.7 %*	*50-150*							

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Oil and Grease Analysis per EPA Method 1664

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Mid (P3A0543-02) Water					Sampled: 01/17/03 Received: 01/21/03				
Oil & Grease	ND	5.00	mg/l	1	EPA 1664	01/22/03	01/23/03	3010636	

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Tigard, OR 97223	Project Manager: Scott Miller	

Purgeables per EPA Method 624 Modified

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Mid (P3A0543-02) Water					Sampled: 01/17/03 Received: 01/21/03				
Total Xylenes	**5.84**	2.00	ug/l	1	EPA 624	01/22/03	01/22/03	3010616	R-18
Benzene	ND	2.00	"	"	"	"	"	"	
Bromodichloromethane	ND	2.00	"	"	"	"	"	"	
Bromoform	ND	2.00	"	"	"	"	"	"	
Bromomethane	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.00	"	"	"	"	"	"	
Chlorobenzene	ND	2.00	"	"	"	"	"	"	
Chloroethane	ND	5.00	"	"	"	"	"	"	
Chloroform	ND	2.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.00	"	"	"	"	"	"	
Ethylbenzene	ND	2.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.00	"	"	"	"	"	"	
Tetrachloroethene	ND	2.00	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.00	"	"	"	"	"	"	
Vinyl chloride	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	*100 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*99.0 %*	*77.9-123*							
Surr: Dibromofluoromethane	*102 %*	*83.5-119*							
Surr: Toluene-d8	*104 %*	*84.1-116*							

North Creek Analytical - Portland

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Crystal Jones, Project Manager

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05K	**Amended Report**
Tigard, OR 97223	Project Manager: Scott Miller	Issued: 02/04/03 17:16

Acid and Base/Neutral Extractables per EPA Method 625

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Mid (P3A0543-02) Water					Sampled: 01/17/03 Received: 01/21/03				
Acenaphthene	ND	5.00	ug/l	1	EPA 625	01/24/03	01/30/03	3010721	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzidine	ND	50.0	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	5.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	5.00	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	10.0	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	5.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	10.0	"	"	"	"	"	"	
2-Chloronaphthalene	ND	5.00	"	"	"	"	"	"	
2-Chlorophenol	ND	5.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	5.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	5.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	5.00	"	"	"	"	"	"	
1,2 Diphenylhydrazine (as Azobenzene)	ND	5.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	5.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	5.00	"	"	"	"	"	"	
Diethyl phthalate	ND	5.00	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	10.0	"	"	"	"	"	"	
Dimethyl phthalate	ND	5.00	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	10.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	25.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Tigard, OR 97223	Project Manager: Scott Miller	Issued: 02/04/03 17:16

Acid and Base/Neutral Extractables per EPA Method 625

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Mid (P3A0543-02) Water					Sampled: 01/17/03	Received: 01/21/03			
Hexachlorobenzene	ND	5.00	ug/l	1	EPA 625	01/24/03	01/30/03	3010721	
Hexachlorobutadiene	ND	10.0	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	10.0	"	"	"	"	"	"	
Hexachloroethane	ND	10.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	5.00	"	"	"	"	"	"	
Isophorone	ND	5.00	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Nitrobenzene	ND	5.00	"	"	"	"	"	"	
2-Nitrophenol	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	25.0	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	5.00	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	10.0	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	10.0	"	"	"	"	"	"	
Phenanthrene	ND	5.00	"	"	"	"	"	"	
Phenol	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.00	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	5.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	*72.7 %*	*26-135*							
Surr: 2-Fluorophenol	*33.9 %*	*6-124*							
Surr: Nitrobenzene-d5	*80.3 %*	*23-147*							
Surr: Phenol-d6	*24.0 %*	*11-130*							
Surr: p-Terphenyl-d14	*85.2 %*	*38-149*							
Surr: 2,4,6-Tribromophenol	*98.0 %*	*19-126*							

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Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010557 - EPA 5030B										
Blank (3010557-BLK1)				Prepared & Analyzed: 01/21/03						
Benzene	ND	0.500	ug/l							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Gasoline Range Hydrocarbons	ND	80.0	"							
Surr: 4-BFB (FID)	*49.1*		"	*50.0*		*98.2*	*50-150*			
Surr: 4-BFB (PID)	*51.6*		"	*50.0*		*103*	*75-120*			
LCS (3010557-BS1)				Prepared & Analyzed: 01/21/03						
Gasoline Range Hydrocarbons	757	80.0	ug/l	1000		75.7	70-130			
Surr: 4-BFB (FID)	*52.7*		"	*50.0*		*105*	*50-150*			
LCS (3010557-BS2)				Prepared & Analyzed: 01/21/03						
Benzene	25.4	0.500	ug/l	20.0		127	70-130			
Toluene	24.1	0.500	"	20.0		120	70-130			
Ethylbenzene	24.4	0.500	"	20.0		122	70-130			
Xylenes (total)	70.9	1.00	"	60.0		118	70-130			
Surr: 4-BFB (PID)	*54.9*		"	*50.0*		*110*	*75-120*			
Duplicate (3010557-DUP1)	**Source: P3A0543-01**			Prepared & Analyzed: 01/21/03						
Gasoline Range Hydrocarbons	1400	80.0	ug/l		1330			5.13	50	
Surr: 4-BFB (FID)	*52.6*		"	*50.0*		*105*	*50-150*			
Matrix Spike (3010557-MS1)	**Source: P3A0558-01**			Prepared & Analyzed: 01/21/03						
Benzene	24.5	0.500	ug/l	20.0	ND	122	70-130			
Toluene	23.3	0.500	"	20.0	ND	116	70-130			
Ethylbenzene	23.3	0.500	"	20.0	ND	116	70-130			
Xylenes (total)	68.8	1.00	"	60.0	ND	115	70-130			
Surr: 4-BFB (PID)	*52.4*		"	*50.0*		*105*	*75-120*			

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Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010557 - EPA 5030B										
Matrix Spike Dup (3010557-MSD1)	**Source: P3A0558-01**			Prepared & Analyzed: 01/21/03						
Benzene	24.4	0.500	ug/l	20.0	ND	122	70-130	0.409	15	
Toluene	23.6	0.500	"	20.0	ND	118	70-130	1.28	15	
Ethylbenzene	23.3	0.500	"	20.0	ND	116	70-130	0.00	15	
Xylenes (total)	69.3	1.00	"	60.0	ND	116	70-130	0.724	15	
Surr: 4-BFB (PID)	*51.2*		"	*50.0*		*102*	*75-120*			

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KHM Environmental
7150 SW Hampton - Suite 220
Tigard, OR 97223

Project: Chevron #100-1868, Portland, OR
Project Number: B17-05K
Project Manager: Scott Miller

Amended Report
Issued: 02/04/03 17:16

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010660 - EPA 3510 Fuels										
Blank (3010660-BLK1)				Prepared & Analyzed: 01/23/03						
Diesel Range Organics	ND	0.250	mg/l							
Heavy Oil Range Hydrocarbons	ND	0.500	"							
Surr: 1-Chlorooctadecane	*0.105*		"	*0.0960*		*109*	*50-150*			
LCS (3010660-BS1)				Prepared & Analyzed: 01/23/03						
Diesel Range Organics	2.38	0.250	mg/l	2.50		95.2	50-150			
Heavy Oil Range Hydrocarbons	1.34	0.500	"	1.50		89.3	50-150			
Surr: 1-Chlorooctadecane	*0.115*		"	*0.0960*		*120*	*50-150*			
LCS Dup (3010660-BSD1)				Prepared & Analyzed: 01/23/03						
Diesel Range Organics	2.44	0.250	mg/l	2.50		97.6	50-150	2.49	50	
Heavy Oil Range Hydrocarbons	1.36	0.500	"	1.50		90.7	50-150	1.48	50	
Surr: 1-Chlorooctadecane	*0.107*		"	*0.0960*		*111*	*50-150*			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05K	**Amended Report**
Tigard, OR 97223	Project Manager: Scott Miller	Issued: 02/04/03 17:16

Oil and Grease Analysis per EPA Method 1664 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010636 - EPA 1664										
Blank (3010636-BLK1)				Prepared: 01/22/03 Analyzed: 01/23/03						
Oil & Grease	ND	5.00	mg/l							
LCS (3010636-BS1)				Prepared: 01/22/03 Analyzed: 01/23/03						
Oil & Grease	67.8	5.00	mg/l	80.0		84.8	73-109			
LCS Dup (3010636-BSD1)				Prepared: 01/22/03 Analyzed: 01/23/03						
Oil & Grease	62.1	5.00	mg/l	80.0		77.6	73-109	8.78	18	

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05K	**Amended Report**
Tigard, OR 97223	Project Manager: Scott Miller	Issued: 02/04/03 17:16

Purgeables per EPA Method 624 Modified - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010616 - EPA 5030B										
Blank (3010616-BLK1)			Prepared & Analyzed: 01/22/03							
Benzene	ND	2.00	ug/l							
Bromodichloromethane	ND	2.00	"							
Bromoform	ND	2.00	"							
Bromomethane	ND	10.0	"							
Carbon tetrachloride	ND	2.00	"							
Chlorobenzene	ND	2.00	"							
Chloroethane	ND	5.00	"							
Chloroform	ND	2.00	"							
Chloromethane	ND	5.00	"							
Dibromochloromethane	ND	2.00	"							
1,2-Dichlorobenzene	ND	2.00	"							
1,3-Dichlorobenzene	ND	2.00	"							
1,4-Dichlorobenzene	ND	2.00	"							
1,1-Dichloroethane	ND	2.00	"							
1,2-Dichloroethane	ND	2.00	"							
1,1-Dichloroethene	ND	2.00	"							
trans-1,2-Dichloroethene	ND	2.00	"							
1,2-Dichloropropane	ND	2.00	"							
cis-1,3-Dichloropropene	ND	2.00	"							
trans-1,3-Dichloropropene	ND	2.00	"							
Ethylbenzene	ND	2.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	2.00	"							
Tetrachloroethene	ND	2.00	"							
Toluene	ND	2.00	"							
1,1,1-Trichloroethane	ND	2.00	"							
1,1,2-Trichloroethane	ND	2.00	"							
Trichloroethene	ND	2.00	"							
Trichlorofluoromethane	ND	5.00	"							
Vinyl chloride	ND	2.00	"							
Surr: 4-BFB	*19.1*		"	*20.0*		*95.5*	*84.5-124*			
Surr: 1,2-DCA-d4	*18.8*		"	*20.0*		*94.0*	*77.9-123*			
Surr: Dibromofluoromethane	*20.2*		"	*20.0*		*101*	*83.5-119*			
Surr: Toluene-d8	*20.5*		"	*20.0*		*102*	*84.1-116*			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05K	**Amended Report**
Tigard, OR 97223	Project Manager: Scott Miller	Issued: 02/04/03 17:16

Purgeables per EPA Method 624 Modified - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010616 - EPA 5030B										
LCS (3010616-BS1)				Prepared & Analyzed: 01/22/03						
Benzene	22.2	2.00	ug/l	20.0		111	80-120			
Chlorobenzene	21.4	2.00	"	20.0		107	80-120			
1,1-Dichloroethene	23.5	2.00	"	20.0		118	80-120			
Toluene	22.0	2.00	"	20.0		110	80-120			
Trichloroethene	23.3	2.00	"	20.0		116	80-124			
Surr: 4-BFB	*18.9*		"	*20.0*		*94.5*	*84.5-124*			
Surr: 1,2-DCA-d4	*19.0*		"	*20.0*		*95.0*	*77.9-123*			
Surr: Dibromofluoromethane	*20.2*		"	*20.0*		*101*	*83.5-119*			
Surr: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*84.1-116*			
Matrix Spike (3010616-MS1)	**Source: P3A0543-02**			Prepared & Analyzed: 01/22/03						
Benzene	21.6	2.00	ug/l	20.0	0.740	104	80-124			
Chlorobenzene	20.1	2.00	"	20.0	ND	100	72.9-134			
1,1-Dichloroethene	20.2	2.00	"	20.0	ND	101	79.3-127			
Toluene	20.7	2.00	"	20.0	0.540	101	79.7-131			
Trichloroethene	19.5	2.00	"	20.0	ND	97.5	68.4-130			
Surr: 4-BFB	*18.5*		"	*20.0*		*92.5*	*84.5-124*			
Surr: 1,2-DCA-d4	*19.0*		"	*20.0*		*95.0*	*77.9-123*			
Surr: Dibromofluoromethane	*20.3*		"	*20.0*		*102*	*83.5-119*			
Surr: Toluene-d8	*19.9*		"	*20.0*		*99.5*	*84.1-116*			
Matrix Spike Dup (3010616-MSD1)	**Source: P3A0543-02**			Prepared & Analyzed: 01/22/03						
Benzene	21.3	2.00	ug/l	20.0	0.740	103	80-124	1.40	25	
Chlorobenzene	20.2	2.00	"	20.0	ND	101	72.9-134	0.496	25	
1,1-Dichloroethene	20.5	2.00	"	20.0	ND	102	79.3-127	1.47	25	
Toluene	21.0	2.00	"	20.0	0.540	102	79.7-131	1.44	25	
Trichloroethene	20.1	2.00	"	20.0	ND	100	68.4-130	3.03	25	
Surr: 4-BFB	*18.7*		"	*20.0*		*93.5*	*84.5-124*			
Surr: 1,2-DCA-d4	*18.9*		"	*20.0*		*94.5*	*77.9-123*			
Surr: Dibromofluoromethane	*19.8*		"	*20.0*		*99.0*	*83.5-119*			
Surr: Toluene-d8	*19.9*		"	*20.0*		*99.5*	*84.1-116*			

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KHM Environmental
7150 SW Hampton - Suite 220
Tigard, OR 97223

Project: Chevron #100-1868, Portland, OR
Project Number: B17-05K
Project Manager: Scott Miller

Amended Report
Issued: 02/04/03 17:16

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010721 - EPA 3510/600 Series										
Blank (3010721-BLK1)				Prepared: 01/24/03 Analyzed: 01/30/03						
Acenaphthene	ND	5.00	ug/l							
Acenaphthylene	ND	5.00	"							
Anthracene	ND	5.00	"							
Benzidine	ND	50.0	"							
Benzo (a) anthracene	ND	5.00	"							
Benzo (a) pyrene	ND	5.00	"							
Benzo (b) fluoranthene	ND	5.00	"							
Benzo (ghi) perylene	ND	5.00	"							
Benzo (k) fluoranthene	ND	5.00	"							
4-Bromophenyl phenyl ether	ND	5.00	"							
Butyl benzyl phthalate	ND	5.00	"							
4-Chloro-3-methylphenol	ND	5.00	"							
Bis(2-chloroethoxy)methane	ND	10.0	"							
Bis(2-chloroethyl)ether	ND	5.00	"							
Bis(2-chloroisopropyl)ether	ND	10.0	"							
2-Chloronaphthalene	ND	5.00	"							
2-Chlorophenol	ND	5.00	"							
4-Chlorophenyl phenyl ether	ND	5.00	"							
Chrysene	ND	5.00	"							
Di-n-butyl phthalate	ND	5.00	"							
Di-n-octyl phthalate	ND	5.00	"							
Dibenzo (a,h) anthracene	ND	5.00	"							
1,2 Diphenylhydrazine (as Azobenzene)	ND	5.00	"							
1,2-Dichlorobenzene	ND	5.00	"							
1,3-Dichlorobenzene	ND	5.00	"							
1,4-Dichlorobenzene	ND	5.00	"							
3,3'-Dichlorobenzidine	ND	5.00	"							
2,4-Dichlorophenol	ND	5.00	"							
Diethyl phthalate	ND	5.00	"							
2,4-Dimethylphenol	ND	10.0	"							
Dimethyl phthalate	ND	5.00	"							
4,6-Dinitro-2-methylphenol	ND	10.0	"							
2,4-Dinitrophenol	ND	25.0	"							
2,4-Dinitrotoluene	ND	5.00	"							
2,6-Dinitrotoluene	ND	5.00	"							
Bis(2-ethylhexyl)phthalate	ND	10.0	"							

North Creek Analytical - Portland

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05K	**Amended Report**
Tigard, OR 97223	Project Manager: Scott Miller	Issued: 02/04/03 17:16

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010721 - EPA 3510/600 Series										
Blank (3010721-BLK1)				Prepared: 01/24/03 Analyzed: 01/30/03						
Fluoranthene	ND	5.00	ug/l							
Fluorene	ND	5.00	"							
Hexachlorobenzene	ND	5.00	"							
Hexachlorobutadiene	ND	10.0	"							
Hexachlorocyclopentadiene	ND	10.0	"							
Hexachloroethane	ND	10.0	"							
Indeno (1,2,3-cd) pyrene	ND	5.00	"							
Isophorone	ND	5.00	"							
Naphthalene	ND	5.00	"							
Nitrobenzene	ND	5.00	"							
2-Nitrophenol	ND	5.00	"							
4-Nitrophenol	ND	25.0	"							
N-Nitrosodimethylamine	ND	5.00	"							
N-Nitrosodi-n-propylamine	ND	10.0	"							
N-Nitrosodiphenylamine	ND	5.00	"							
Pentachlorophenol	ND	10.0	"							
Phenanthrene	ND	5.00	"							
Phenol	ND	5.00	"							
Pyrene	ND	5.00	"							
1,2,4-Trichlorobenzene	ND	5.00	"							
2,4,6-Trichlorophenol	ND	5.00	"							
Surr: 2-Fluorobiphenyl	*35.7*		"	*75.0*		*47.6*	*26-135*			
Surr: 2-Fluorophenol	*70.5*		"	*150*		*47.0*	*6-124*			
Surr: Nitrobenzene-d5	*65.7*		"	*75.0*		*87.6*	*23-147*			
Surr: Phenol-d6	*48.1*		"	*150*		*32.1*	*11-130*			
Surr: p-Terphenyl-d14	*65.3*		"	*75.0*		*87.1*	*38-149*			
Surr: 2,4,6-Tribromophenol	*124*		"	*150*		*82.7*	*19-126*			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05K	**Amended Report**
Tigard, OR 97223	Project Manager: Scott Miller	Issued: 02/04/03 17:16

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3010721 - EPA 3510/600 Series										
LCS (3010721-BS1)				Prepared: 01/24/03 Analyzed: 01/30/03						
Acenaphthene	55.1	5.00	ug/l	75.0		73.5	40-110			
4-Chloro-3-methylphenol	119	5.00	"	150		79.3	40-110			
2-Chlorophenol	113	5.00	"	150		75.3	40-110			
1,4-Dichlorobenzene	44.7	5.00	"	75.0		59.6	20-90			
2,4-Dinitrotoluene	62.5	5.00	"	75.0		83.3	50-110			
4-Nitrophenol	51.1	25.0	"	150		34.1	15-100			
N-Nitrosodi-n-propylamine	60.3	10.0	"	75.0		80.4	40-110			
Pentachlorophenol	117	10.0	"	150		78.0	30-120			
Phenol	48.1	5.00	"	150		32.1	15-110			
Pyrene	58.1	5.00	"	75.0		77.5	40-110			
1,2,4-Trichlorobenzene	47.6	5.00	"	75.0		63.5	25-100			
Surr: 2-Fluorobiphenyl	*57.6*		"	*75.0*		*76.8*	*26-135*			
Surr: 2-Fluorophenol	*72.8*		"	*150*		*48.5*	*6-124*			
Surr: Nitrobenzene-d5	*69.2*		"	*75.0*		*92.3*	*23-147*			
Surr: Phenol-d6	*49.4*		"	*150*		*32.9*	*11-130*			
Surr: p-Terphenyl-d14	*66.6*		"	*75.0*		*88.8*	*38-149*			
Surr: 2,4,6-Tribromophenol	*137*		"	*150*		*91.3*	*19-126*			
LCS Dup (3010721-BSD1)				Prepared: 01/24/03 Analyzed: 01/30/03						
Acenaphthene	56.2	5.00	ug/l	75.0		74.9	40-110	1.98	36	
4-Chloro-3-methylphenol	119	5.00	"	150		79.3	40-110	0.00	43	
2-Chlorophenol	110	5.00	"	150		73.3	40-110	2.69	38	
1,4-Dichlorobenzene	48.7	5.00	"	75.0		64.9	20-90	8.57	43	
2,4-Dinitrotoluene	61.1	5.00	"	75.0		81.5	50-110	2.27	31	
4-Nitrophenol	51.4	25.0	"	150		34.3	15-100	0.585	36	
N-Nitrosodi-n-propylamine	59.5	10.0	"	75.0		79.3	40-110	1.34	37	
Pentachlorophenol	120	10.0	"	150		80.0	30-120	2.53	40	
Phenol	47.7	5.00	"	150		31.8	15-110	0.835	36	
Pyrene	59.9	5.00	"	75.0		79.9	40-110	3.05	31	
1,2,4-Trichlorobenzene	49.8	5.00	"	75.0		66.4	25-100	4.52	42	
Surr: 2-Fluorobiphenyl	*57.4*		"	*75.0*		*76.5*	*26-135*			
Surr: 2-Fluorophenol	*71.0*		"	*150*		*47.3*	*6-124*			
Surr: Nitrobenzene-d5	*69.6*		"	*75.0*		*92.8*	*23-147*			
Surr: Phenol-d6	*48.9*		"	*150*		*32.6*	*11-130*			
Surr: p-Terphenyl-d14	*67.5*		"	*75.0*		*90.0*	*38-149*			
Surr: 2,4,6-Tribromophenol	*137*		"	*150*		*91.3*	*19-126*			

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KHM Environmental	Project: Chevron #100-1868, Portland, OR	**Amended Report**
7150 SW Hampton - Suite 220	Project Number: B17-05K	Issued: 02/04/03 17:16
Tigard, OR 97223	Project Manager: Scott Miller	

Acid and Base/Neutral Extractables per EPA Method 625 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch 3010721 - EPA 3510/600 Series

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Crystal Jones, Project Manager

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Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588
Anchorage 3209 Denali Street, Anchorage, AK 99503
907.334.9200 fax 907.334.9210

KHM Environmental	Project: Chevron #100-1868, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: B17-05K	**Amended Report**
Tigard, OR 97223	Project Manager: Scott Miller	Issued: 02/04/03 17:16

Notes and Definitions

A-01	Detected hydrocarbons appear to be due to weathered gas as well as weathered diesel, and perhaps some biogenic interference as well.
R-18	Analyte not listed in this analytical method.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

nca™
North Creek Analytical, Inc.
Environmental Laboratory Network
www.ncalabs.com

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210
East 11115 Montgomery, Suite B, Spokane, WA 98206-4776 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210
20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 FAX 382-7588

CHEVRON U.S.A., Inc. CHAIN OF CUSTODY REPORT PSAD643

CHEVRON INFORMATION

Facility Number: 100 - 1868
Site Address: 5531 NW Doane Ave
City, State, ZIP: Portland OR 97210
Service Code:
Service Order:
Cost Element: 75100100
Chevron Project Manager: Gerald O'Regan

☐ Site Assesment
☑ Remediation
☑ O & M
☐ GWM

CONSULTANT INFORMATION

Name: KHM Environmental Project#: B17-05K
Address: 7180 SW Hampton St #220
Phone: 639-8098 Fax: 639-7619
Project Manager: Scott Miller Airbill#:
Sample Collection by: NWH

Laboratory Turnaround Time

☐ 1 Business Day
☐ 3 Business Days
☐ 5 Business Days
☐ 10 Business Days
☐ 3 Day Air Samples (Please Select One)

☐ AK ☐ OR ☐ WA ☐ NW Series

SAMPLE INDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CON-TAINERS	TPH-HCID	TPH-Gas	BTEX Only EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Hhlogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS SemiVols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved	~~TCLP~~ RCRA Metals (8)	EPA 624 VOC's	EPA 625 SVOC's	HEM oil & grease 1664		Please Hold	NCA SAMPLE NUMBER
1. Pre	1-17-03 13:10	W	4				X		X														
2. Mid	1-17-03 15:35	W	6															X	X	X			
3. Post	1-17-03 15:50	W	6																			X	
4.																							
5.																							
6.																							
7.																							
8.																							
9.																							
10.																							

Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.	KHM	1/21/03 @ 11:50		NCA	1/21/03 @ 11:50
2.				NCA	1/21/03 1300
3.					

Additional Comments:

0.1°C

Page 1 of 1

Chev CoC. Rev. 3.3. 2/99

COP0015857

CITY OF PORTLAND
ENVIRONMENTAL SERVICES

Water Pollution Control Laboratory
6543 N. Burlington Ave., Portland, Oregon 97203-5452
(503) 823-5600

FINAL COMPLIANCE REPORT

I certify that **Tosco Refinery / Chevron Products Co.**:

[ ] is able to demonstrate compliance with the discharge limits of Permit No. 500.015

[ ] is **NOT** able to demonstrate compliance with the discharge limits of Permit No. 500.015

If **Tosco Refinery / Chevron Products Co.** is not able to demonstrate compliance, a plan for coming into compliance must be submitted to Source Control no later than **February 15th, 2003**.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: 2/6/03

COPY

ENVIRONMENTAL MANAGEMENT, INC.

April 22, 2003
Project B17-051

Mr. Eric DeBerry
Bureau of Environmental Services – City of Portland
Water Pollution Control Laboratory
6543 North Burlington Avenue
Portland, Oregon 97203-5452

Re: Accidental Spill Prevention Plan
Groundwater Extraction and Treatment System
ConocoPhillips Willbridge Terminal
Portland, Oregon

Dear Mr. DeBerry:

KHM Environmental Management, Inc. (KHM) has prepared this Accidental Spill Prevention Plan for groundwater and separate-phase hydrocarbon (SPH) extraction and treatment system located at the ConocoPhillips Willbridge Terminal in Portland, Oregon (Figure 1). KHM has prepared this Accidental Spill Prevention Plan on behalf of ConocoPhillips Company (ConocoPhillips) and Chevron Environmental Management Company (Chevron) to satisfy the requirements of the general conditions, Item 1 of the Tosco Refining Company/Chevron Products Company Wastewater Discharge Permit (Permit Number 500.015) issued by the City of Portland Environmental Services. This plan has been prepared to meet the requirements of Section 17.34.090 of the City Code. Chevron and ConocoPhillips (formerly referred to as Tosco) share responsibility for the operation and maintenance (O&M) of this extraction and treatment system which discharges treated groundwater, under permit, to the City of Portland sanitary sewer located below NW Front Avenue.

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM DESCRIPTION

At this site, a combination of groundwater remediation measures has been implemented to achieve the goal of protecting the Willamette River from seepage of SPH and dissolved petroleum hydrocarbons from the backfill material around the City of Portland 60-inch diameter storm sewer. These measures currently consist of sheetpile cutoff wall installed intersecting the storm sewer backfill material at the outfall at the Willamette River

COP0015859

(Figure 2). This cutoff wall has a concrete collar around the storm sewer pipe outfall and uses six recovery wells with total fluids pumps to collect SPH and groundwater from behind the wall. Recovered liquids are treated with an oil/water separator, batch tank, and liquid-phase carbon absorption vessels (Figure 3). The treatment system equipment is placed on a bermed (contained) concrete slab to provide secondary containment. The treated groundwater is discharged by pumping to a sump on the ConocoPhillips terminal property, near the sanitary sewer line in Front Avenue where it is discharged to the sanitary sewer by gravity.

The groundwater extraction and treatment system is configured to minimize the potential of both accidental and illicit spills of hazardous substances that could reach the sanitary sewer. The system and associated piping are located a good distance away from the City of Portland sanitary sewer, and several design features and automated safety controls have been included in the system to lessen the likelihood of an accidental release reaching the sanitary sewer. Details on the hazardous substance handling, controlled features, and spill prevention measures are provided in the sections below.

MATERIALS AND HAZARDOUS SUBSTANCES HANDLED

The SPH recovered by the extraction wells behind the cutoff wall is generally characterized as diesel-range hydrocarbon fuel, indicating historical release(s) of diesel fuel to the subsurface. This diesel fuel SPH represents a majority of the hazardous substances handled by this treatment system that has potential, in the event of a spill, to enter the City of Portland sanitary sewer. In addition to this SPH, extracted groundwater contains dissolved diesel fuel constituents that are also treated by this system. Minor quantities of equipment lubricating oils and 'Simple Green' (brand name) cleaner are occasionally used for treatment system maintenance.

Treatment system operation generates sludge. The sludge forms in the bottom of the oil/water separator and the surface of the activated carbon in the carbon treatment units. This sludge is periodically removed from the treatment system and disposed of off-site. This sludge generally consists of precipitated iron and minerals, fine particulates recovered by the groundwater extraction system, and diesel fuel constituents.

SPILL PREVENTION AND CONTROL MEASURES

Controls and response measures used to prevent potential spills, and, in the event of spill, contain the spilled material and limit the potential for the material to reach the sanitary sewer are presented in this section.

Pumped Discharged Connection – Water that enters the treatment system batch tank is pumped through the activated carbon treatment units prior to discharge to the sanitary sewer line in NW Front Avenue (Figure 3). Plumbing from the

COP0015860

activated carbon units is connected to a subgrade drain line outside the contained equipment area. This subgrade line discharges to a pressure/vacuum break sump on the ConocoPhillips property, (Figure 2), before flowing by gravity to the City of Portland sanitary. Electrical power failure or system alarm conditions shut down this batch tank transfer pump, eliminating potential discharge to the sanitary sewer from the contained equipment slab.

Contained Equipment Slab and Batch Tank Pump Controls - The treatment equipment is located on a contained, concrete equipment slab. Liquids within the contained slab collect in a central sump that is pumped back into the treatment system for treatment prior to potential discharge to the sanitary sewer. This central collection sump pumps the liquids into the treatment system oil/water separator. Minor amounts of oil or SPH would be contained within the oil/water separator. In the unlikely event of a catastrophic spill of SPH within the containment area (i.e. failure of the SPH holing tank), it is possible that the oil/water separator would fill with SPH resulting in the discharge of SPH to the batch tank. The pumping system that pumps water from the batch tank is operated by electrical conductivity probes. Should SPH enter the batch tank, the lack of electrical conductivity of the SPH would stop operation of the pump and would contain the SPH within the batch tank.

Oil/Water Separator High Level Shut-off Switch – Should the high level sensor in the oil/water separator be activated, the groundwater extraction system and batch tank transfer pump will shut off.

Batch Tank High Level Shut off Switch - Should the high level sensor in the batch tank be activated, the groundwater extraction will shut off.

SPH Collection Tank High Level Shut off Switch- Should the high level sensor in the SPH collection tank be activated, the groundwater extraction will shut off.

Carbon Treatment Unit's High Pressure Switch - Should the carbon unit's high pressure sensor be activated by high back-pressure on the carbon units, the groundwater extraction system and batch tank transfer pump will shut off.

Treatment Slab Containment Overflow Shut off Switch - Should this switch measure high level of liquids within the containment of the treatment slab, the groundwater extraction system and batch tank transfer pump will shut off.

COP0015861

POTENTIAL POINTS OF ENTRY TO THE SANITARY SEWER

The only potential point for entry of an accidental release of SPH or untreated water from the system to the sanitary sewers is at the point of discharge to the sanitary sewer below NW Front Avenue. A pressure/vacuum break sump connection to the sanitary sewer is away from the treatment equipment and storage of materials (Figure 2), making it unlikely that an accidental release would reach the sanitary sewer.

SPILL RESPONSE MEASURES

KHM staff provides routine system O&M services on behalf of ConocoPhillips and Chevron. KHM staff providing these O&M services has been instructed in appropriate spill response measures, consisting of:

- Shut off of all extraction pumps and the batch tank transfer pump.
- If possible, visual determination of the type of fluid spilled.
- Use of absorbent booms or dry absorbent material to completely contain the spill.
- Cleanup of spill using dry absorbent. (Note: Only dry cleanup methods will be employed to cleanup spills [i.e., no use of water to wash spilled materials from pavement will be conducted]).
- Immediately following completion of spill control and containment, notification of the following personnel:
    - ConocoPhillips Terminal Compliance Manager: Bill Collins @ 503-248-1552.
    - KHM Project Manager: Kelly Kline @ 503-639-8098.
    - City of Portland Environmental Services, Water Pollution Control Laboratory: Eric DeBerry @ 503-823-5538.

DESCRIPTION OF EMPLOYEE TRAINING

KHM staff who provide routine O&M services receive the following training that assists with implementation of appropriate spill response measures. This KHM staff training consists of:

- Site-specific and equipment-specific instruction on the groundwater and SPH extraction and treatment system. Operation and testing of system controls is part of this training.

COP0015862

- ConocoPhillips facility-specific safety training.

- Hazardous materials training (OSHA 40-hour) in accordance with 40 CFR 1910.120.

ConocoPhillips staff who monitor facility operations and who could observe system problems have received the following training that would assist with appropriate response measures:

- ConocoPhillips facility-specific safety training.

- Facility Response Plan training (Facility Response Plan prepared in compliance with Section 4202 of Oil Pollution Act – 40 CFR 112.20).

- Treatment system-specific training on how to shut down the entire groundwater and SPH extraction and treatment system and notify KHM.

POSTED NOTICE

A copy of the attached sign has been posted near the system to inform employees to contact the Bureau of Environmental Services in case of spills or uncontrolled discharges.

KHM appreciates the opportunity to work with you on this project. If you need further information or have any questions, please call (503) 639-8098.

Sincerely,
KHM Environmental Management, Inc.

Kelly A. Kline, R.G.
Senior Geologist

R. Scott Miller, P.E.
Principal Engineer

COP0015863

Attachments: Figure 1 – Site Location Map
Figure 2 – System Layout
Figure 3 – Process and Flow Diagram
Notice Posted at Treatment System

cc: Mr. Martin Cramer, ConocoPhillips Company, Portland, Oregon ✓
Mr. Gerry Koschal, PNG Environmental, Inc., Tigard, Oregon
Mr. Gerald O'Regan, Chevron Environmental Management Company, San Ramon, California

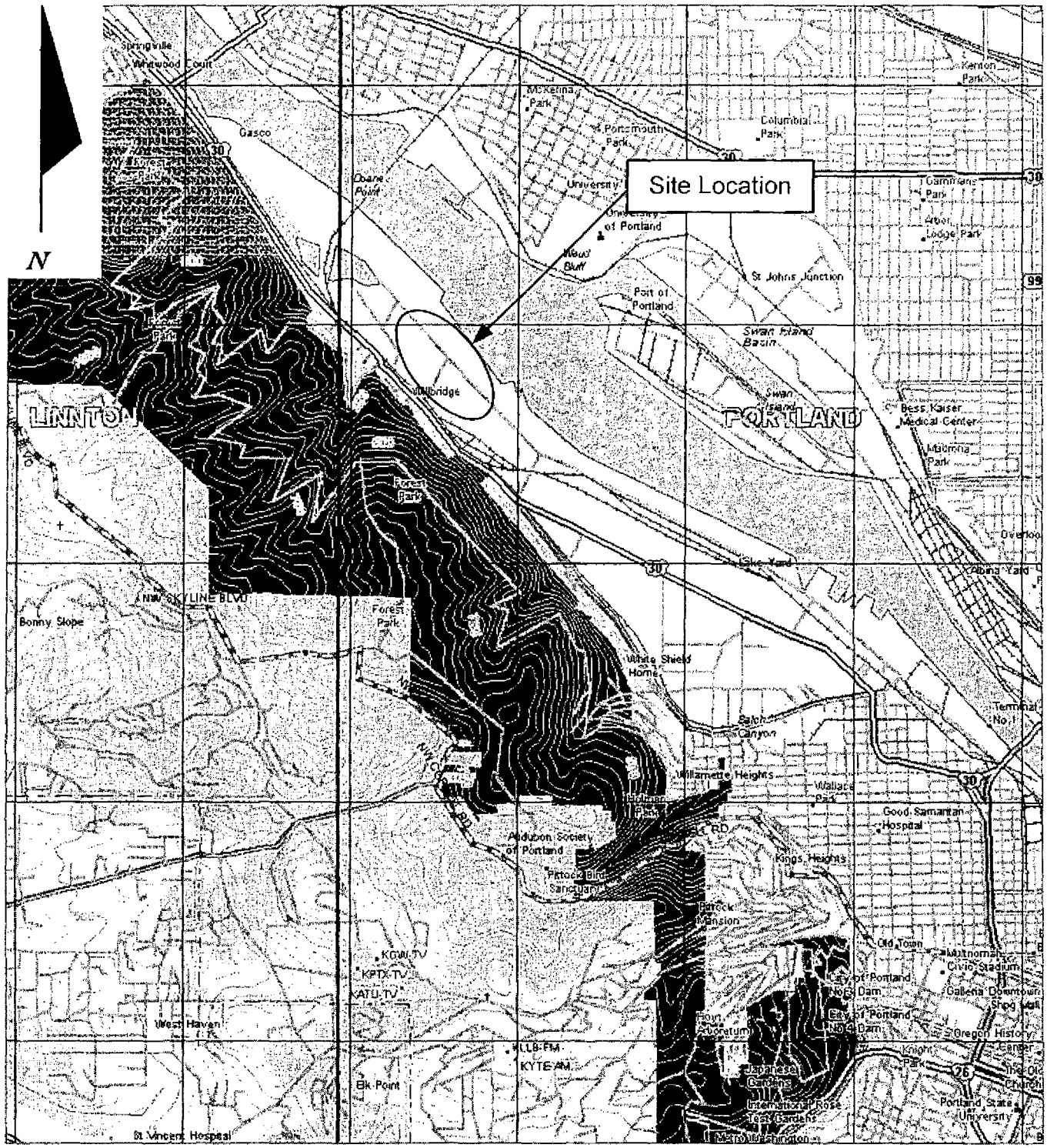
COP0015864

NOTICE

IN THE EVENT OF A SPILL OR UNCONTROLLED DISHARGE

- Shut off all extraction pumps and the batch tank transfer pump.
- Determine visually the type of fluid spilled.
- Use absorbent booms or dry absorbent material to completely contain the spill.
- Clean up spill using dry absorbent. (Note: Only dry clean-up methods will be employed to clean up spills [i.e., no use of water to wash spilled materials from pavement will be conducted]).
- Immediately following completing spill control and containment, notify the following personnel:
    - ConocoPhillips Terminal Compliance Manager: Bill Collins @ 503-248-1552.
    - KHM Project Manager: Kelly Kline @ 503-639-8098.
    - City of Portland Environmental Services, Water Pollution Control Laboratory: Eric DeBerry @ 503-823-5538.

COP0015865



REFERENCES

USGS 7.5 Minute Topographic Maps
Portland, Oregon-Washington
Linnton, Oregon
DeLorme TopoQuads, 1999
SCALE: 1 inch = 3750 feet

KHM
ENVIRONMENTAL MANAGEMENT INC.

SITE LOCATION MAP

Willbridge Petroleum Terminals

Portland, Oregon

DATE	PROJECT	FIGURE
4/17/03	B17-05H	1

COP0015866

N

Willamette River
Flow Direction

DOCK

Willamette River

Approximate Ordinary
High Water Line

Sheet-Pile Cut-off Wall

Recovery Wells

RW-5 RW-6

SAND

RW-1

RW-2

GRAVEL

Chevron Property

PIPING

Elevated Black Oil Line

Treatment System
Enclosure

RW-4

RW-3

Great Western Chemical/
McCall Oil Property

Discharge
Conveyance Line to
Sanitary Sewer

Underground conveyance
piping

ASPHALT SHED

60" Storm Sewer

SAND

MH-8A

Pressure/Vacuum
Break Manhole

60" Sanitary Sewer

48" Storm Sewer

30" Storm Sewer

NW FRONT AVENUE

NW DOANE AVENUE

LEGEND

RW-1 6" Extraction Well

Chain-Link Fence

Property Boundary

0 ft. 36 ft. 60 ft. 120 ft.

APPROXIMATE SCALE

KHM
ENVIRONMENTAL
MANAGEMENT
INC.

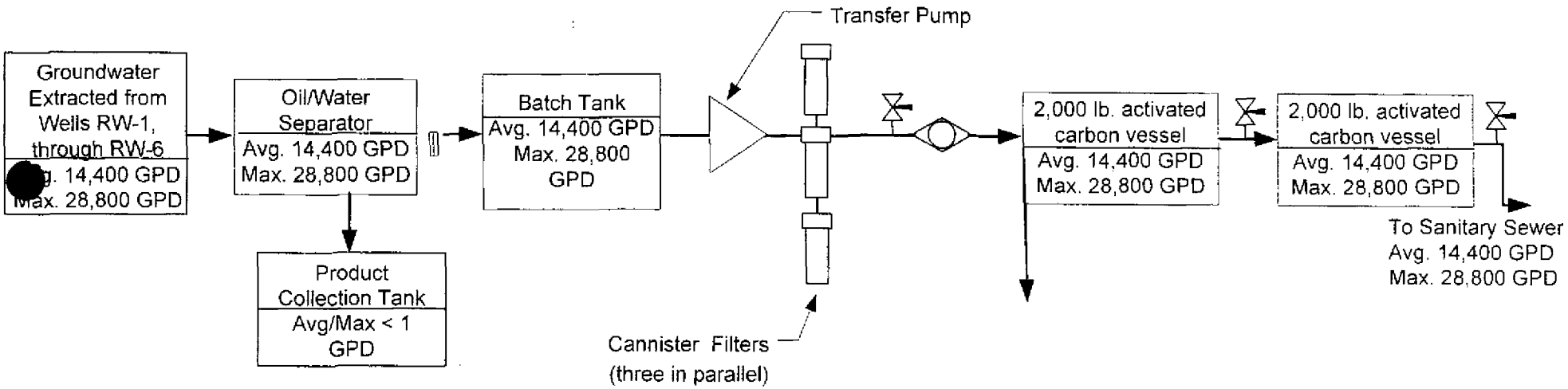
System Layout

Riverfront Area of Tosco Willbridge Facility
5528 NW Doane Avenue
Portland, Oregon

DATE	PROJECT	FIGIRE
04/17/03	B17-05H	2

COP0015867

Process and Flow Diagram



LEGEND

Monitoring port

Flowmeter/totalizer

Bag filter or Cartridge filter

KHM ENVIRONMENTAL MANAGEMENT, INC.

TITLE: Process and Flow Diagram

Tosco Willbridge Terminal
5528 NW Doane Avenue
Portland, Oregon

DATE 4/17/03 | PROJECT B17-05H | FIGURE 3

COP0015868

Portland Term 0608
Gen. Corresp.

ConocoPhillips

Derrick Vallance
Counsel
Legal Environmental

McLean 1110
600 North Dairy Ashford
Houston, TX 77079-1175
Phone 281 293-2247
Fax 281 293-1987

VIA: FACSIMILE AND OVERNIGHT DELIVERY

October 3, 2003

Jill Tracy, Esq.
Law Department
Union Oil Company of California
376 S. Valencia Avenue
Brea, California 92822

Re: Acceptance of Indemnity Tender With Reservation of Rights
Portland, Oregon – Portland Unocal 76 Terminal

Dear Jill:

ConocoPhillips Company, merger successor of Tosco Corporation, ("COP") has received Unocal's September 17, 2003 Notice and Indemnity Claim in connection with the above referenced matter together with a copy of Mr. David Blount's, counsel to the Port of Oregon (the "Port'), Notice Letter dated August 12, 2003.

COP accepts Unocal's tender for defense and indemnification with reservation of rights as set forth herein. As you may know, Unocal is responsible for Baseline Corrective Action Costs under the terms of Section 4(a) of that certain April 1997 "Environmental Agreement" between Unocal and Tosco subject to an annual $7 million dollar deductible paid by COP; and a 40% cost allocation to COP and a 60% cost allocation to Unocal for amounts above the annual deductible.

It is my understanding that the Port seeks Unocal's participation for alleged historic off-site disposal activities associated with the Portland Terminal. COP believes that to the extent such off-site disposal activities have resulted in contamination which now require corrective action, such contamination is associated with pre-Unocal 76/Tosco Closing release(s) and not as a result of COP's ownership/operation. Accordingly, it is COP's position that any costs arising hereunder are subject to the Baseline Corrective Action Cost allocation provided for under the terms of the Environmental Agreement and COP hereby reserves its right to seek indemnity for Unocal's share of Baseline Corrective Action Costs as provided by the Environmental Agreement.

Subject to the foregoing reservation of rights, COP accepts Unocal's tender and will undertake the activities as set forth in Section 5(a) of the Environmental Agreement and will allocate costs arising therefrom in accordance with Sections 4(a), 8(a) and 8(b) of the Environmental Agreement.

Should you have any questions, or wish to discuss this matter further, please feel free to contact me at anytime at 281-293-2247.

Best Regards,

Derrick Vallance

cc: Marty Cramer – ConocoPhillips
Max Boone - ConocoPhillips

COP0015870

Portland Term 0605
Seine

GeoEngineers	FIELD REPORT		File Number: 4823-520-03
15055 SW Sequoia Parkway, Suite 140, Portland, OR 97224 (503) 624-9274	Project: Kerosene Spill		Date: 1/26/04
	Owner: Conoco Phillips	Time of Arrival: 0830	Report Number:
Prepared by: Marjan Rotting	Location: Main Portland Terminal	Time of Departure: 1500	Page: 1 of 3
Purpose of visit: Delineate spill w/samples	Weather: Sprinkles, ~45°	Travel Time: ½ hr each way	Permit Number:

Upon arrival to the site I assessed personal safety hazards: ☒ Yes and ☒ Referred to Site Safety Plan and Safety Tailgate if applicable

Safety Hazards Were Addressed by : ☒ Staying Alert to Construction and Equipment Hazards ☐ Other (describe)

0830 Arrived on-site to obtain work permit and visitors pass.

Met with Bill Collins of Conoco Phillips to view kerosene spill site. The site is located on the northeast side of Front Avenue and the north side of the dock. The field map, attached, is drawn relative to the asphalt shack, parking lot and the gate that secures the entrance to the dock. The actual job is located within the secured gate, west of the dock under the pipeline. Photographs are present on page 3.

Today I will field screen to delineate the lateral extent of the area of surface contamination and take 4 soil samples. Of these, I will submit the 3 of the samples to North Creek Analytical laboratories. I will then hand auger near the center of the area, to 12 feet bgs taking samples at approximate 3 foot intervals. Samples will be field screened for headspace vapors using the MiniRAE 2000 (calibrated 1/26/04) and sheen tested.

Sample ID	Sheen	PID in ppm	Soil description	Notes	Time
SS-1-1	VSS, blocky	0.0	Gray gravels with silt		1045
SS-2-1	VSS, blocky	0.0	Brown/gray coarse to fine sand		1100
SS-3-1	VSS, blocky	0.0	Brown/gray gravel with silt		1115
SS-4-1	VSS, blocky	0.0	Brown/gray gravel with silt		1125
HA-1-1	MS	4.9	Gray fine to coarse gravel with silt (moist)		1140
HA-1-4	MS	249	Brown/gray fine sand (moist)		1230
HA-1-7.5	MS	523	Brown/gray fine sand, coarse gravel at 7.5 feet	refusal	1253
HA-2-10	HS	873	Brown/gray fine sand (moist)		1400
HA-2-12.5	MS	557	Gray silt layer (moist)		1415

VSS = very slight sheen, MS = moderate sheen, HS = heavy sheen

During hand auger HA-1, refusal was encountered at 7.5 feet bgs due to coarse gravel. A second hand auger boring (HA-2) was completed approximately 1 foot northwest of HA-1.

Both hand auger borings were backfilled with bentonite chips and topped with clean surrounding soils.

☐ **THIS FIELD REPORT IS PRELIMINARY**
A preliminary report is provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

FIELD REPRESENTATIVE Marjan A. Rotting **DATE** 1/26/04

☐ **THIS FIELD REPORT IS FINAL**
A final report is an instrument of professional service. Any conclusions drawn from this report should be discussed with and evaluated by the professional involved.

REVIEWED BY Mark Beeson **DATE** 2/13/04

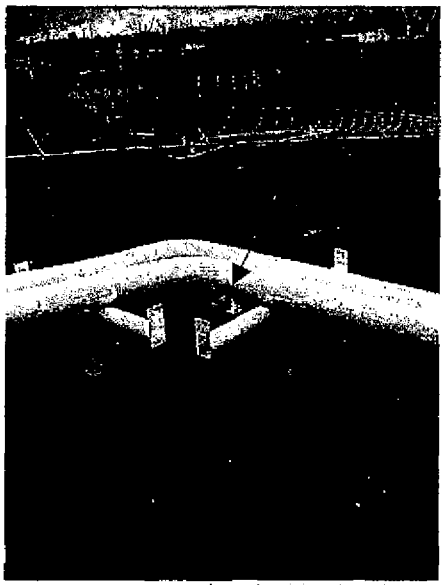
This report presents opinions formed as a result of our observation of activities relating to our services only. We rely on the contractor to comply with the plans and specification throughout the duration of the project irrespective of the presence of our representative. Our work does not include supervision or direction of the work of others. Our firm will not be responsible for job or site safety of others on this project. DISCLAIMER: Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Attachments: Site Plan, Boring logs, Geotechnical hole reports

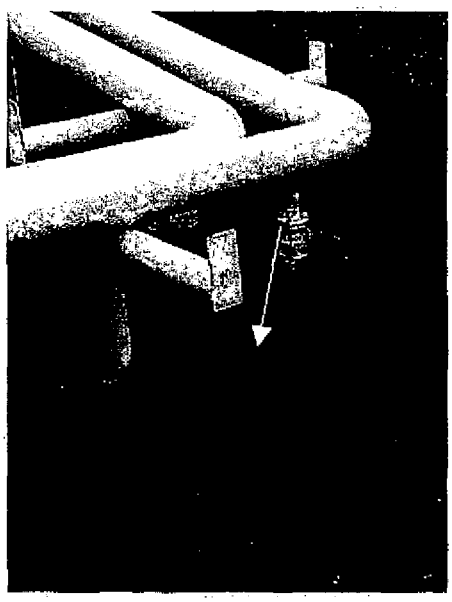
Distribution: Bill Collins, ConocoPhillips Company

COP0015871

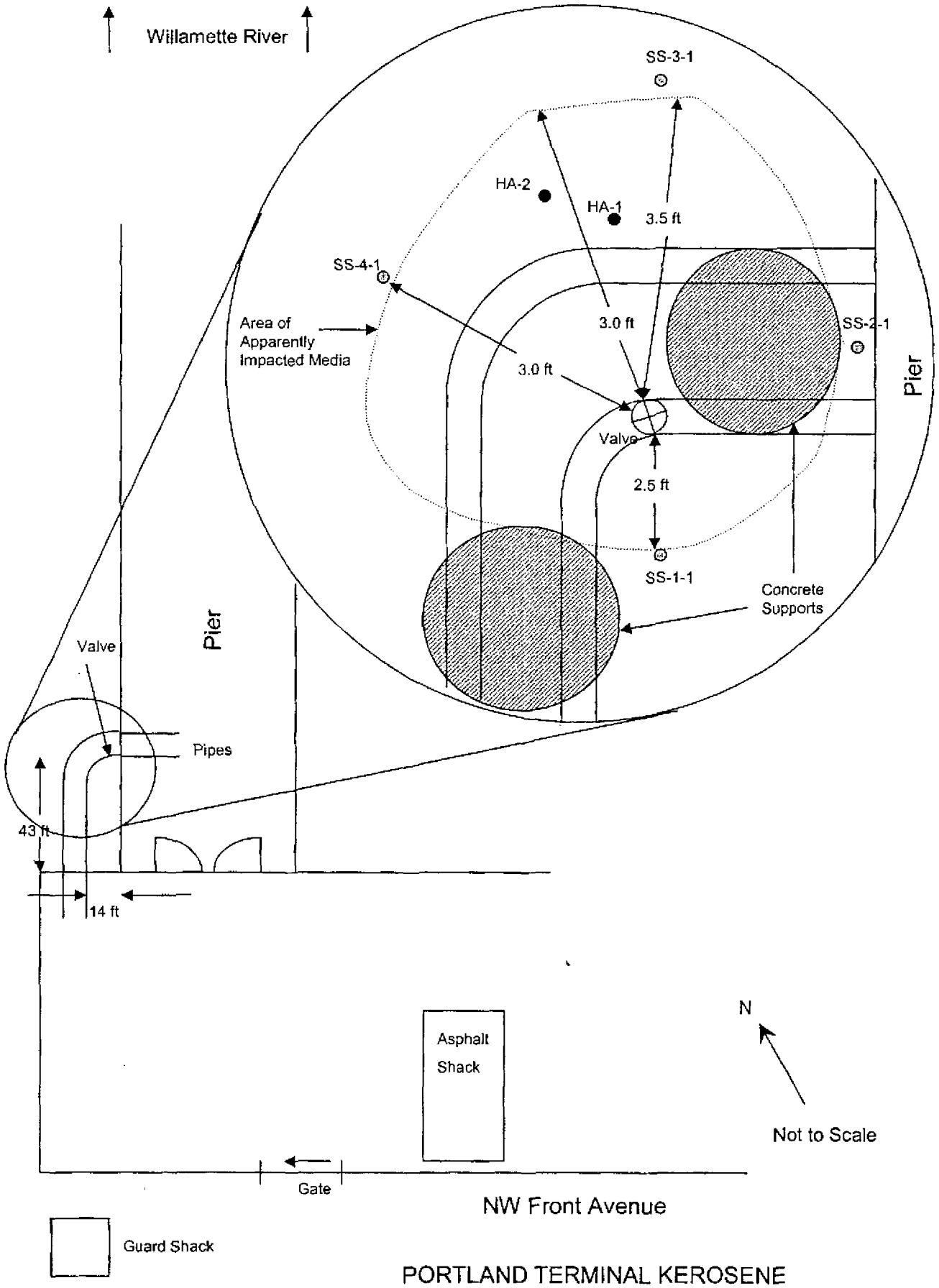
Bill Collins requested that GeoEngineers transport a kerosene product sample to the laboratory for comparison with the soil sample results. The kerosene product sample, collected by Mr. Collins, was placed directly into an iced cooler. Bill Collins requested the analytical suite for all samples to be for gasoline, diesel and BETX. He also wanted to perform some type of fingerprinting on the samples to see if we can verify whether the spill is all kerosene or perhaps includes product from a previous spill.



This picture shows the pipeline with the damaged valve that leaked kerosene during a product transfer. The picture was taken from the pier looking north. The valve that leaked is located at the 90 degree angle of the lines on the line closest to the photographer.



This picture shows the general area impacted by the release, which is under black plastic sheeting.



PORTLAND TERMINAL KEROSENE
RELEASE ASSESSMENT

COP0015874

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS (MORE THAN 50% RETAINED ON NO 200 SIEVE)	GRAVEL AND GRAVELLY SOILS (MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE)	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS (MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE)	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN 50% PASSING NO. 200 SIEVE)	SILTS AND CLAYS (LIQUID LIMIT LESS THAN 50)			ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50)			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	CC	Cement Concrete
	AC	Asphalt
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

- Measured groundwater level
- Groundwater observed at time of exploration
- Perched water observed at time of exploration
- Measured free product in well or piezometer

Stratigraphic Contact

- Distict contact between soil strata or geologic units
- Gradual change between soil strata or geologic units
- Approximate location of soil strata change within a geologic soil unit

Sampler Symbol Descriptions

- 2.4-Inch I.D. split barrel
- Standard Penetration Test (SPT)
- Shelby tube
- Piston
- Direct Push
- Bulk or grab

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

Laboratory / Field Tests

%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO EXPLORATION LOGS

GeoEngineers

Figure A-1

COP0015875

Date(s) Drilled	01/26/03	Logged By	MR2	Checked By	MB2
Drilling Contractor	Not Applicable	Drilling Method	Hand Auger	Sampling Methods	Grab
Auger Data		Hammer Data		Drilling Equipment	
Total Depth (ft)	7.5	Surface Elevation (ft)		Ground Water Level (ft. bgs)	None Encountered
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor PID(ppm)	NOTES
0	CA						GM	Gray fine to coarse gravel with silt and sand (moist)	NS	4.9	
							SP	Brown fine sand (moist)			
5	CA								NS	249	
	CA						GW-GM	Gray fine to coarse gravel with silt (moist)	NS	523	
								Boring encountered refusal at 7.5 feet bgs Backfilled with bentonite chips			
10											
15											
20											
25											

Note: See Figure A-1 for explanation of symbols

4823-520-03 GEI ENVBORING 2.1.0 P:\4\4823520\03\FINALS\4823520B.GPJ GEIV2_1.GDT 2/12/04

LOG OF HAND AUGER HA-1

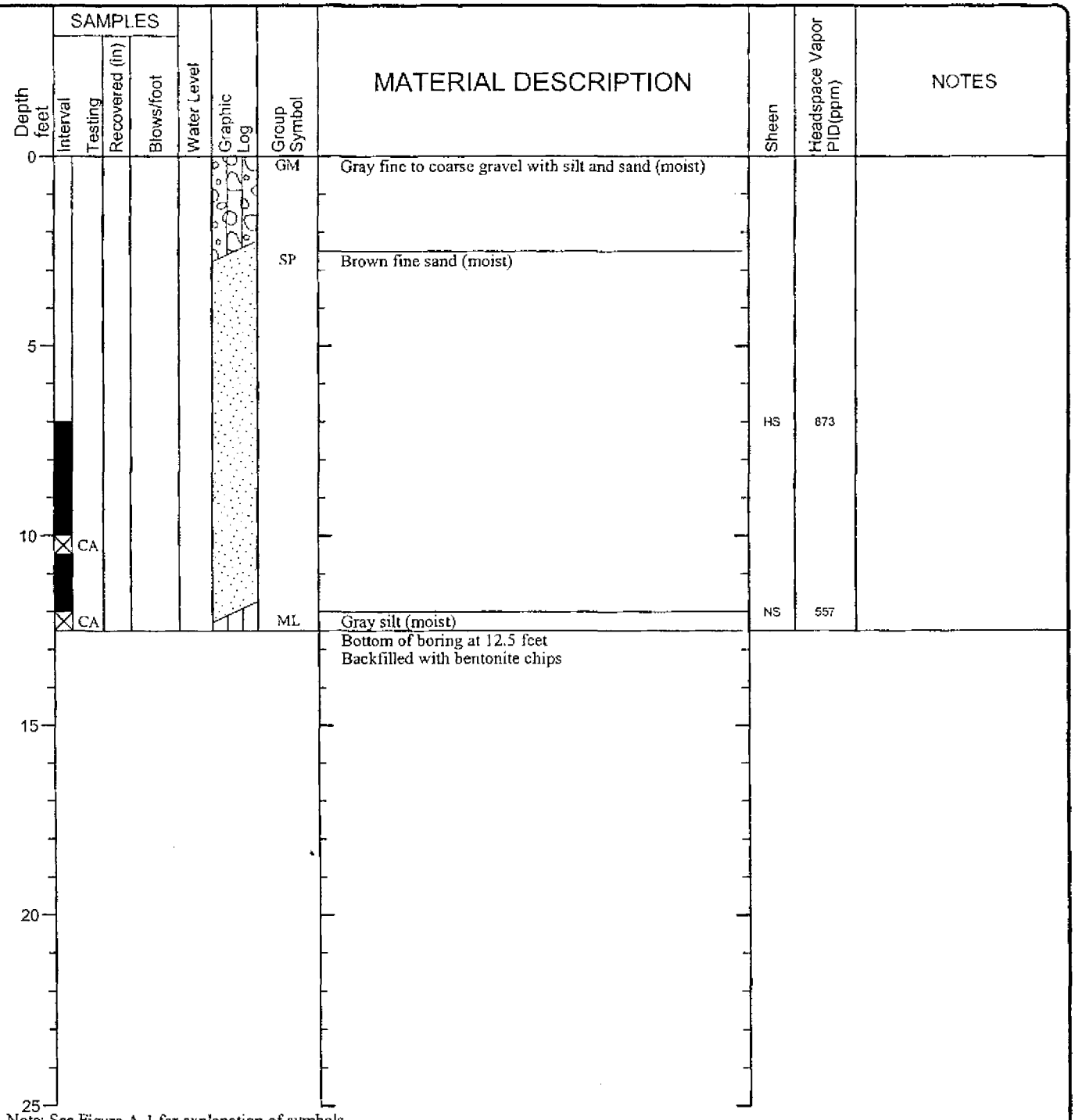
GeoEngineers

Project: ConocoPhillips
Project Location: Portland, Oregon
Project Number: 4823-520-03

Figure: A-2
Sheet 1 of 1

COP0015876

Date(s) Drilled	01/26/03	Logged By	MR2	Checked By	MB2
Drilling Contractor	Not Applicable	Drilling Method	Hand Auger	Sampling Methods	Grab
Auger Data		Hammer Data		Drilling Equipment	
Total Depth (ft)	12.5	Surface Elevation (ft)		Ground Water Level (ft. bgs)	None Encountered
Datum/ System					



Note: See Figure A-1 for explanation of symbols

4823-520-03 GEI ENVBORING 2.1.0 P:\4\4823520\03\FINALS\4823520B.GPJ GEIV2_1.GDT 2/12/04

LOG OF HAND AUGER HA-2

GeoEngineers

Project: ConocoPhillips
Project Location: Portland, Oregon
Project Number: 4823-520-03

Figure: A-3
Sheet 1 of 1

COP0015877

STATE OF OREGON

GEOTECHNICAL HOLE REPORT

(as required by OAR 690-240-035)

(1) OWNER/PROJECT: Hole Number HA-2

Name ConocoPhillips Company

Address 5528 NW Doane Avenue

City Portland State OR Zip 97210

(2) TYPE OF WORK

☑ New ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) CONSTRUCTION:

☐ Rotary Air ☑ Hand Auger ☐ Hollow Stem Auger

☐ Rotary Mud ☐ Cable Tool ☐ Push Probe ☐ Other

(4) TYPE OF HOLE:

☑ Uncased Temporary ☐ Cased Permanent

☐ Uncased Permanent ☐ Slope Stability ☐ Other

(5) USE OF HOLE: Collect soil samples

(6) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☑ No Depth of Completed Hole 12.5 ft.

HOLE			SEAL			
Diameter	From	To	Material	From	To	Sacks or pounds
2"	0	12.5'				

Backfill placed from 0.5 ft. to 12.5 ft. Material bentonite chips

Filter Pack placed from ____ ft. to ____ ft. Size of pack ____

(7) CASING/SCREEN:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Screen:					☐	☐	☐	☐
					☐	☐	☐	☐

Slot size ____

(8) WELL TEST:

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Permeability ____ Yield ____ GPM ____

Conductivity ____ PH ____

Temperature of water ____ °F Depth artesian flow found ____ ft.

Was water analysis done? ☐ Yes ☐ No

By whom? ____

Depth of strata analyzed. From ____ ft. to ____ ft.

Remarks: ____

(9) LOCATION OF HOLE by legal description:

County Multnomah Latitude ____ Longitude ____

Township 1N Range 1E WM.

Section 18 C ____ 1/4 ____ 1/4

Tax Lot 900 Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) 5528 NW Doane Avenue

Map with location indentified must be attached

(10) STATIC WATER LEVEL:

____ ft. below land surface. Date ____

Artesian pressure ____ lb. per square inch. Date ____

(11) SUBSURFACE LOG:

Ground Elevation ____

Material Description	From	To	SWL
Gray gravel with silt	0	2	
Brown coarse to fine sand w/gravel	2	12	
Gray silt	12	12.5	

Date Started 1/26/04 Date Completed 1/26/04

(12) ABANDONMENT LOG:

Material Description	From	To	Sacks or Pounds
Bentonite chips	1	12.5	45 pounds

Date started 1/26/04 Date Completed 1/26/04

Professional Certification

(to be signed by a licensed water supply or monitoring well constructor, or registered geologist or civil engineer).

I accept responsibility for the construction, alteration, or abandonment work performed on during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

OREGON License or Registration Number 61791

Signed ____ Date 2/9/04

JOHN P. FOXWELL No. G1791

Affiliation Geo Engineers

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

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STATE OF OREGON

GEOTECHNICAL HOLE REPORT

(as required by OAR 690-240-035)

(1) OWNER/PROJECT: Hole Number HA-1

Name ConocoPhillips Company

Address 5528 NW Doane Avenue

City Portland State OR Zip 97210

(2) TYPE OF WORK

☑ New ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) CONSTRUCTION:

☐ Rotary Air ☑ Hand Auger ☐ Hollow Stem Auger

☐ Rotary Mud ☐ Cable Tool ☐ Push Probe ☐ Other

(4) TYPE OF HOLE:

☑ Uncased Temporary ☐ Cased Permanent

☐ Uncased Permanent ☐ Slope Stability ☐ Other

(5) USE OF HOLE: Collect soil samples

(6) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☑ No Depth of Completed Hole 7.5 ft.

HOLE			SEAL			
Diameter	From	To	Material	From	To	Sacks or pounds
2"	0	7.5'				

Backfill placed from 0.5 ft. to 7.5 ft. Material bentonite chips

Filter Pack placed from ____ ft. to ____ ft. Size of pack ____

(7) CASING/SCREEN:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Screen:					☐	☐	☐	☐
					☐	☐	☐	☐

Slot size ____

(8) WELL TEST:

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Permeability ____ Yield ____ GPM ____

Conductivity ____ PH ____

Temperature of water ____ °F Depth artesian flow found ____ ft.

Was water analysis done? ☐ Yes ☐ No

By whom? ____

Depth of strata analyzed. From ____ ft. to ____ ft.

Remarks: ____

(9) LOCATION OF HOLE by legal description:

County Multnomah Latitude ____ Longitude ____

Township 1N Range 1E WM.

Section 18 C ____ 1/4 ____ 1/4

Tax Lot 900 Lot ____ Block ____ Subdivision ____

Street Address of Well (or nearest address) 5528 NW Doane Avenue

Map with location indentified must be attached

(10) STATIC WATER LEVEL:

____ ft. below land surface. Date ____

Artesian pressure ____ lb. per square inch. Date ____

(11) SUBSURFACE LOG:

Ground Elevation ____

Material Description	From	To	SWL
Gray gravel with silt	0	2	
Brown coarse to fine sand w/gravel	2	7.5	

Date Started 1/26/04 Date Completed 1/26/04

(12) ABANDONMENT LOG:

Material Description	From	To	Sacks or Pounds
Bentonite chips	0.5	7.5	45 pounds

Date started 1/26/04 Date Completed 1/26/04

Professional Certification

(to be signed by a licensed water supply or monitoring well constructor, or registered geologist or civil engineer).

I accept responsibility for the construction, alteration, or abandonment work performed on during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License or Registration Number G1791

Signed ____ Date 2/9/04

Affiliation Geoengineers

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

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GeoEngineers, Inc.	Project: Tosco	
15055 SW Sequoia Parkway, Suite 140	Project Number: 4823-528-00	**Reported:**
Portland, OR 97224	Project Manager: Marsi Beeson	02/12/04 15:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-1-1	P4A0608-01	Soil	01/26/04 10:45	01/27/04 10:00
SS-3-1	P4A0608-02	Soil	01/26/04 11:15	01/27/04 10:00
SS-4-1	P4A0608-03	Soil	01/26/04 11:25	01/27/04 10:00
HA-1-1	P4A0608-04	Soil	01/26/04 11:40	01/27/04 10:00
HA-1-4	P4A0608-05	Soil	01/26/04 12:30	01/27/04 10:00
HA-1-7.5	P4A0608-06	Soil	01/26/04 12:53	01/27/04 10:00
HA-2-10	P4A0608-07	Soil	01/26/04 14:00	01/27/04 10:00
HA-2-12.5	P4A0608-08	Soil	01/26/04 14:15	01/27/04 10:00
K Sample	P4A0608-09	Other wet	01/26/04 15:00	01/27/04 10:00

North Creek Analytical - Portland

Crystal Jones, Project Manager

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GeoEngineers, Inc.	Project: Tosco	
15055 SW Sequoia Parkway, Suite 140	Project Number: 4823-528-00	**Reported:**
Portland, OR 97224	Project Manager: Marsi Beeson	02/12/04 15:21

Gasoline Hydrocarbons per NW TPH-Gx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-2-12.5 (P4A0608-08) Soil					Sampled: 01/26/04 Received: 01/27/04				
Gasoline Range Hydrocarbons	**120**	20.0	mg/kg dry	10	NW TPH-Gx	01/28/04	01/30/04	4010865	
Surr: a,a,a-TFT	*74.6 %*	*50-150*							
K Sample (P4A0608-09) Other wet					Sampled: 01/26/04 Received: 01/27/04				
Gasoline Range Hydrocarbons	**4310**	200	mg/kg wet	100	NW TPH-Gx	01/28/04	01/29/04	4010865	
Surr: a,a,a-TFT	*NR*	*50-150*							*S-11*

North Creek Analytical - Portland

Crystal Jones, Project Manager

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GeoEngineers, Inc.	Project: Tosco	
15055 SW Sequoia Parkway, Suite 140	Project Number: 4823-528-00	**Reported:**
Portland, OR 97224	Project Manager: Marsi Beeson	02/12/04 15:21

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-2-10 (P4A0608-07) Soil					Sampled: 01/26/04 Received: 01/27/04				
Diesel Range Organics	**6290**	500	mg/kg dry	20	NWTPH-Dx	01/29/04	01/30/04	4010867	
Heavy Oil Range Hydrocarbons	ND	1000	"	"	"	"	"	"	R-05
Surr: 1-Chlorooctadecane	*146 %*	*50-150*							
HA-2-12.5 (P4A0608-08) Soil					Sampled: 01/26/04 Received: 01/27/04				
Diesel Range Organics	**63.9**	25.0	mg/kg dry	1	NWTPH-Dx	01/29/04	01/29/04	4010867	
Heavy Oil Range Hydrocarbons	**70.5**	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*101 %*	*50-150*							
K Sample (P4A0608-09) Other wet					Sampled: 01/26/04 Received: 01/27/04				
Diesel Range Organics	**680000**	24800	mg/kg wet	50	NWTPH-Dx	01/29/04	02/02/04	4010867	
Heavy Oil Range Hydrocarbons	ND	49500	"	"	"	"	"	"	R-05
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

North Creek Analytical - Portland

Crystal Jones, Project Manager

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GeoEngineers, Inc.	Project: Tosco	
15055 SW Sequoia Parkway, Suite 140	Project Number: 4823-528-00	**Reported:**
Portland, OR 97224	Project Manager: Marsi Beeson	02/12/04 15:21

Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SS-1-1 (P4A0608-01) Soil					Sampled: 01/26/04 Received: 01/27/04				
Benzene	ND	100	ug/kg dry	1	EPA 8260B	01/29/04	01/30/04	4010917	
Ethylbenzene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
o-Xylene	ND	100	"	"	"	"	"	"	
m,p-Xylene	ND	200	"	"	"	"	"	"	
Surr: 4-BFB	*99.1 %*	*42.6-130*							
Surr: 1,2-DCA-d4	*120 %*	*57.3-144*							
Surr: Dibromofluoromethane	*111 %*	*45.5-130*							
Surr: Toluene-d8	*120 %*	*42.1-144*							
SS-3-1 (P4A0608-02) Soil					Sampled: 01/26/04 Received: 01/27/04				
Benzene	ND	100	ug/kg dry	1	EPA 8260B	01/29/04	01/30/04	4010917	
Ethylbenzene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
o-Xylene	ND	100	"	"	"	"	"	"	
m,p-Xylene	ND	200	"	"	"	"	"	"	
Surr: 4-BFB	*102 %*	*42.6-130*							
Surr: 1,2-DCA-d4	*122 %*	*57.3-144*							
Surr: Dibromofluoromethane	*110 %*	*45.5-130*							
Surr: Toluene-d8	*121 %*	*42.1-144*							
SS-4-1 (P4A0608-03) Soil					Sampled: 01/26/04 Received: 01/27/04				
Benzene	ND	100	ug/kg dry	1	EPA 8260B	01/29/04	01/30/04	4010917	
Ethylbenzene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
o-Xylene	ND	100	"	"	"	"	"	"	
m,p-Xylene	ND	200	"	"	"	"	"	"	
Surr: 4-BFB	*99.1 %*	*42.6-130*							
Surr: 1,2-DCA-d4	*122 %*	*57.3-144*							
Surr: Dibromofluoromethane	*109 %*	*45.5-130*							
Surr: Toluene-d8	*121 %*	*42.1-144*							

North Creek Analytical - Portland

Crystal Jones, Project Manager

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GeoEngineers, Inc.	Project: Tosco	
15055 SW Sequoia Parkway, Suite 140	Project Number: 4823-528-00	**Reported:**
Portland, OR 97224	Project Manager: Marsi Beeson	02/12/04 15:21

Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
HA-2-10 (P4A0608-07) Soil					Sampled: 01/26/04 Received: 01/27/04				
Benzene	ND	1000	ug/kg dry	10	EPA 8260B	01/29/04	01/31/04	4010917	
Ethylbenzene	**8020**	1000	"	"	"	"	"	"	
Toluene	**3340**	1000	"	"	"	"	"	"	
o-Xylene	**22800**	1000	"	"	"	"	"	"	
m,p-Xylene	**38300**	2000	"	"	"	"	"	"	
Surr: 4-BFB	*140 %*	*42.6-130*							*S-03*
Surr: 1,2-DCA-d4	*114 %*	*57.3-144*							
Surr: Dibromofluoromethane	*93.7 %*	*45.5-130*							
Surr: Toluene-d8	*118 %*	*42.1-144*							
HA-2-12.5 (P4A0608-08) Soil					Sampled: 01/26/04 Received: 01/27/04				
Benzene	ND	100	ug/kg dry	1	EPA 8260B	01/29/04	01/31/04	4010917	
Ethylbenzene	**261**	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
o-Xylene	**711**	100	"	"	"	"	"	"	
m,p-Xylene	**1170**	200	"	"	"	"	"	"	
Surr: 4-BFB	*100 %*	*42.6-130*							
Surr: 1,2-DCA-d4	*118 %*	*57.3-144*							
Surr: Dibromofluoromethane	*98.7 %*	*45.5-130*							
Surr: Toluene-d8	*118 %*	*42.1-144*							
K Sample (P4A0608-09) Other wet					Sampled: 01/26/04 Received: 01/27/04				**P-02**
Benzene	**87500**	50000	ug/kg wet	50	EPA 8260B	01/29/04	01/31/04	4010917	
Ethylbenzene	**1290000**	50000	"	"	"	"	"	"	
Toluene	**1630000**	50000	"	"	"	"	"	"	
o-Xylene	**2370000**	50000	"	"	"	"	"	"	
m,p-Xylene	**4320000**	100000	"	"	"	"	"	"	
Surr: 4-BFB	*130 %*	*42.6-130*							
Surr: 1,2-DCA-d4	*105 %*	*57.3-144*							
Surr: Dibromofluoromethane	*92.5 %*	*45.5-130*							
Surr: Toluene-d8	*108 %*	*42.1-144*							

North Creek Analytical - Portland

Crystal Jones, Project Manager

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541.383.9310 fax 541.382.7588

GeoEngineers, Inc.	Project: Tosco	
15055 SW Sequoia Parkway, Suite 140	Project Number: 4823-528-00	**Reported:**
Portland, OR 97224	Project Manager: Marsi Beeson	02/12/04 15:21

Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010865 - EPA 5035										
Blank (4010865-BLK1)				Prepared & Analyzed: 01/28/04						
Gasoline Range Hydrocarbons	ND	2.00	mg/kg							
Surr: a,a,a-TFT	*1.78*		"	*1.25*		*142*	*50-150*			
LCS (4010865-BS2)				Prepared & Analyzed: 01/28/04						
Gasoline Range Hydrocarbons	30.2	2.00	mg/kg	31.2		96.8	70-130			
Surr: a,a,a-TFT	*1.28*		"	*1.25*		*102*	*50-150*			
Duplicate (4010865-DUP1)	**Source: P4A0670-01**			Prepared & Analyzed: 01/28/04						
Gasoline Range Hydrocarbons	123	2.00	mg/kg dry		74.7			48.9	40	E, Q-03
Surr: a,a,a-TFT	*1.87*		"	*1.58*		*118*	*50-150*			
Matrix Spike (4010865-MS2)	**Source: P4A0608-01**			Prepared: 01/28/04 Analyzed: 01/29/04						
Gasoline Range Hydrocarbons	31.9	2.00	mg/kg dry	35.2	ND	90.6	65-130			
Surr: a,a,a-TFT	*1.25*		"	*1.41*		*88.7*	*50-150*			

North Creek Analytical - Portland

Crystal Jones, Project Manager

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503.906.9200 fax 503.906.9210
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541.383.9310 fax 541.382.7588

GeoEngineers, Inc.	Project: Tosco	
15055 SW Sequoia Parkway, Suite 140	Project Number: 4823-528-00	**Reported:**
Portland, OR 97224	Project Manager: Marsi Beeson	02/12/04 15:21

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010867 - EPA 3550 Fuels										
Blank (4010867-BLK1)				Prepared: 01/29/04 Analyzed: 02/06/04						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*2.76*		"	*4.80*		*57.5*	*50-150*			
LCS (4010867-BS1)				Prepared: 01/29/04 Analyzed: 02/06/04						
Diesel Range Organics	118	25.0	mg/kg	125		94.4	50-150			
Heavy Oil Range Hydrocarbons	60.7	50.0	"	75.0		80.9	50-150			
Surr: 1-Chlorooctadecane	*4.09*		"	*4.80*		*85.2*	*50-150*			

North Creek Analytical - Portland

Crystal Jones, Project Manager

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541.383.9310 fax 541.382.7588

GeoEngineers, Inc.	Project: Tosco	
15055 SW Sequoia Parkway, Suite 140	Project Number: 4823-528-00	**Reported:**
Portland, OR 97224	Project Manager: Marsi Beeson	02/12/04 15:21

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010917 - EPA 5035										
Blank (4010917-BLK1)				Prepared & Analyzed: 01/29/04						
cis-1,3-Dichloropropene	ND	100	ug/kg							
trans-1,3-Dichloropropene	ND	100	"							
Ethylbenzene	ND	100	"							
Hexachlorobutadiene	ND	200	"							
2-Hexanone	ND	1000	"							
Isopropylbenzene	ND	200	"							
p-Isopropyltoluene	ND	200	"							
4-Methyl-2-pentanone	ND	500	"							
Methyl tert-butyl ether	ND	100	"							
Methylene chloride	ND	500	"							
Naphthalene	ND	200	"							
n-Propylbenzene	ND	100	"							
Styrene	ND	100	"							
1,1,1,2-Tetrachloroethane	ND	100	"							
1,1,2,2-Tetrachloroethane	ND	100	"							
Tetrachloroethene	ND	100	"							
Toluene	ND	100	"							
1,2,3-Trichlorobenzene	ND	100	"							
1,2,4-Trichlorobenzene	ND	100	"							
1,1,1-Trichloroethane	ND	100	"							
1,1,2-Trichloroethane	ND	100	"							
Trichloroethene	ND	100	"							
Trichlorofluoromethane	ND	100	"							
1,2,3-Trichloropropane	ND	100	"							
1,2,4-Trimethylbenzene	ND	100	"							
1,3,5-Trimethylbenzene	ND	100	"							
Vinyl chloride	ND	100	"							
o-Xylene	ND	100	"							
m,p-Xylene	ND	200	"							
Surr: 4-BFB	*1960*		"	*2000*		*98.0*	*42.6-130*			
Surr: 1,2-DCA-d4	*2420*		"	*2000*		*121*	*57.3-144*			
Surr: Dibromofluoromethane	*2300*		"	*2000*		*115*	*45.5-130*			
Surr: Toluene-d8	*2360*		"	*2000*		*118*	*42.1-144*			

North Creek Analytical - Portland

Crystal Jones, Project Manager

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GeoEngineers, Inc.	Project: Tosco	
15055 SW Sequoia Parkway, Suite 140	Project Number: 4823-528-00	**Reported:**
Portland, OR 97224	Project Manager: Marsi Beeson	02/12/04 15:21

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010945 - Dry Weight										
Duplicate (4010945-DUP1)		**Source: P4A0602-02**		Prepared: 01/30/04 Analyzed: 02/02/04						
% Solids	91.1	1.00% by Weight			90.8			0.330	20	
Duplicate (4010945-DUP2)		**Source: P4A0602-03**		Prepared: 01/30/04 Analyzed: 02/02/04						
% Solids	92.4	1.00% by Weight			92.6			0.216	20	
Duplicate (4010945-DUP3)		**Source: P4A0630-05**		Prepared: 01/30/04 Analyzed: 02/02/04						
% Solids	82.4	1.00% by Weight			82.5			0.121	20	
Duplicate (4010945-DUP4)		**Source: P4A0642-01**		Prepared: 01/30/04 Analyzed: 02/02/04						
% Solids	89.4	1.00% by Weight			89.3			0.112	20	

North Creek Analytical - Portland

Crystal Jones, Project Manager

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3209 Denali St, Anchorage, AK 99503-4030 907-334-9200 FAX 334-9210

CHAIN OF CUSTODY REPORT

Work Order #: PHA0608

CLIENT: GEI

REPORT TO: M Beeson
ADDRESS: 15055 SW Sequoia Pkwy # 140 Portland, OR 97224
PHONE: 503-624-9274 FAX: 503-620-3940

INVOICE TO: Conoco-Phillips

P.O. NUMBER:

PROJECT NAME: Bulk Plant
PROJECT NUMBER: 4823-528-00
SAMPLED BY: M. Rotting

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	REQUESTED ANALYSES: NWTPH-Gx (BTEX)	REQUESTED ANALYSES: NWTPH-Dx w/ Sil Gel	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1	SS-1-1	1/26/04 1045		X	X				
2	SS-2-1	1115		X	X				
3	SS-4-1	1125		X	X			per conversation w/ Crystal need to verify if spill is from product sample (especially at depth)	
4	HA-1-1	1140		X	X				
5	HA-1-4	1230		X	X				
6	HA-1-7.5	1253		X	X				
7	HA-2-10	1400		X	X				
8	HA-2-12.5	1415		X	X				
9	K sample	1500		X	X				
10									

RELEASED BY: Marjan Rotting — DATE: 1/27/04
PRINT NAME: Marjan Rotting — FIRM: GEI — TIME: 0830
RECEIVED BY: [signature] — DATE: 1/27/04
PRINT NAME: Bob E — FIRM: N/A — TIME: 9:30

RELEASED BY: [signature] — DATE:
PRINT NAME: — FIRM: — TIME:
RECEIVED BY: Erica Dahl — DATE: 1/27/04
PRINT NAME: Encarkar — FIRM: N/A — TIME: 1000

ADDITIONAL REMARKS: See comments section. Objective: Is product sample same as samples near surface and at depth.

TEMP: 1.0°C

COC REV 1.03

PAGE OF

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Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119
907 563 9200 fax 907 563 9210

Hydrocarbon Review

February 10, 2004

CLIENT: GeoEngineers, Inc.
PROJECT: Tosco
PROJECT #: 4823-528-00
NCA #: P4A0608

DESCRIPTION OF CASE

North Creek Analytical received five soil samples containing varied amounts of hydrocarbons under chain of custody from GeoEngineers, Inc.. Samples were held at 4°C until analysis. GeoEngineers requested the soils be tested for fuel characterization. This narrative summarizes the procedures and analysis of the data. The results for each sample can be found in report P4A0608.

SAMPLE LIST

Refer to the *Chain of Custody* documents for a summary of sample information. Listed below are the samples of interest.

Each group of samples received is given an NCA # (SDG#), proceeded by a P for Portland.

NCA#	Sample Description	Reported Concentration (mg/Kg)
P4A0608-04	HA-1-1	11.9
P4A0608-05	HA-1-4	1620
P4A0608-06	HA-1-7.5	1350
P4A0608-07	HA-2-10	1520
P4A0608-08	HA-2-12.5	120
P4A0608-08	K Sample	4310

COMMENTS ON ANALYSIS

All product samples were analyzed utilizing a gas chromatograph (GC) to separate hydrocarbons present in the product. A flame ionization detector was used to produce a chromatographic trace of the products and to identify specific hydrocarbons in the samples that produced chromatographic traces (Figure I).

Due to differences in some of the chromatograms the samples are being evaluated for the presence of other distillate – #2 Diesel in particular – that could represent other petroleum spills. A simulated distillation was performed on the samples to determine whether multiple petroleum distillates were observed in any of the samples.

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Hydrocarbon Review

February 10, 2004

CLIENT:	**GeoEngineers, Inc.**
PROJECT:	**Tosco**
PROJECT #:	**4823-528-00**
NCA #:	**P4A0608**

DISCUSSION

The petroleum distillate in these samples range from very slightly to modarately altered. Compositional change of after the product release into the environment is influenced by many factors including: volatilization, dissolution, biodegradation, and interaction with solid matrices. The rate of chemical alteration is also dependent on multiple factors: the amount of product released, temperature, water, oxygen, and nutrients. Physical influences include leaching, sparging, mixing, movement, and pressure changes. Loss of light hydrocarbon begins immediately upon release, how the factors above are combined and applied in the area of release will determine the rate of product weathering.

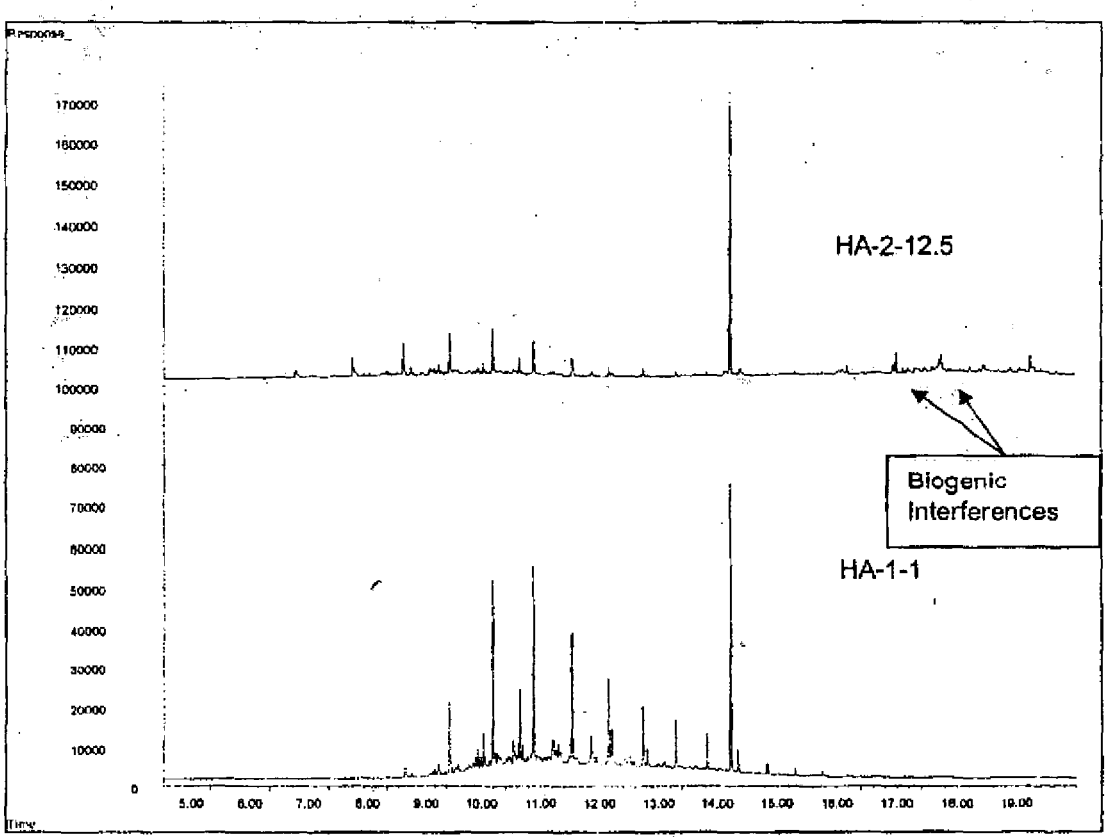

Figure III: Comparison of chromatograms of samples taken near surface and at the bottom of the sampling well. Surface distillate appears to be a different, heavier product.

Initial analysis of chromatograms from these samples indicated the fuel products remaining in the soil are altered from their original composition or that a mixture of waste fuel and oils were released

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Hydrocarbon Review

February 10, 2004

CLIENT:	**GeoEngineers, Inc.**
PROJECT:	**Tosco**
PROJECT #:	**4823-528-00**
NCA #:	**P4A0608**

Simulated distillation histograms are an easy technique used to show whether samples contain multiple products in a spill site. Typically the histogram curve will exhibit different slopes for each distillate as well as a hump between each. No humps are observed here other than, in some cases, for the surrogate standard used in the quantitative analysis.

CONCLUSIONS

In my opinion the hydrocarbon curves detected in these samples are all derived from the same parent petroleum product (K Sample). They show differing degrees of the various degradation processes that can act on a fuel when it enters the environment.

If you have any questions regarding this report please contact me by telephone at 503-906-9200 ext.220 or email: sbonde@ncalabs.com.

Steven E. Bonde

Technical Director

North Creek Analytical

Beaverton, OR

ConocoPhillips **Preliminary Incident/Near Miss Notification (PIN) Form**

General Information

Facility/Area of Event:	Portland Terminal	Date/Time of Event:	1/22/2003 @ 2:30 pm
P.I.N. Prepared By:	John Sherman	Date/Time of P.I.N.:	1/22/2003 @ 5:30 pm

Type of Incident or Near Miss:

(check one)

☐	**Serious Incident:**	Fatality, hospitalization of employee, lost workday case, injury/spill reportable to a government agency, significant media coverage, significant threat to public/environment, citation/NOV, potential loss >$10,000.
☒	**Minor Incident:**	Restricted workday or medical treatment case, first aid case, spill/incident not reportable to a government agency, minor vehicle accident (no injury), or potential loss <$10,000.
☐	**Serious Near Miss:**	Event that, under slightly different circumstances, could have reasonably resulted in a fatality, hospitalization of employee, lost workday case, injury/spill reportable to a government agency, significant media coverage, significant threat to public/environment, citation/NOV, potential loss >$10,000.
☐	**Minor Near Miss:**	Event that, under slightly different circumstances, could have reasonably resulted in a restricted workday, medical treatment case, first aid case, spill not reportable to a government agency, minor vehicle accident (no injury), or potential < $10,000.

Incident/Near Miss Classification (check all that apply)

Involved Parties: ☐ **Safety** ☒ **Environmental** ☐ **Other**

☐ Employee	☐ Injury/Illness (also complete form 2-B-S or 2-C-S)	☐ Spill/Leak/ Release	☐ Product Mix or Contamination
☐ Contractor (also complete form 972-S)	☐ Fire/Explosion	☐ Notice of Violation	☐ Significant Media Coverage
☐ General Public (also complete form 972-S)	☐ Motor Vehicle Collision (also complete form 290-S)	☐ Discovery of Historic Contamination	☐ Loss of Process
☐ Property Damage/Loss/Theft (also complete form 2776-S)	☒ Evironment Impact		☐ Other Event (Describe:)

DESCRIPTION: (Describe the incident/near miss - - who, what, when, where, how, why, including any immediate action taken. Attach any photos or sketches):

Note that this incident was entered into ITS on 1/22/2003 at 5:30 pm. Automatic distribution of the incident by ITS via email failled. This PIN is being issued in lieu of ITS notification.

Portland had a 2" drain down ball valve fail on the distillate section of the Portland Terminal intercompany pipeline. (The line connects the COP, Chevron Marketing and Kinder Morgan Terminals). Based on the time of a terminal inspection on Wednesday afternoon, activity on the line Wednesday evening, and a dock inspection early Thursday morning, it is estimated that 10 to12 gallons of kerosene was released to the soil. The leak was about 100' from the Willamette River. No product was released to the river and there were no injuries. The line is not a DOT regulated line. Cause of the failure is not known at this time. Repairs were completed by 8 PM Thusday evening.

The leak and action plan will be reported to Oregon DEQ as a courtesy notification. Those involved in the decision to report the leak to DEQ were John Sherman, Bill Collins and Marty Cramer. The leak does not meet the threshold that requires reporting to the National Response Center nor to the Oregon Emergency Response System. Our clean-up action plan will involve excavating by hand to a depth of 2 to 3 feet and augering to a depth of 10' to define the extent of the release. Pipeline footings in the area prevent deeper excavation. Samples will also be obtained to define the breadth of the release. If the release appears to be greater than 12 gallons, additional appropriate notifications will be made.

PRELIMINARY RISK RANKING: 2

INVESTIGATION LEADER: John Sherman

Telephone Number: 503-248-1538

COP0015893

Cramer, Marty:

From: Collins, Bill:
Sent: Monday, March 15, 2004 8:49 AM
To: Cramer, Marty:
Cc: Sherman, John:
Subject: FW: Addendum to 040210-01 Case Narrative

For your follow-up call to DEQ.

-----Original Message-----
From: Steve Bonde [mailto:SBonde@ncalabs.com]
Sent: Friday, March 12, 2004 5:00 PM
To: Collins, Bill:
Subject: Addendum to 040210-01 Case Narrative

Bill,

It was a pleasure to talk with you earlier this week.

As I described in our conversation I did not think the hydrocarbon observed at 12.5 feet in the soil could be considered a different product than those detected in samples above it. Rather it appears to be a less degraded hydrocarbon, which appears to be very similar to the K-Sample that is considered the source hydrocarbon. It is my opinion these samples all derive from the same product source and have undergone different levels of a number of different types of degradation; most notably volatilization of light compounds and leaching of the more soluble hydrocarbons (typically aromatics and heteroatomic species)

Please note, both from the quantitative report and from figure I of the narrative, the samples at 12.5 feet and 1 foot reported very small amounts of hydrocarbon as compared to the samples from 4 to 10 feet. This indicates, for this test sample site, the bulk of the contamination appears to reside between the 4 and 10 foot levels.

The product appears to be a kerosene cut (Jet A, JP-8, #1 fuel oil, etc). Typical kerosene hydrocarbon cuts range from n-heptane (C7) to around Eicosane (C20). Thus, a kerosene derived fuel detected in an environmental sample using standard Gx and Dx methodology will show significantly in both analyses. Standard Gx methods quantify fuels up to approximately decane (C10) or higher while the Dx can see hydrocarbons as low as octane (C8) although the standard calls for the laboratory to quantify from decane (C10) to octaeicosane (C28). Kerosene derived fuels uniquely straddle the line (decane) between gasoline range organics and diesel range organics.

Best Regards,

Steven E. Bonde, Technical Director
North Creek Analytical Laboratories
SBonde@ncalabs.com
Cell: 971-404-9287
Direct: 503-906-9261

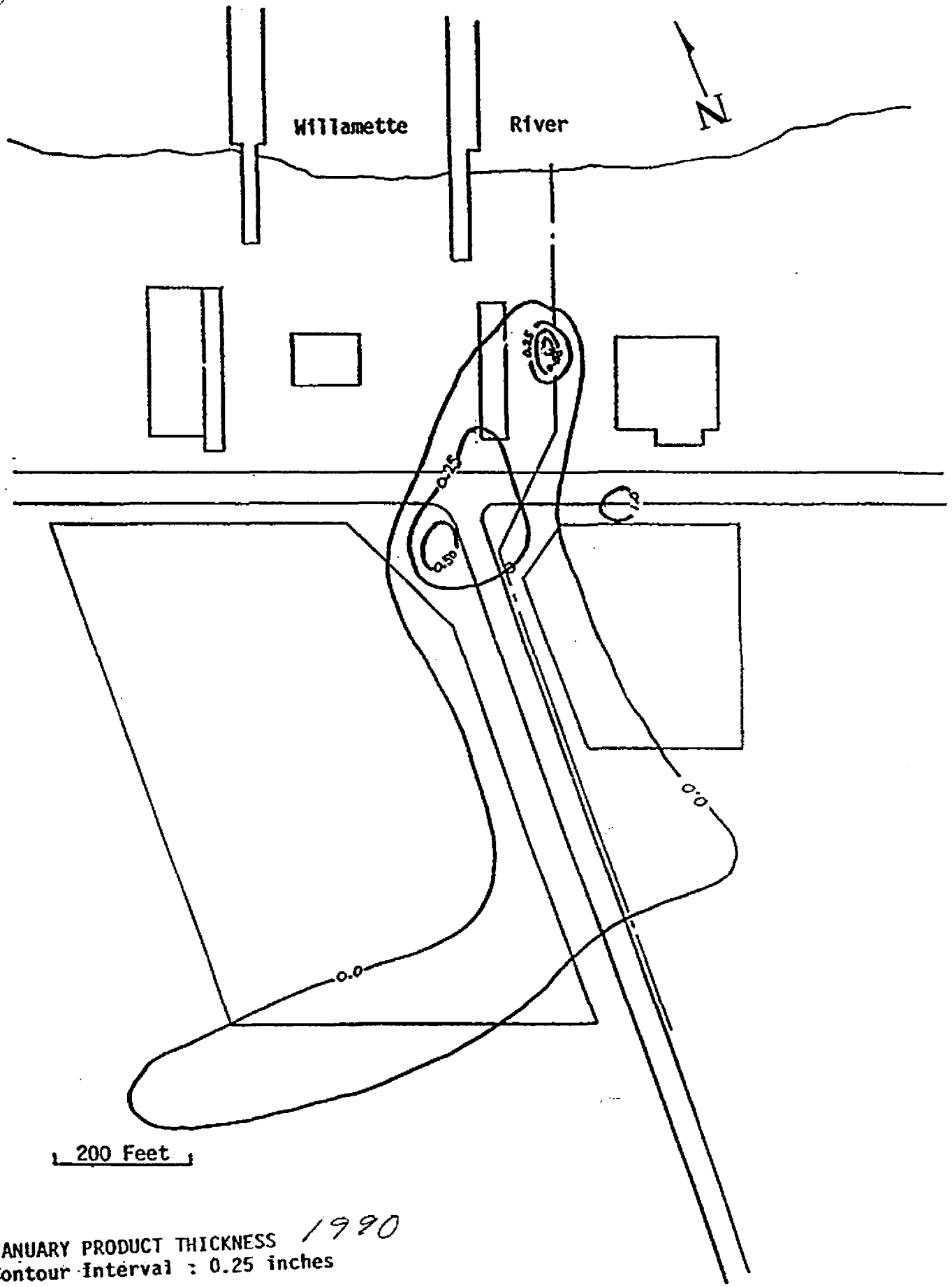
Table A-1
Well Construction Summary
UNOCAL Willbridge Terminal
October 1994

Well Designation	Well/ Boring Log	Date Installed	Well Boring Diameter (inches)	Well Boring Depth (feet)	Well Diameter (inches)	Well Depth (feet)	Riser Well Casing Materials	Ground Surface Elevation (feet)	Top Casing Elevation (feet)	Screened Interval - Depth Below GS (ft) Top	Bottom	Surface Monument Type	Screen Slot Size and Type
U-2	Boring	03/19/85	10	29.5	4		PVC	35.4	35.02[a]				0.010 PVC
U-3	Boring	03/20/85	10	24.5	4	21.55	PVC	35.50	35.25[a]				0.010 PVC
U-4	Boring	03/20/85	10	34.5	4		PVC	34.85	34.46[a]				0.010 PVC
U-5A	NA				2" ?			34.12	33.77[a]				
U-5		11/86											
B-1	Both	4/27/82	8	34	2	32	PVC	34.97		5	32	Flush mount	0.010 PVC
B-2U													
B-3	Both	4/27/82	8	35	2	35	PVC	35.17	34.91	5	35	Flush mount	0.010 PVC
B-4	Both	4/27/82	8	41.5	2	40.5	PVC	34.98	34.79	5	40.5	Flush mount	0.010 PVC
B-5	Both	4/27/82	8	35	2	32	PVC	35.43	34.83	5	32	Flush mount	0.010 PVC
B-17	Both	4/29/82	8	30	2	30	PVC	35.84	35.59	5	30	Flush mount	0.010 PVC
B-18	Both	4/29/82	8	35	2	35	PVC	36.03	35.76	5	35	Flush mount	0.010 PVC
B-22	Boring	07/06/82	8	35	2	35	PVC	34.94	34.67	5	35	Flush mount	0.010 PVC
B-23	Boring	07/06/82 aband. 9/93	8	35	2	35	PVC	36.03	35.71	3	35	Flush mount	0.010 PVC
B-25	Boring	07/07/82	8	30	2	30	PVC	36.33	35.83	5	30	Flush mount	0.010 PVC
B-27	Boring	07/07/82	8	35	2	35	PVC	35.94	35.74	5	35	Flush mount	0.010 PVC
B-35	Both	3/3/83	8	31	2	31	PVC[a]	34.39	35.79[a]	11	31	Flush mount	0.010 PVC[a]
B-36	Both	3/3/83	8	31	2	31	PVC[a]	31.74	33.26[a]	11	31	Flush mount	0.010 PVC[a]
B-37	Both	3/2/83	8	31	2	31	PVC[a]	36.17	37.55[a]	11	31	Flush mount	0.010 PVC[a]
B-38	Both	3/2/83	8	31	2	31	PVC[a]	35.18	36.57[a]	11	31	Flush mount	0.010 PVC[a]
B-39	Both	3/2/83	8	31	2	31	PVC[a]	34.61	36.00[a]	11	31	Flush mount	0.010 PVC[a]
B-40	Both	3/2/83	8	31	2	31	PVC[a]	33.89	35.30[a]	11	31	Flush mount	0.010 PVC[a]
B-41	Both	3/2/83	8	30	2	30	PVC[a]	34.96	36.36[a]	10	30	Flush mount	0.010 PVC[a]
EW-1	NA												
RES - Old	Well	1984	18	49	12		SCH 40 PVC		37.66[c]	14	29		.020
IT WEST	NA								35.91[c]				
IT EAST	NA				>4				36.44[c]				
RES - New	NA	8/87	Trench	41.2	12	41.2	Mild Steel		37.72[c]	6	36		0.01 SS304

[a]Information suspected to be incorrect, cannot be verified.
[b]Information was assumed.
[c]Information is based on review of available reports and has not been field verified.
Reference: Results of monitoring well installation for Union 76 property, 3/85

CVOR411/035.XLS

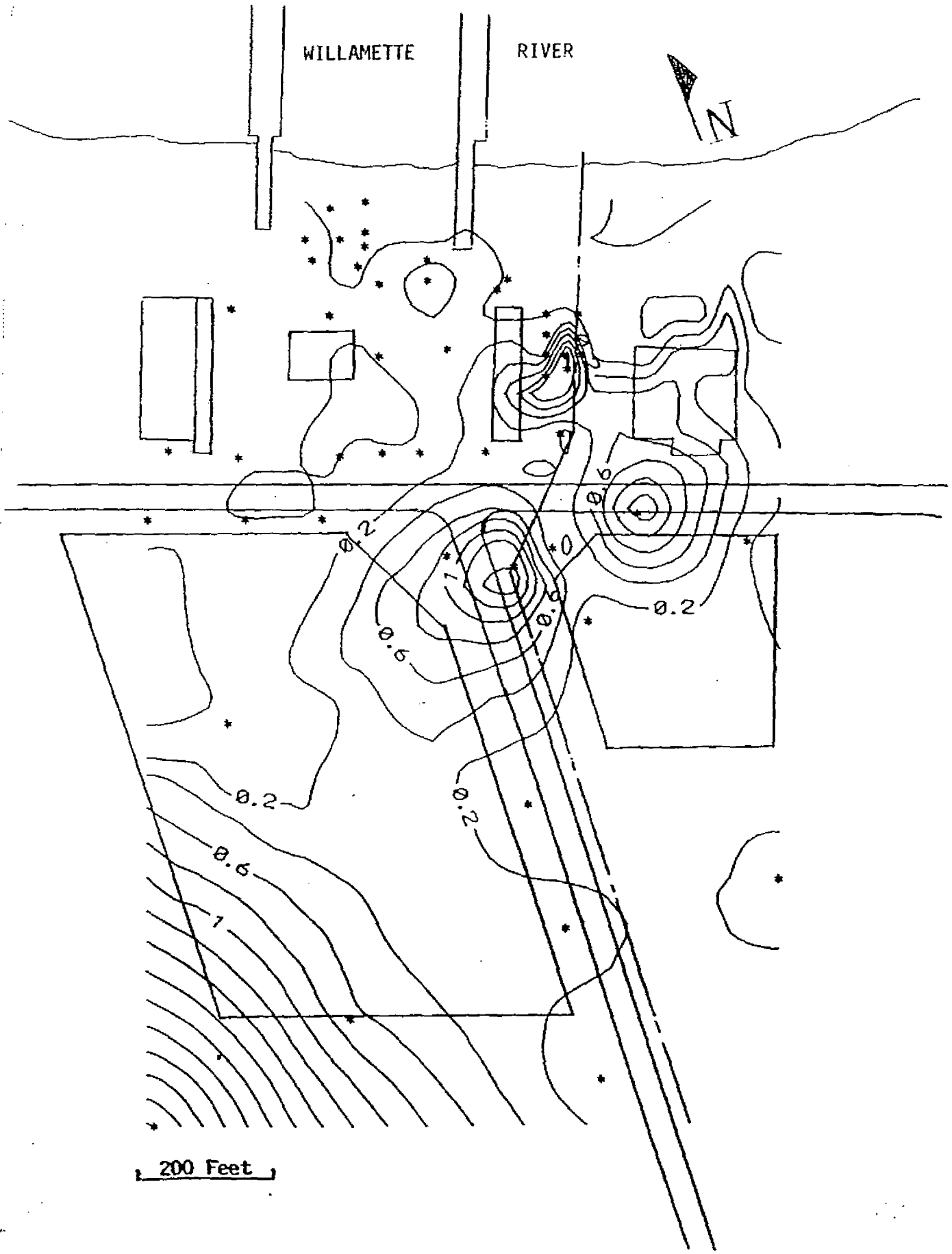
COP0015895



JANUARY PRODUCT THICKNESS 1990
Contour Interval : 0.25 inches

1990 PRODUCT THICKNESS

JUNE 1990 PRODUCT THICKNESS



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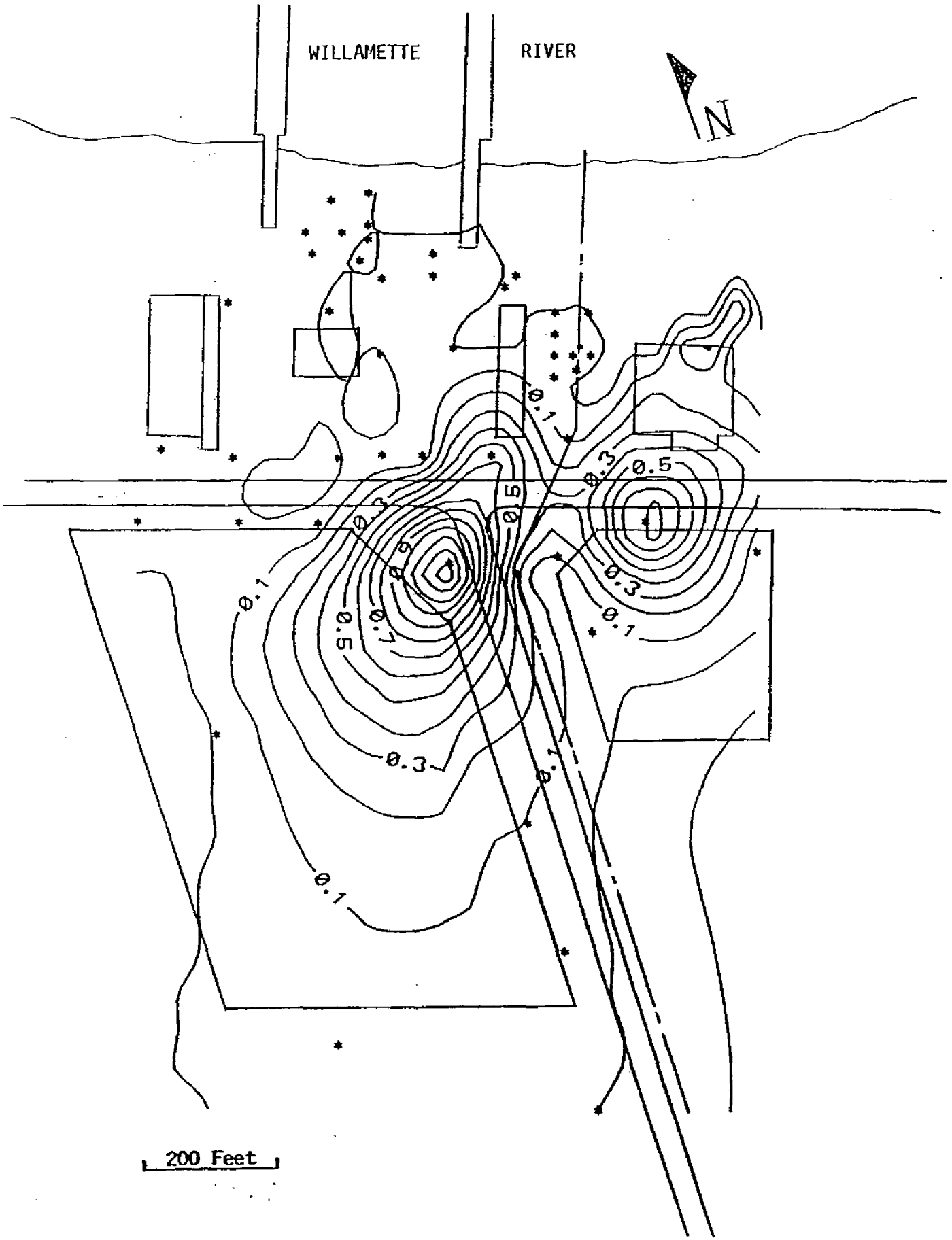
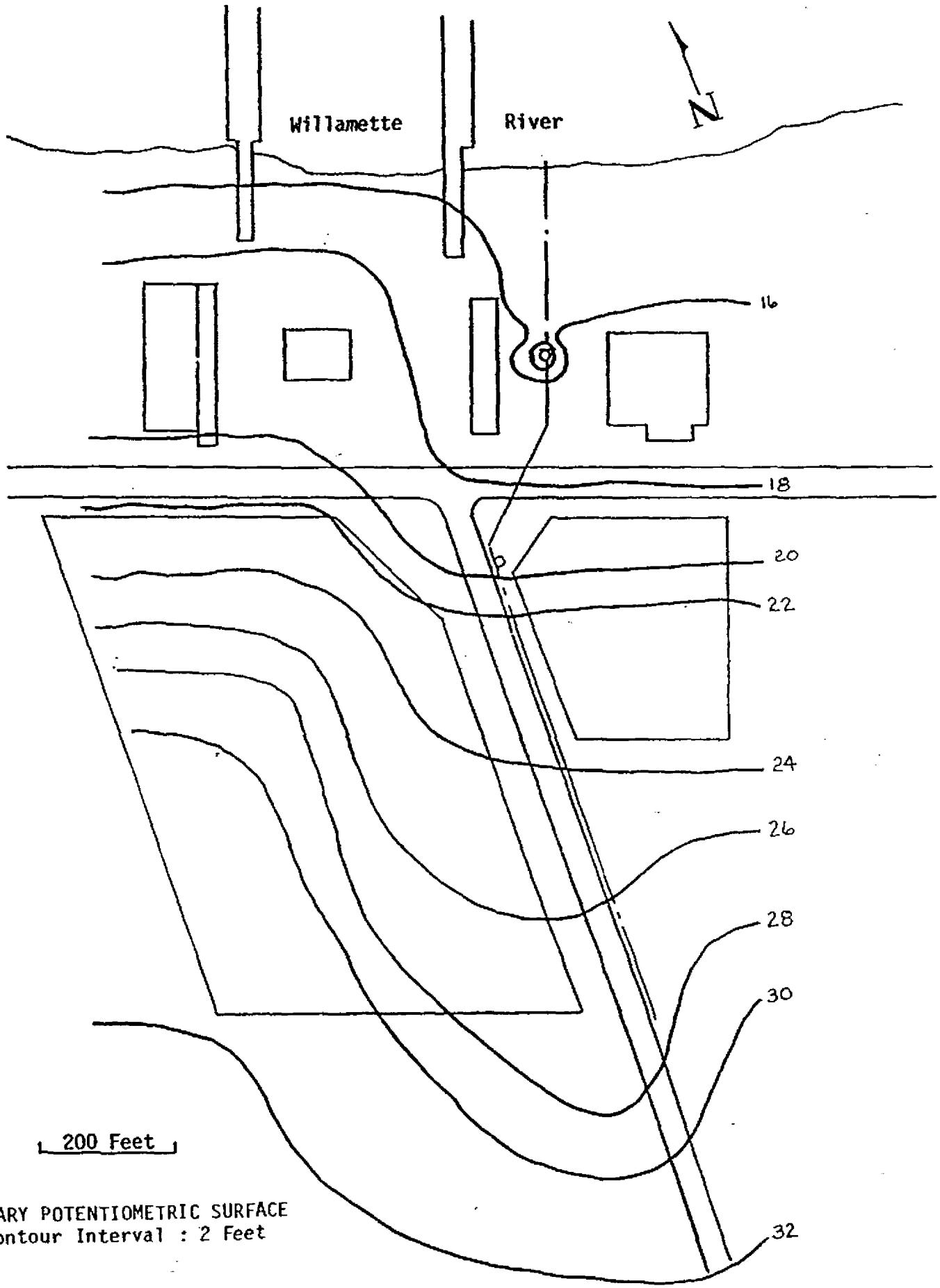
DECEMBER 1990 PRODUCT THICKNESS

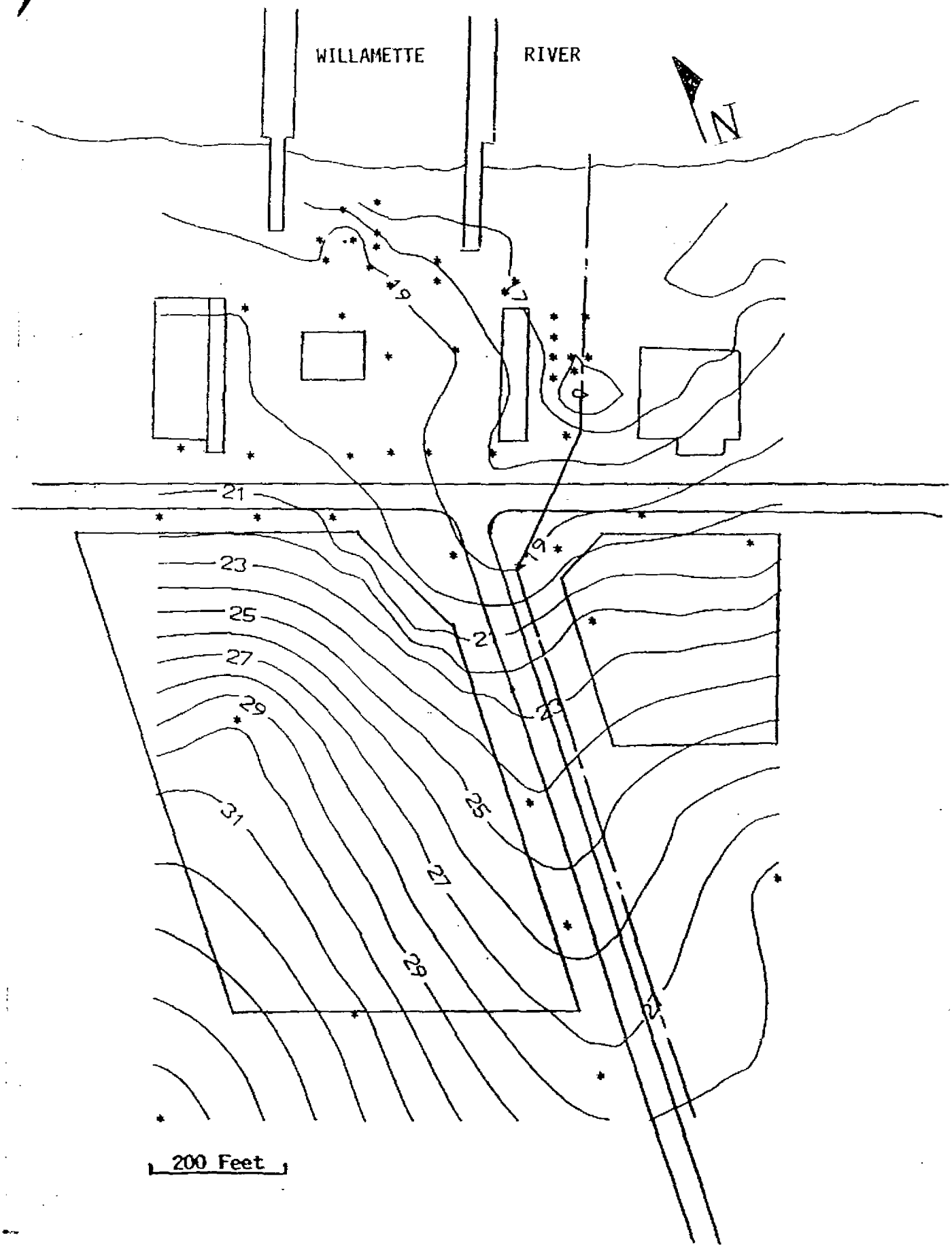




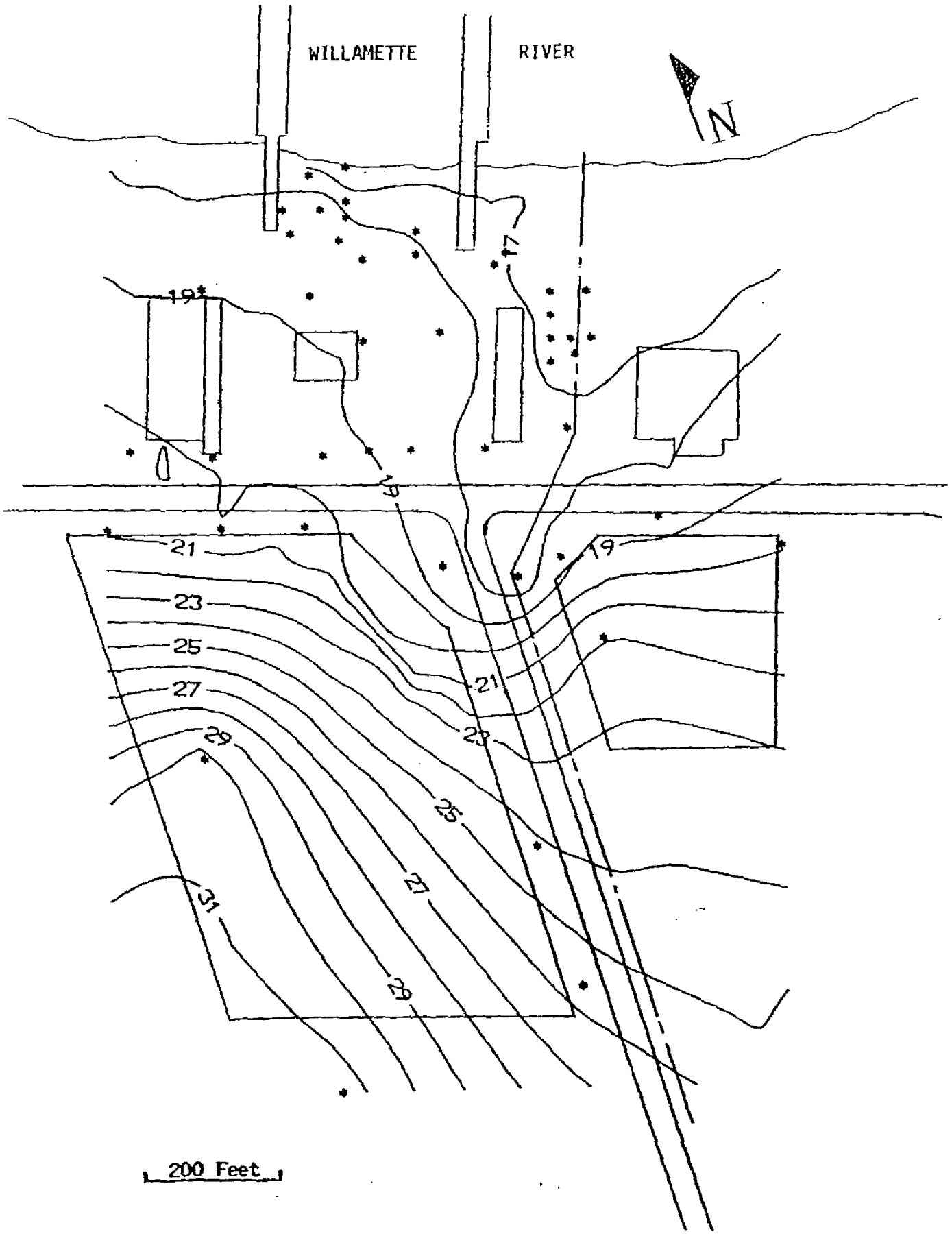
JANUARY POTENTIOMETRIC SURFACE
Contour Interval : 2 Feet

1990 WATER LEVELS

JUNE 1990 POTENTIOMETRIC SURFACE



DECEMBER 1990 POTENTIOMETRIC SURFACE



Cramer, Marty: AOC 0922

From: Carroll, William: CORRECT.
Sent: Thursday, July 01, 2004 12:35 AM
To: Lefebvre, Gary:; Hauck, David:
Cc: Collins, Bill:; Lyons, Thomas:; Sherman, John:; Cramer, Marty:
Subject: RE: Tank 2917 Cleanup

Gary, David

As follow up on activities on cleanup, and to add to overall incident report.

Scott Gilfilan with Cowlitz and I surveyed the spill area at approximately 13:00 on 6/30/04. We proceeded to pull a total of 9 samples of soil for testing.

- Samples included: 4 around base of tank
  2 under adjacent piping where oil migrated
  1 directly under tank

  These samples will hopefully show we excavated enough dirt to get back to background / native soil.

- We took 2 additional samples form the contaminated soil stockpiles which will be used to compare against excavated area. They also are being tested for few other constituents as these samples will need to be profiled for waste disposal.

- We also sent in a single sample of pure RLOP220N base oil. This will also be used to compare against excavated area.

There is approximately 25 yards of soil stockpiled on viscuene plastic, in back by new warehouse.

The samples were sent out today, and results should be back in 24-48 hours. Once we confirm from samples that we excavated enough dirt out of spill area, and get the soil profiled for manifesting, the soil will be disposed of by Cowlitz at Hillsboro landfill.

We also need to look at backfill soil and gravel as a cost to be tacked onto Dunkin and Bush as well. Not sure of this process, but we need to consider this as well.

Thanks
William

William Carroll
Health, Safety & Environment
ConocoPhillips
Los Angeles Lubricants
(310) 538-7664

-----Original Message-----
From: Lefebvre, Gary:
Sent: Tuesday, June 29, 2004 3:51 PM
To: Lyons, Thomas:

Cc: Carroll, William:; Collins, Bill:
Subject: FW: Tank 2917 Cleanup

Tom is it possible to get copies of all documentation regarding what was done and the results of all the testing from all of the contractors used. My concern is that invoices or documentation regarding clean up / test results goes to Dunkin Bush and not us. We probably need good records to prove that we handled the clean up responsibly.
-----Original Message-----
From: Collins, Bill:
Sent: Tuesday, June 29, 2004 2:49 PM
To: Lefebvre, Gary:; Hauck, David:
Cc: Sherman, John:
Subject: Tank 2917 Cleanup

Dave and Gary, I'll need the RLOP 220 sample by tomorrow mid-morning. CCS has already removed a good bit of affected soil. They should be done tomorrow morning, at which time they will sample. Hopefully the results will indicate that we do not need to remove any additional soil. Bill

William H. (Bill) Collins
Environmental Coordinator
ConocoPhillips Company
5528 NW Doane Avenue
Portland, Oregon 97210
(W) 503-248-1552
(F) 503-248-1592
(C) 503-849-4441

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Conoco Phillips - Portland	Project: n/a	
5528 NW Doane St	Project Number: Tank 2916	**Reported:**
Portland, OR 97210	Project Manager: Tom Lyons	12/16/03 15:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NW Corner Ground	P3L0258-01	Soil	12/05/03 10:15	12/05/03 15:40
NW Corner 3-9 1/2	P3L0258-02	Soil	12/05/03 10:20	12/05/03 15:40
NW Corner 9 1/2-13	P3L0258-03	Soil	12/05/03 10:25	12/05/03 15:40
E Side Ground	P3L0258-04	Soil	12/05/03 10:50	12/05/03 15:40
E Side 3 1/2-12	P3L0258-05	Soil	12/05/03 10:55	12/05/03 15:40
E Side 12-18	P3L0258-06	Soil	12/05/03 11:00	12/05/03 15:40

North Creek Analytical - Portland

Crystal Jones, Project Manager

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Conoco Phillips - Portland	Project: n/a	
5528 NW Doane St	Project Number: Tank 2916	**Reported:**
Portland, OR 97210	Project Manager: Tom Lyons	12/16/03 15:31

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
NW Corner Ground (P3L0258-01) Soil					Sampled: 12/05/03 Received: 12/05/03				
Benzene	**1.08**	0.500	mg/kg dry	10	NW-G, 8021B	12/08/03	12/10/03	3120306	
Toluene	**0.806**	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.25**	0.500	"	"	"	"	"	"	
Xylenes (total)	**5.21**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**509**	25.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*146 %*	*70-130*							*S-09*
Surr: a,a,a-TFT (FID)	*130 %*	*50-150*							
NW Corner 3-9 1/2 (P3L0258-02) Soil					Sampled: 12/05/03 Received: 12/05/03				
Benzene	**0.904**	0.500	mg/kg dry	10	NW-G, 8021B	12/08/03	12/10/03	3120306	
Toluene	**0.873**	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.96**	0.500	"	"	"	"	"	"	
Xylenes (total)	**8.12**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**812**	25.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*187 %*	*70-130*							*S-09*
Surr: a,a,a-TFT (FID)	*177 %*	*50-150*							*S-09*
NW Corner 9 1/2-13 (P3L0258-03) Soil					Sampled: 12/05/03 Received: 12/05/03				
Benzene	**0.859**	0.500	mg/kg dry	10	NW-G, 8021B	12/08/03	12/10/03	3120306	
Toluene	**0.848**	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.97**	0.500	"	"	"	"	"	"	
Xylenes (total)	**7.74**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**827**	25.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*176 %*	*70-130*							*S-09*
Surr: a,a,a-TFT (FID)	*164 %*	*50-150*							*S-09*

North Creek Analytical - Portland

Crystal Jones, Project Manager

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Conoco Phillips - Portland	Project: n/a	
5528 NW Doane St	Project Number: Tank 2916	**Reported:**
Portland, OR 97210	Project Manager: Tom Lyons	12/16/03 15:31

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
E Side Ground (P3L0258-04) Soil					Sampled: 12/05/03 Received: 12/05/03				
Benzene	ND	0.500	mg/kg dry	10	NW-G, 8021B	12/08/03	12/10/03	3120306	
Toluene	**0.596**	0.500	"	"	"	"	"	"	
Ethylbenzene	**6.28**	0.500	"	"	"	"	"	"	
Xylenes (total)	**8.18**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**529**	25.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*149 %*	*70-130*							*S-09*
Surr: a,a,a-TFT (FID)	*138 %*	*50-150*							
E Side 3 1/2-12 (P3L0258-05) Soil					Sampled: 12/05/03 Received: 12/05/03				
Benzene	**0.698**	0.500	mg/kg dry	10	NW-G, 8021B	12/08/03	12/10/03	3120306	
Toluene	**0.849**	0.500	"	"	"	"	"	"	
Ethylbenzene	**11.0**	0.500	"	"	"	"	"	"	
Xylenes (total)	**13.5**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**757**	25.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*153 %*	*70-130*							*S-09*
Surr: a,a,a-TFT (FID)	*157 %*	*50-150*							*S-09*
E Side 12-18 (P3L0258-06) Soil					Sampled: 12/05/03 Received: 12/05/03				
Benzene	**0.989**	0.500	mg/kg dry	10	NW-G, 8021B	12/08/03	12/11/03	3120306	
Toluene	**0.905**	0.500	"	"	"	"	"	"	
Ethylbenzene	**9.76**	0.500	"	"	"	"	"	"	
Xylenes (total)	**10.5**	0.500	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**583**	25.0	"	"	"	"	"	"	
Surr: a,a,a-TFT (PID)	*189 %*	*70-130*							*S-09*
Surr: a,a,a-TFT (FID)	*233 %*	*50-150*							*S-09*

North Creek Analytical - Portland

Crystal Jones, Project Manager

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Conoco Phillips - Portland	Project: n/a	
5528 NW Doane St	Project Number: Tank 2916	**Reported:**
Portland, OR 97210	Project Manager: Tom Lyons	12/16/03 15:31

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
NW Corner Ground (P3L0258-01) Soil					Sampled: 12/05/03 Received: 12/05/03				
Diesel Range Organics	**16200**	500	mg/kg dry	20	NWTPH-Dx	12/11/03	12/12/03	3120431	
Heavy Oil Range Hydrocarbons	**8300**	1000	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
NW Corner 3-9 1/2 (P3L0258-02) Soil					Sampled: 12/05/03 Received: 12/05/03				
Diesel Range Organics	**16500**	500	mg/kg dry	20	NWTPH-Dx	12/11/03	12/12/03	3120431	
Heavy Oil Range Hydrocarbons	**7260**	1000	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
NW Corner 9 1/2-13 (P3L0258-03) Soil					Sampled: 12/05/03 Received: 12/05/03				
Diesel Range Organics	**25600**	500	mg/kg dry	20	NWTPH-Dx	12/11/03	12/11/03	3120431	
Heavy Oil Range Hydrocarbons	**11700**	1000	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
E Side Ground (P3L0258-04) Soil					Sampled: 12/05/03 Received: 12/05/03				
Diesel Range Organics	**9500**	500	mg/kg dry	20	NWTPH-Dx	12/11/03	12/12/03	3120431	
Heavy Oil Range Hydrocarbons	**5590**	1000	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*
E Side 3 1/2-12 (P3L0258-05) Soil					Sampled: 12/05/03 Received: 12/05/03				
Diesel Range Organics	**12800**	500	mg/kg dry	20	NWTPH-Dx	12/11/03	12/12/03	3120431	
Heavy Oil Range Hydrocarbons	**8700**	1000	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*128 %*	*50-150*							
E Side 12-18 (P3L0258-06) Soil					Sampled: 12/05/03 Received: 12/05/03				
Diesel Range Organics	**15000**	500	mg/kg dry	20	NWTPH-Dx	12/11/03	12/12/03	3120431	
Heavy Oil Range Hydrocarbons	**9780**	1000	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	*NR*	*50-150*							*S-01*

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Conoco Phillips - Portland	Project: n/a	
5528 NW Doane St	Project Number: Tank 2916	**Reported:**
Portland, OR 97210	Project Manager: Tom Lyons	12/16/03 15:31

Percent Dry Weight (Solids) per Standard Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
NW Corner Ground (P3L0258-01) Soil					Sampled: 12/05/03 Received: 12/05/03				
% Solids	**97.3**	1.00	% by Weight	1	NCA SOP	12/10/03	12/11/03	3120423	
NW Corner 3-9 1/2 (P3L0258-02) Soil					Sampled: 12/05/03 Received: 12/05/03				
% Solids	**94.9**	1.00	% by Weight	1	NCA SOP	12/10/03	12/11/03	3120423	
NW Corner 9 1/2-13 (P3L0258-03) Soil					Sampled: 12/05/03 Received: 12/05/03				
% Solids	**93.6**	1.00	% by Weight	1	NCA SOP	12/10/03	12/11/03	3120423	
E Side Ground (P3L0258-04) Soil					Sampled: 12/05/03 Received: 12/05/03				
% Solids	**94.4**	1.00	% by Weight	1	NCA SOP	12/10/03	12/11/03	3120423	
E Side 3 1/2-12 (P3L0258-05) Soil					Sampled: 12/05/03 Received: 12/05/03				
% Solids	**92.3**	1.00	% by Weight	1	NCA SOP	12/10/03	12/11/03	3120423	
E Side 12-18 (P3L0258-06) Soil					Sampled: 12/05/03 Received: 12/05/03				
% Solids	**93.7**	1.00	% by Weight	1	NCA SOP	12/10/03	12/11/03	3120423	

North Creek Analytical - Portland

Crystal Jones, Project Manager

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Conoco Phillips - Portland	Project: n/a	
5528 NW Doane St	Project Number: Tank 2916	**Reported:**
Portland, OR 97210	Project Manager: Tom Lyons	12/16/03 15:31

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3120306 - EPA 5035										
Blank (3120306-BLK1)				Prepared: 12/08/03 Analyzed: 12/10/03						
Benzene	ND	0.0500	mg/kg							
Toluene	ND	0.0500	"							
Ethylbenzene	ND	0.0500	"							
Xylenes (total)	ND	0.0500	"							
Gasoline Range Hydrocarbons	ND	2.50	"							
Surr: a,a,a-TFT (PID)	*1.52*		"	*1.25*		*122*	*70-130*			
Surr: a,a,a-TFT (FID)	*1.35*		"	*1.25*		*108*	*50-150*			
LCS (3120306-BS1)				Prepared: 12/08/03 Analyzed: 12/10/03						
Benzene	0.550	0.0500	mg/kg	0.500		110	65-130			
Toluene	0.533	0.0500	"	0.500		107	65-130			
Ethylbenzene	0.571	0.0500	"	0.500		114	65-130			
Xylenes (total)	1.68	0.0500	"	1.50		112	65-130			
Surr: a,a,a-TFT (PID)	*1.55*		"	*1.25*		*124*	*70-130*			
LCS (3120306-BS2)				Prepared: 12/08/03 Analyzed: 12/10/03						
Gasoline Range Hydrocarbons	25.4	2.50	mg/kg	31.2		81.4	50-150			
Surr: a,a,a-TFT (FID)	*1.44*		"	*1.25*		*115*	*50-150*			
Duplicate (3120306-DUP1)		**Source: P3L0258-01**		Prepared: 12/08/03 Analyzed: 12/10/03						
Gasoline Range Hydrocarbons	546	25.0	mg/kg dry		509			7.01	50	
Surr: a,a,a-TFT (FID)	*1.82*		"	*1.28*		*142*	*50-150*			
Matrix Spike (3120306-MS1)		**Source: P3L0268-01**		Prepared: 12/08/03 Analyzed: 12/11/03						
Benzene	0.707	0.0500	mg/kg dry	0.852	ND	83.0	65-130			
Toluene	0.728	0.0500	"	0.852	0.0994	73.8	65-130			
Ethylbenzene	0.583	0.0500	"	0.852	ND	68.4	65-130			
Xylenes (total)	1.61	0.0500	"	2.56	0.0344	61.5	65-130			Q-01
Surr: a,a,a-TFT (PID)	*1.37*		"	*2.13*		*64.3*	*70-130*			*S-09*

North Creek Analytical - Portland

Crystal Jones, Project Manager

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Conoco Phillips - Portland	Project: n/a	
5528 NW Doane St	Project Number: Tank 2916	**Reported:**
Portland, OR 97210	Project Manager: Tom Lyons	12/16/03 15:31

Gasoline Hydrocarbons per NW TPH-Gx Method and BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3120306 - EPA 5035										
Matrix Spike (3120306-MS2)	**Source: P3L0258-02**			Prepared: 12/08/03 Analyzed: 12/10/03						
Gasoline Range Hydrocarbons	938	25.0	mg/kg dry	32.9	812	>300%	65-130			Q-03
Surr: a,a,a-TFT (FID)	*2.28*		"	*1.32*		*173*	*50-150*			*S-09*
Matrix Spike Dup (3120306-MSD1)	**Source: P3L0268-01**			Prepared: 12/08/03 Analyzed: 12/11/03						
Benzene	0.751	0.0500	mg/kg dry	0.852	ND	88.1	65-130	6.04	20	
Toluene	0.765	0.0500	"	0.852	0.0994	78.1	65-130	4.96	20	
Ethylbenzene	0.650	0.0500	"	0.852	ND	76.3	65-130	10.9	20	
Xylenes (total)	1.81	0.0500	"	2.56	0.0344	69.4	65-130	11.7	20	
Surr: a,a,a-TFT (PID)	*1.50*		"	*2.13*		*70.4*	*70-130*			

North Creek Analytical - Portland

Crystal Jones, Project Manager

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Conoco Phillips - Portland	Project: n/a	
5528 NW Doane St	Project Number: Tank 2916	**Reported:**
Portland, OR 97210	Project Manager: Tom Lyons	12/16/03 15:31

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3120431 - EPA 3550 Fuels										
Blank (3120431-BLK1)				Prepared: 12/11/03 Analyzed: 12/12/03						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	*4.60*		"	*4.80*		*95.8*	*50-150*			
LCS (3120431-BS1)				Prepared: 12/11/03 Analyzed: 12/12/03						
Diesel Range Organics	111	25.0	mg/kg	125		88.8	50-150			
Heavy Oil Range Hydrocarbons	81.8	50.0	"	75.0		109	50-150			
Surr: 1-Chlorooctadecane	*4.55*		"	*4.80*		*94.8*	*50-150*			
Duplicate (3120431-DUP1)		**Source: P3L0188-01**		Prepared & Analyzed: 12/11/03						
Diesel Range Organics	ND	500	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	1650	1000	"		1550			6.25	50	
Surr: 1-Chlorooctadecane	*0.00*		"	*5.13*		*NR*	*50-150*			*S-01*
Duplicate (3120431-DUP2)		**Source: P3L0188-02**		Prepared: 12/11/03 Analyzed: 12/12/03						
Diesel Range Organics	ND	500	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	2270	1000	"		1980			13.6	50	
Surr: 1-Chlorooctadecane	*0.00*		"	*6.16*		*NR*	*50-150*			*S-01*

North Creek Analytical - Portland

Crystal Jones, Project Manager

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541.383.9310 fax 541.382.7588

Conoco Phillips - Portland	Project: n/a	
5528 NW Doane St	Project Number: Tank 2916	**Reported:**
Portland, OR 97210	Project Manager: Tom Lyons	12/16/03 15:31

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3120423 - Dry Weight										
Duplicate (3120423-DUP1)		**Source: P3L0187-16**		Prepared: 12/10/03 Analyzed: 12/11/03						
% Solids	75.5	1.00% by Weight			75.8			0.397	20	
Duplicate (3120423-DUP2)		**Source: P3L0187-17**		Prepared: 12/10/03 Analyzed: 12/11/03						
% Solids	78.4	1.00% by Weight			78.4			0.00	20	

North Creek Analytical - Portland

Crystal Jones, Project Manager

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Conoco Phillips - Portland	Project: n/a	
5528 NW Doane St	Project Number: Tank 2916	**Reported:**
Portland, OR 97210	Project Manager: Tom Lyons	12/16/03 15:31

Notes and Definitions

Q-01	The spike recovery, and/or RPD, for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
Q-03	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-09	Surrogate recovery is outside control limits due to matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

North Creek Analytical - Portland

Crystal Jones, Project Manager

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Consultants, Inc.

Solving environment-related business problems worldwide

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Tigard, Oregon 97223 USA

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Fax 503.639.7619

LETTER OF TRANSMITTAL

To:	Mr. Eric DeBerry	**From:**	R. Scott Miller
Company:	Industrial Source Control Division Water Pollution Control 6543 N. Burlington Avenue Portland, OR 97203-5452	**Date:**	July 30, 2004
Re:	Discharge Monitoring Report July 2004 Tosco-Chevron Remediation Site	**Project No.**	PTWB-05K-2.0001 Permit No. 500.015

Mr. DeBerry:

Water samples were collected by a representative of Delta Environmental Consultants, Inc. on July 12, 2004. Samples (Grab) were collected by discharging water from sample ports on the process piping directly into laboratory prepared containers. The sample containers were sealed, labeled, placed in a cooler with ice, and transported to the project laboratory. The effluent samples were analyzed for HEM Oil and Grease (EPA Method 1664) and benzene, toluene, ethylbenzene, and xylene (BTEX) (EPA Method 8021B). Laboratory analysis was performed by North Creek Analytical (NCA) in Beaverton, Oregon. A copy of the laboratory analytical reports is included.

The monitoring was conducted in accordance with the industrial wastewater discharge Permit No. 500.015. The discharge monitoring report (DMR) is being submitted as the self-monitoring report and is included. All parameters monitored were within the limits listed in the facility's discharge permit.

If you have any questions regarding the enclosed DMR, please feel free to contact me at (503) 639-8098. Thank you.

R. Scott Miller
Delta Environmental Consultants, Inc.

cc: Martin Cramer, Philips Petroleum Company

A member of:
Inogen Environmental Alliance

CITY OF PORTLAND
INDUSTRIAL WASTEWATER DISCHARGE
SELF-MONITORING REPORT

INDUSTRY NAME: Tosco-Chevron Remediation Site

PERMIT NUMBER: 500.015

REPORT DUE DATE: August 15, 2004

SAMPLING PERIOD: July 2004

For Industrial Source Control Division Use Only
Date Postmarked/Received: Date Entered:
Entered By:
Comments:

SAMPLE DATE	POINT OF COMPLIANCE	SAMPLE TYPE
07/12/04	1A	GRAB

PARAMETER	ANALYSIS METHOD	REPORTED CONCENTRATION		MDL	LIMITS DAILY	LIMITS MONTHLY	COMMENTS
HEM Oil & Grease (Total)[1]	EPA 1664	30.7	mg/L	5.00	N/A	N/A	
HEM Oil and Grease (Non-Polar)	APHA/EPA	14.1	mg/L	5.00	110 mg/L	N/A	Not analyzed
HEM Oil and Grease (Polar)	APHA/EPA	16.6	mg/L	5.00		N/A	Not analyzed
pH	Field Meter	6.8	SU		5.0 - 11.5	N/A	
BTEX	EPA 8021B	0.009044	mg/L	0.0005	0.75 mg/L		
Totalizer Reading	Field	4,322,728	gal		N/A	N/A	

1. If the value of HEM Oil and Grease Total is greater than 110 mg/L, then the Permittee shall analyze the sample for the HEM Oil and Grease Non-Polar constituent.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: 7/30/04

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BY:

Delta Environmental Consultants - Tigard	Project: Tosco #0608, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: PTWP-05N	**Reported:**
Tigard, OR 97223	Project Manager: Ruth Ha	07/19/04 16:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Post	P4G0390-01	Water	07/12/04 15:50	07/13/04 15:45

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Crystal Jones, Project Manager

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Delta Environmental Consultants - Tigard	Project: Tosco #0608, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: PTWP-05N	**Reported:**
Tigard, OR 97223	Project Manager: Ruth Ha	07/19/04 16:55

BTEX per EPA Method 8021B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post (P4G0390-01) Water					Sampled: 07/12/04 Received: 07/13/04				
Benzene	**0.594**	0.500	ug/l	1	EPA 8021B	07/17/04	07/17/04	4070689	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.36**	0.500	"	"	"	"	"	"	
Xylenes (total)	**7.09**	1.00	"	"	"	"	"	"	
Surr: 4-BFB (PID)	*105 %*	*70-130*							

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Delta Environmental Consultants - Tigard	Project: Tosco #0608, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: PTWP-05N	**Reported:**
Tigard, OR 97223	Project Manager: Ruth Ha	07/19/04 16:55

Oil and Grease Analysis per EPA Method 1664

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Post (P4G0390-01) Water					Sampled: 07/12/04 Received: 07/13/04				
Oil & Grease	**30.7**	5.00	mg/l	1	EPA 1664	07/14/04	07/15/04	4070532	
Oil & Grease (non-polar)	**14.1**	5.00	"	"	"	"	"	"	
Oil & Grease (polar)	**16.6**	5.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Crystal Jones, Project Manager

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Delta Environmental Consultants - Tigard	Project: Tosco #0608, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: PTWP-05N	**Reported:**
Tigard, OR 97223	Project Manager: Ruth Ha	07/19/04 16:55

BTEX per EPA Method 8021B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4070689 - EPA 5030B										
Blank (4070689-BLK1)				Prepared & Analyzed: 07/17/04						
Benzene	ND	0.500	ug/l							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surr: 4-BFB (PID)	*58.0*		"	*50.0*		*116*	*70-130*			
LCS (4070689-BS1)				Prepared & Analyzed: 07/17/04						
Benzene	19.7	0.500	ug/l	20.0		98.5	70-130			
Toluene	20.9	0.500	"	20.0		104	76-129			
Ethylbenzene	20.7	0.500	"	20.0		104	82-130			
Xylenes (total)	62.4	1.00	"	60.0		104	76-130			
Surr: 4-BFB (PID)	*55.7*		"	*50.0*		*111*	*70-130*			
LCS Dup (4070689-BSD1)				Prepared & Analyzed: 07/17/04						
Benzene	19.8	0.500	ug/l	20.0		99.0	70-130	0.506	20	
Toluene	20.9	0.500	"	20.0		104	76-129	0.00	20	
Ethylbenzene	20.7	0.500	"	20.0		104	82-130	0.00	20	
Xylenes (total)	63.6	1.00	"	60.0		106	76-130	1.90	20	
Surr: 4-BFB (PID)	*56.6*		"	*50.0*		*113*	*70-130*			
Matrix Spike (4070689-MS1)	**Source: P4G0364-01**			Prepared & Analyzed: 07/17/04						
Benzene	19.8	0.500	ug/l	20.0	ND	99.0	65-144			
Toluene	20.5	0.500	"	20.0	ND	102	68-139			
Ethylbenzene	19.7	0.500	"	20.0	ND	98.5	69-144			
Xylenes (total)	53.2	1.00	"	60.0	ND	88.7	60-144			
Surr: 4-BFB (PID)	*55.4*		"	*50.0*		*111*	*70-130*			

North Creek Analytical - Portland

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Crystal Jones, Project Manager

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Delta Environmental Consultants - Tigard	Project: Tosco #0608, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: PTWP-05N	**Reported:**
Tigard, OR 97223	Project Manager: Ruth Ha	07/19/04 16:55

Oil and Grease Analysis per EPA Method 1664 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4070532 - EPA 1664										
Blank (4070532-BLK1)				Prepared: 07/14/04 Analyzed: 07/15/04						
Oil & Grease	ND	5.00	mg/l							
Oil & Grease (non-polar)	ND	5.00	"							
Oil & Grease (polar)	ND	5.00	"							
LCS (4070532-BS1)				Prepared: 07/14/04 Analyzed: 07/15/04						
Oil & Grease	76.8	5.00	mg/l	80.0		96.0	79-114			
Oil & Grease (non-polar)	29.4	5.00	"	40.0		73.5	66-114			

North Creek Analytical - Portland

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Delta Environmental Consultants - Tigard	Project: Tosco #0608, Portland, OR	
7150 SW Hampton - Suite 220	Project Number: PTWP-05N	**Reported:**
Tigard, OR 97223	Project Manager: Ruth Ha	07/19/04 16:55

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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P460390

TOSCO CHAIN OF CUSTODY REPORT

TOSCO INFORMATION

Facility Number: 0608
Site Address: 5528 NW Deane Ave
City, State, ZIP: Portland, OR 97210
Project/AWO Code
Tosco Manager:
FACILITY TYPE: (check one) ☐ BP/Ⓚ ☐ Terminal/Bulk Plant
☐ Brown Bear ☐ Former 76 Site ☐ Other

CONSULTANT INFORMATION

Firm: Delta Project# PTWP-05N
Address: Tigard, OR
Phone: 639 8088 Fax:
Project Manager: R. Ha E-mail:
Sample Collection by: JMW

Quality Assurance Data Level: A B
A: Standard Summary
B: Standard + Chromatograms

Laboratory Turnaround Days: 10 ~~5~~ 3 2 1
10 Day - Standard

○ OR ○ WA ○ AK ○ NW Series ○ ID

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CON-TAINERS	TPH-HCID	TPH-Gas	BTEX EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-Diesel-Ext. w/SG Cleanup	Halogen. Volatiles EPA 8021	Pesticides/PCBs or PCBs Only	GC/MS Volatiles EPA 8260	GC/MS SemiVols. EPA 8270	PAH's: 8270 SIM or 8310	Lead: Total or Dissolved	TCLP or RCRA Metals (8)	Oil & Grease	EPA/APHA 1604				NCA SAMPLE NUMBER
1. Post	7/12/04 1550	W	4			X												X					
2.																							
3.																							
4.																							
5.																							
6.																							
7.																							
8.																							
9.																							
10.																							

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.	[signature]	Delta		[signature]	NCA	7/13/04 @ 11:58
2.	[signature]	NCA	7/13/04 15:45	[signature]	NCA	7/13/04 1545
3.						

Comments:
pH = 6.8
4,322,728
1.4

Page 1 of 1
Rev. Tos3.3.2/99

Comments:

Distribution: White - Laboratory Yellow - Consultant Photocopy - Tosco

COP0015922

ATTACHMENT A

EXCAVATION RISK ASSESSMENT FORM GPL-400

Appendix E: Excavation Risk Assessment Form GPL-400

ConocoPhillips

Transportation - Pipelines and Terminals

Excavation Risk Assessment

(For Use With MPR-4010.)

Doc. No.: **GPL-400**
Rev.: **1**

(See MPR-2828 for Instructions for Completing Form GPL-400 - Excavation Risk Assessment Form.)

FACILITY/PIPELINE: _____ MAP NO./SHEET NO.: _____ REFERENCE STATION: _____

COMPLETED BY: _____ DATE: _____

INSTRUCTIONS: CIRCLE OR CHECK THE APPLICABLE BLOCK FOR EACH RISK FACTOR.

RISK FACTOR	RISK LEVEL			
	LOW	MODERATE	HIGH	VERY HIGH
Population Density (Within 220 yds of Excavation)	Less Than 10 Dwellings or Individual Units	10 to 46 Dwellings or Individual Units		More than 46 Dwellings or Individual Units, Public Areas, School, Church, Hotel, etc.
Excavation Protection System	Slope/Bench No PE Required Excavation < 10 ft Deep	Shore/Shield No PE Required Excavation < 10 ft Deep	Shore/Shield PE Required Excavation < 10 ft Deep	Excavation Greater Than 10 ft Deep
Road/Highway Within 100 ft of Excavation (Monitor Traffic Density During Excavation/Lowering)	Two Lanes	Four Lanes	More Than 4 Lanes or Controlled Access Interstate	
Proximity to Environmentally Sensitive Area (Not Applicable to Gas or HVL Lines)		Release Could Reach Water or Superfund Site	Release Would Reach Water or Superfund Site	
Product in Line(s)	Hydrocarbon Vapor, Gasoline, Distillate, or Crude Oil	Gas Transmission Line or Sour/HVL[1]		
Equipment Operator	Experienced Contact Operator	Operator Qualifications Unknown		
Excavating Equipment Width (Blade or Bucket Width)		Distance Between Adjacent Lines Is Less Than 2½ Times Blade or Bucket Width		
Visibility	Daylight and Clear	Low Light or Obscured by Darkness, Rain, Snow, Fog, Dust Storm, etc.		
Location of Other Lines or Utilities	All Location(s) and Depth(s) Known	Location and/or Depth Unknown		
Other Lines or Utilities That Will Impede Excavation	None or Non-hazardous	Hazardous or Fiber Optic		
Bends or Fittings (Stopples, Tees, TORs, etc.)	None or Location Known	Known to Exist but Location Unknown		
Pipe Integrity (Weld Quality, Ductility, etc.)	Good	Suspect/Poor		
Line Operation	Down & Blocked	Operating		
Aboveground Obstructions (Within Swing Area)		Structures or Overhead Utilities		
Railroads (Within 220 yds of Excavation)		Train(s) Scheduled During Excavation or Schedule Unknown		
TOTAL INDICATED IN EACH RISK LEVEL				

NOTE: BLASTING IS A SPECIAL CASE OF EXCAVATION (REFER TO MPR-4009)

REVIEW LEVEL REQUIRED:

ALL RISK FACTORS LOW. COMPETENT, TRAINED EMPLOYEE OR AUTHORIZED REPRESENTATIVE.
ONE OR MORE RISK FACTORS "MODERATE": SUPERVISOR OR DESIGNATED ALTERNATE.

* FOUR OF MORE RISK FACTORS "MODERATE": NEXT LEVEL OF MANAGEMENT.
* ONE OR MORE RISK FACTORS "HIGH": DISTRICT DIRECTOR OR DESIGNATED ALTERNATE.
* ONE OR MORE RISK FACTORS "VERY HIGH": SAFETY AND TECHNICAL SERVICES MANAGER OR DESIGNATED ALTERNATES.

(*) DENOTES REQUIREMENT FOR WRITTEN EXCAVATION PLAN.

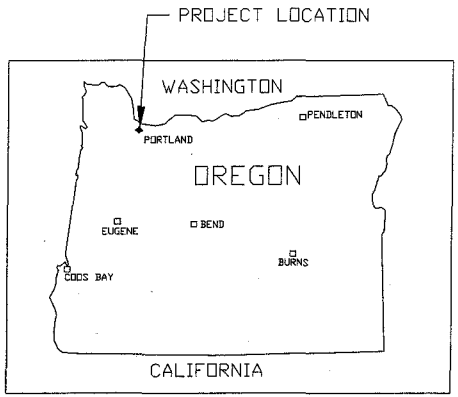
[1] Products are considered sour if the PEL for H_2S is 10ppm or greater.

Distribution: (When you have filled out this document:)

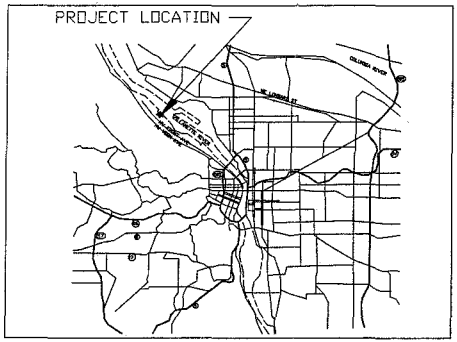
(End of Document)

ATTACHMENT B

CUTOFF WALL CONSTRUCTION DRAWINGS



VICINITY MAP
NOT TO SCALE



SITE MAP
NOT TO SCALE

INDEX OF DRAWINGS

DRAWING	SHEET
TITLE SHEET	1
PROJECT NOTES	2
PROJECT LOCATION MAP	3
EXISTING SITE FEATURES	4
SITE PLAN	5
SHEET PILE CROSS-SECTON ALONG ALIGNMENT OF CUTOFF WALL	6
CUTOFF WALL COLLECTION TRENCH DETAILS	7
CUTOFF WALL COLLECTION TRENCH DETAILS	8
GRADING PLAN	9
EROSION CONTROL PLAN	10

REGISTERED PROFESSIONAL ENGINEER
17939PE
OREGON
JULY 25, 1986
BRAD J. BERGGREN
EXPIRES: 12/31/05

CAUTION NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY IN ADVANCE BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

CONSTRUCTION DRAWINGS FOR

CHEVRON AND CONOCO PHILLIPS WILLBRIDGE TERMINAL GROUNDWATER CUTOFF WALL

PORTLAND, OREGON

NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Well design update, February 2003	
3		Well design update, March 2003	
4	8/22/03	Well design change, August 2003	
5	10/23/03	Well design change, October 2003	

REVISION

SHEET(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

DESIGNED BY	BJB	DATE APPD.
DRAWN BY	CCA	PROGRAM MGR.
CHECKED BY		CONST. MGR.
DESIGN MGR.		

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31580 SW CHAMOMEAU DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)694-9168

TITLE SHEET
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

1/4 SECTION	2423
JOB NO.	02-299
SHEET NO.	1 OF 10

COP0015926

GENERAL PROJECT NOTES

1) Contractor shall notify Bureau of Environmental Services at (503) 823-7931 two (2) business days prior to commencement of work.

2) All construction shall conform to City of Portland standard construction specifications, as revised in 1998. Contractor and/or subcontractor shall have a minimum of one set of approved plans and City of Portland standard construction specifications on the job site at all times during construction.

3) Office of Planning and Development Review, Approvals, and Permits required for privately maintained structures constructed. All work approved under OPDR permits shall be privately owned and maintained.

4) Attention Excavators: Oregon law requires you to follow rules adopted by Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of those rules from the Center by calling (503)232-1987. If you have any questions about the rules, you may contact the Center. You must notify the Center at least two (2) business days, but not more than ten (10) business days, before commencing an excavation. Call 503-246-6699.

5) Slope stability evaluation to be completed prior to any disturbance of existing slope on Chevron property.

6) Excavated trench spoil material shall be disposed of at a proper landfill, or applicant shall obtain a fill permit from the Office of Planning and Development Review before being disposed of on-site. A copy of the grading permit and plan should also be provided to the Bureau of Environmental Services for construction inspection.

7) Site erosion plan to be approved and controls in place prior to construction. All work under this permit will require site erosion control in compliance with all provisions of the City Title 10.

ADDITIONAL PROJECT NOTES

SHEET PILE WALL

1) Sheet Piling to be Hoesch H-1700 Steel Sheet Piling or equivalent, as approved by Engineer and Client.

2) Sheet Piling joints to include waterstop seals. Waterstop seals shall be ADEKA ULTRA SEAL A-50 or equivalent as approved by Engineer and Client.

3) Sheet Piling and waterstop seals to be installed consistent with manufacturers' recommendations.

COLLECTION TRENCH

1) Trench sand backfill shall be medium to coarse sand, moderately graded. The sand shall be free of silt, clay, loam, friable or soluble materials, or organic matter, conforming to the following gradation (or other as approved by Engineer and Client):

Sieve Size	Percent Passing
No. 4	100
No. 10	10 to 100
No. 40	0 to 10
No. 200	0

2) Geotextile Fabric separating sand and rip rap shall be non-woven fabric that complies with the following properties (unless otherwise approved by Engineer and Client):

Test	Method	Value
Grab Tensile Strength (N)	ASTM D4632	1155
Burst Strength (KPa)	ASTM D3786 Mod.	3000
Puncture Strength (N)	ASTM D4833 or ASTM D3787 Mod.	490
Apparent Opening Size (uM)	ASTM D4751	212
Ultraviolet Stability	ASTM D4355 @500 hrs	70% Strength retained

REGISTERED PROFESSIONAL ENGINEER 17899PE Brad J. Berggren OREGON JULY 25, 1995 BRAD J. BERGGREN

EXPIRES: 12/31/05

NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Wall design update, February 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
4	10/23/03	Wall design change, October 2003	

REVISION

XREF(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CONNECTED BY: CHECKED BY:
FINAL MAP DATA

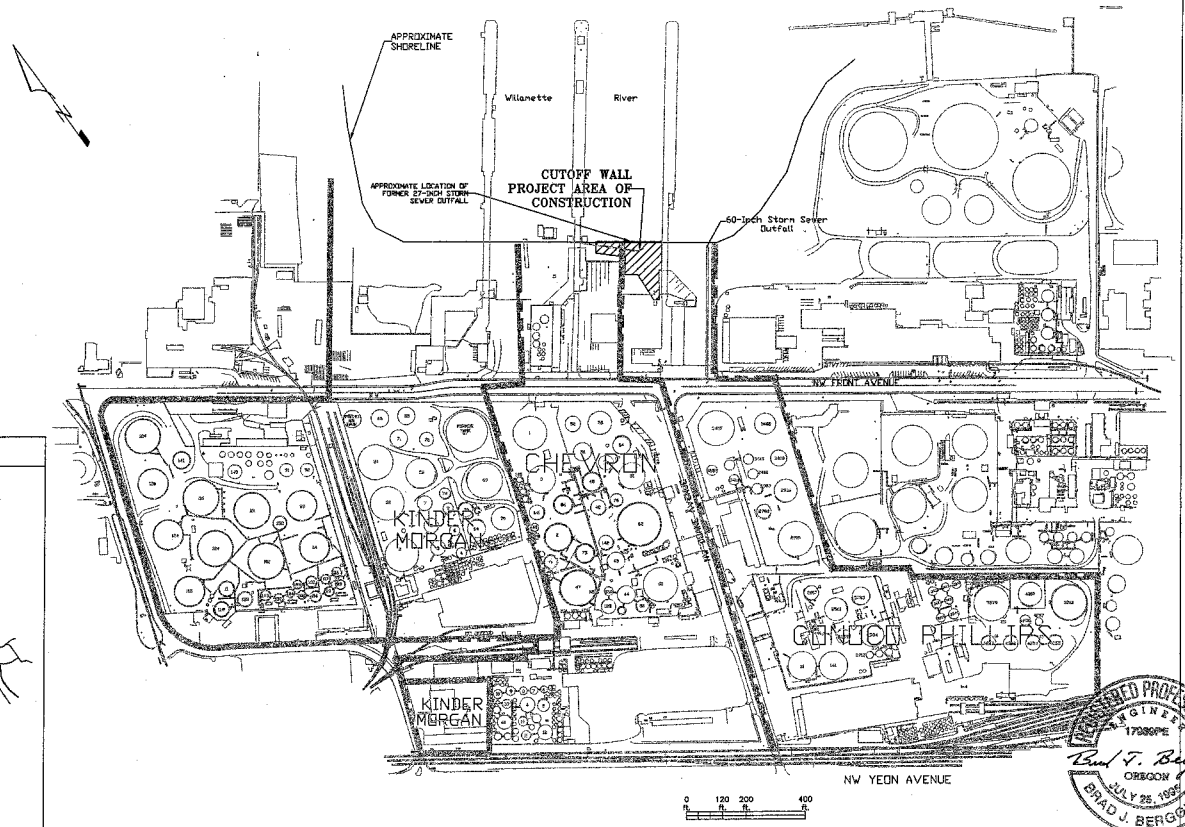
DESIGNED BY	BJB
DRAWN BY	CCA
CHECKED BY	
DESIGN MGR.	
PROGRAM MGR.	
CONST. MGR.	
DATE APPD.	

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31890 SW CHAMBERLAIN DR. SUITE 101
WILSONVILLE, OREGON 97070 (503)694-8600

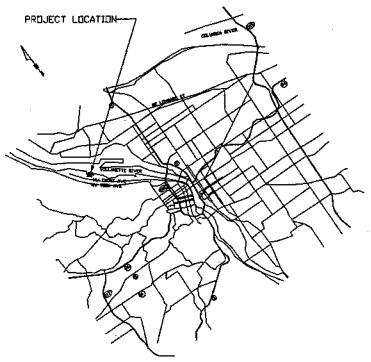
PROJECT NOTES
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

T/4 SECTION	2423
JOB NO.	02-299
SHEET NO.	2 of 10

COP0015927



SITE LOCATION INSERT



NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
17089PE
OREGON
JULY 25, 1995
BRAD J. BERGGREN

EXPIRES: 12/31/05

NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Well design update, February, 2003	
3		Well design update, March 2003	
4	8/22/03	Well design change, August 2003	
5	10/23/03	Well design change, October 2003	

REVISION

XREF(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY
PROJECT COMPLETED
MAP CORRECTED BY ____ CHECKED BY ____
FINAL MAP DATA

DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY
DESIGN MGR.

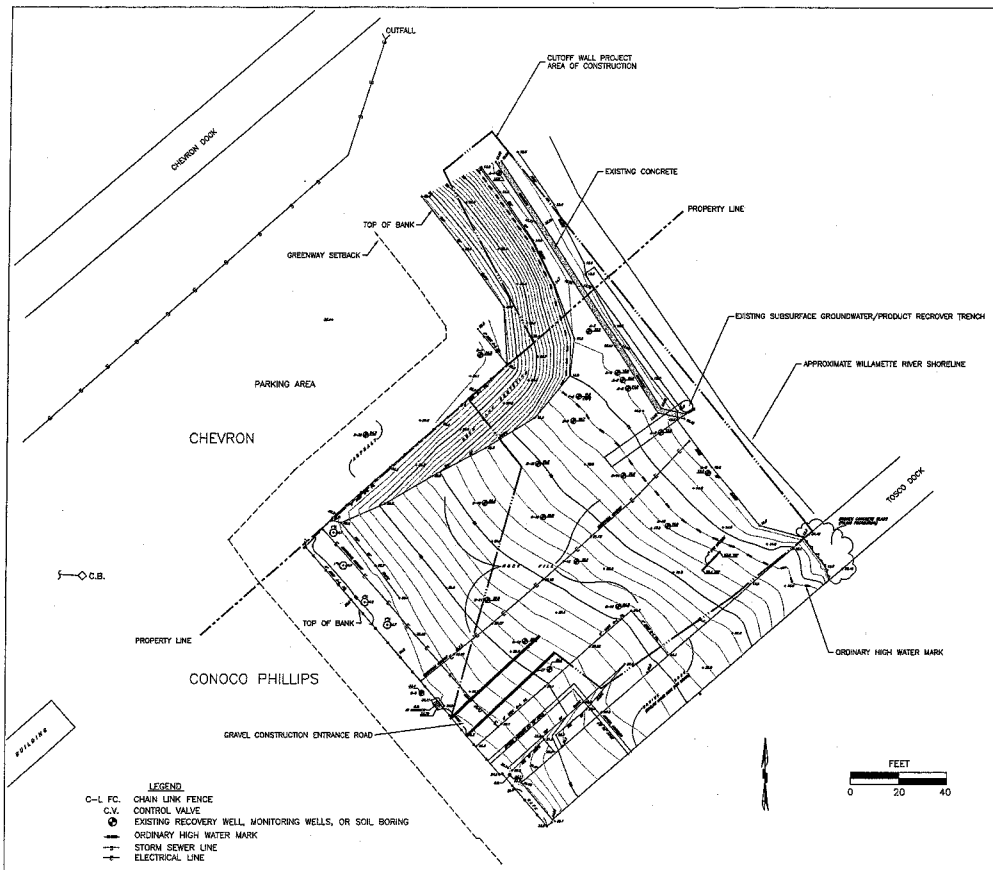
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers + Land Surveyors + Environmental Scientists
31960 SW CHARBONEAU DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)694-9860

PROJECT LOCATION MAP
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front & NW Doane Avenue

PROJECT NO. 2423
JOB NO. 02-158
SHEET NO. 3 of 10

COP0015928



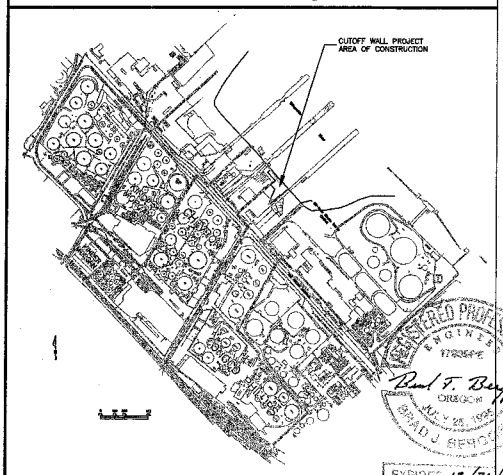
LEGEND

C-L FC. CHAIN LINK FENCE
C.V. CONTROL VALVE
EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
ORDINARY HIGH WATER MARK
STORM SEWER LINE
ELECTRICAL LINE

NOTES

1. BENCH MARK: CITY OF PORTLAND B.M. NO 2528. ELEVATION 34.64
2. CONTOURS ARE AT ONE-FOOT INTERVALS AND ARE COMPUTER GENERATED.
3. CONTOURS MAP ADAPTED FROM FIGURE PROVIDED BY CHASE, JONES, AND ASSOCIATES DATED MAY 29, 2002.
4. UNDERGROUND UTILITIES ARE SUBJECT TO ACTUAL FIELD LOCATION.
5. ALL UTILITIES MAY NOT BE SHOWN.
6. 4% OF SITE COVERED BY ROOFED STRUCTURES.
7. NO ACCESSORY BUILDINGS LOCATED ON-SITE.
8. 0% OF SITE CURRENTLY LANDSCAPED.
9. SITE PART OF TOSCO OIL COMPANY SHIPPING / RECEIVING DOCK.
10. ORDINARY HIGH WATER MARK IS 16 FT ABOVE MSL.
11. NO TREES IN AREAS TO BE DISTURBED.

SITE LOCATION INSERT



REGISTERED PROFESSIONAL ENGINEER
17836PE
OREGON
JULY 25, 1995
BRAD J. SEROCKE
EXPIRES 12/31/05

NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	
6	8/26/04	Design change, August 2004	

REVISION

XREF(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

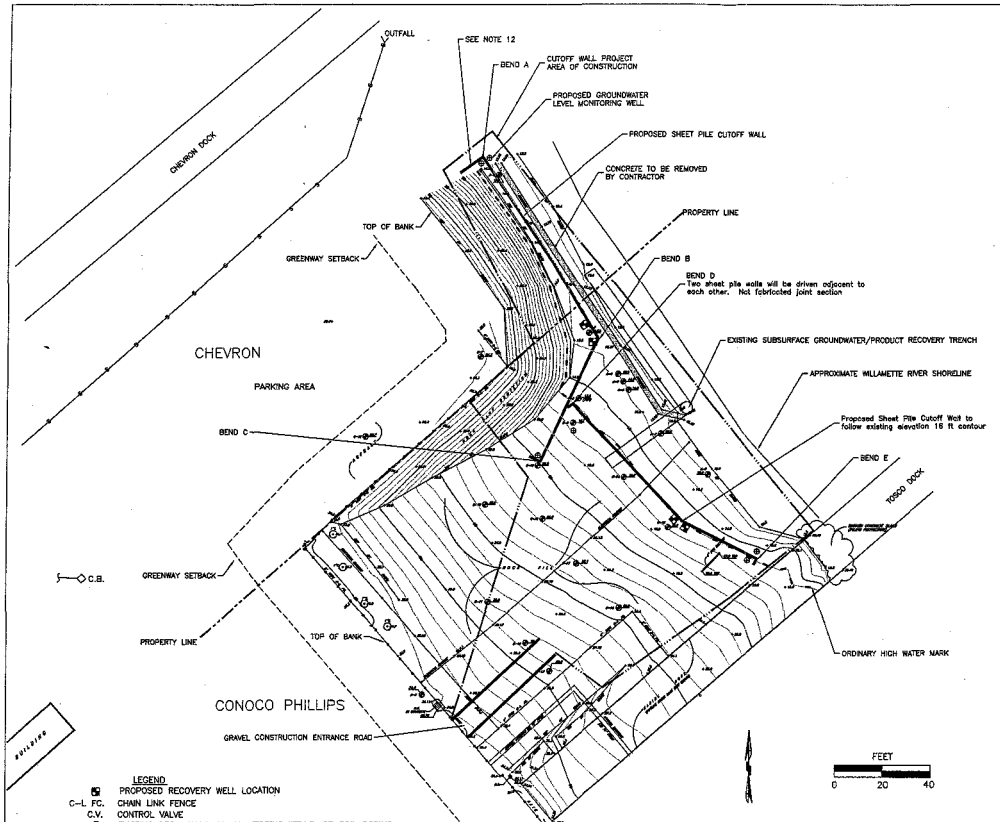
DESIGNED BY BJB	DATE APPD.
DRAWN BY CCA	PROGRAM MGR.
CHECKED BY	CONST. MGR.
DESIGN MGR.	

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
30366 SW CHARBONEAU RD, SUITE 101
WILSONVILLE, OREGON 97378 (503)624-6960

EXISTING SITE FEATURES
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

1/4 SECTION 2423
JOB NO. 02-158
SHEET NO. 4 OF 10

COP0015929



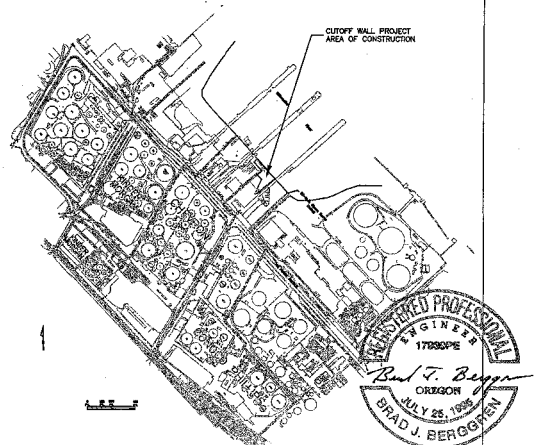
LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC. CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE
- PROPOSED GROUNDWATER LEVEL MONITORING WELL

NOTES

1. BENCH MARK: CITY OF PORTLAND B.M. NO 2528. ELEVATION 34.64
2. CONTOURS ARE AT ONE-FOOT INTERVALS AND ARE COMPUTER GENERATED.
3. CONTOURS MAP ADAPTED FROM FIGURE PROVIDED BY CHASE, JONES, AND ASSOCIATES DATED MAY 29, 2002.
4. UNDERGROUND UTILITIES ARE SUBJECT TO ACTUAL FIELD LOCATION.
5. ALL UTILITIES MAY NOT BE SHOWN.
6. 4% OF SITE COVERED BY ROOFED STRUCTURES.
7. NO ACCESSORY BUILDINGS LOCATED ON-SITE.
8. 0% OF SITE CURRENTLY LANDSCAPED.
9. SITE PART OF TOSCO OIL COMPANY SHIPPING / RECEIVING DOCK.
10. ORDINARY HIGH WATER MARK IS 16 FT ABOVE MSL.
11. NO TREES IN AREAS TO BE DISTURBED.
12. SLOPE STABILITY EVALUATION TO BE COMPLETED PRIOR TO ANY DISTURBANCE OF EXISTING SLOPE ON CHEVRON PROPERTY.

SITE LOCATION INSERT



REGISTERED PROFESSIONAL ENGINEER
17939PE
OREGON
JULY 25, 1995
BRAD J. BERGGREN
EXPIRES: 12/31/05

NO.	DATE	DESCRIPTION	APPD.
2	2/05/03	Well design update, February, 2003	
3		Well design update, March, 2003	
4	8/27/03	Well design change, August 2003	
5	10/23/03	Well design change, October 2003	
6	8/26/04	Design change, August 2004	

REVISION

VERIFIED USED	
ROTATION ANGLE	
CONSTRUCTED BY	
PROJECT COMPLETED	
MAP CORRECTED BY	CHECKED BY
FINAL MAP DATA	

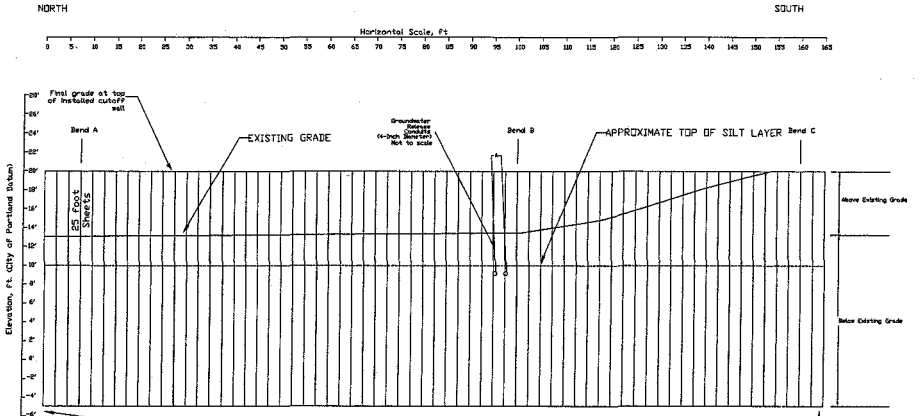
DESIGNED BY	BJB
DRAWN BY	CEA
CHECKED BY	
DESIGN MGR.	
DATE APPD.	
PROGRAM MGR.	
CONST. MGR.	

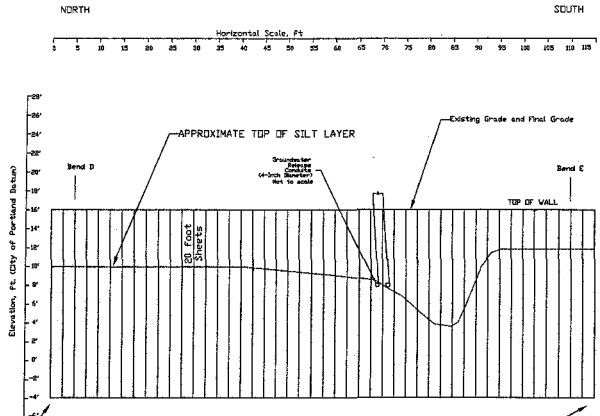
RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
2765 SW CHERRYWOOD DR. SUITE 201
WILSONVILLE, OREGON 97070 (503)694-6960

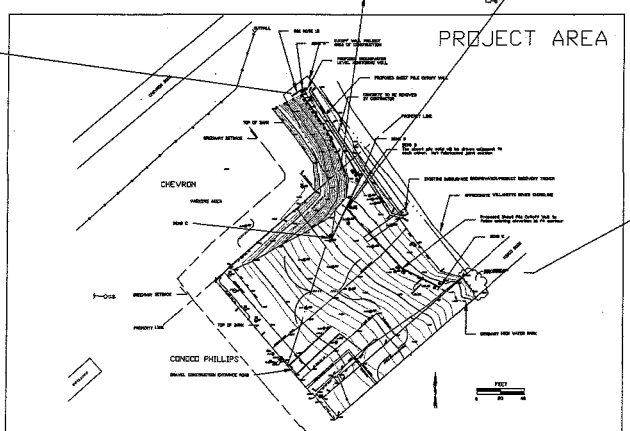
SITE PLAN
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

1/4 SECTION	2423
JOB NO.	02-158
SHEET NO.	5 OF 10

COP0015930







REGISTERED PROFESSIONAL ENGINEER
17999PE
OREGON
JULY 25, 1995
BRAD J. BERGGREN
EXPIRES: 12/31/05

NO.	DATE	DESCRIPTION	APPD.
2	2/25/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	
6	8/28/04	Wall design change, August 2004	

REVISION

AREA(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

DESIGNED BY	BJB
DRAWN BY	OCA
CHECKED BY	
DESIGN MGR.	
DATE APPD.	
PROGRAM MGR.	
CONST. MGR.	

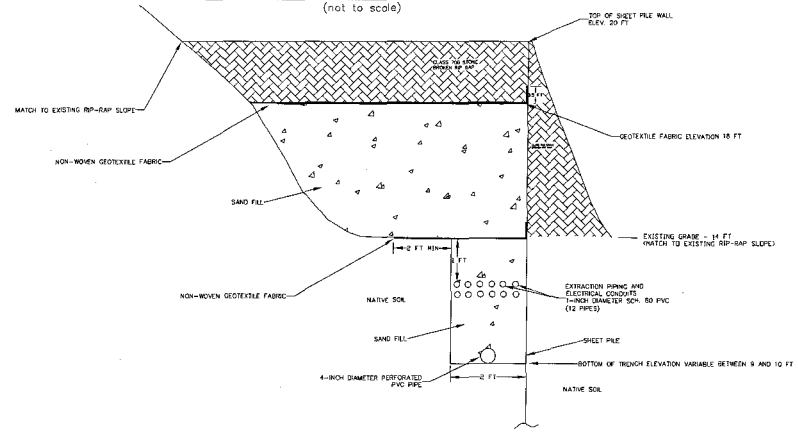
RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31950 SW CHARBONEAU DR, SUITE 101
WILSONVILLE, OREGON 97070 (503)694-9595

SHEET PILE CROSS SECTION
ALONG ALIGNMENT OF CUTOFF WALL
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane

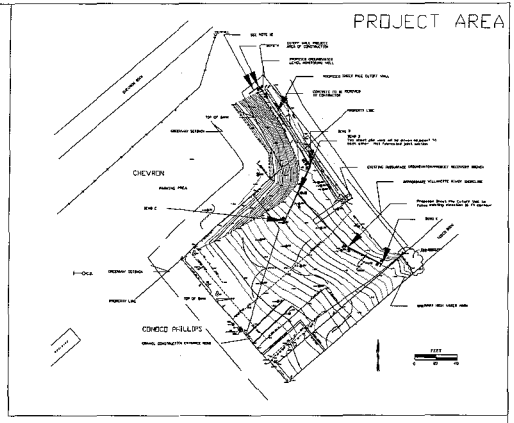
1/4 SECTION	2423
JOB NO.	02-158
SHEET NO.	6 of 10

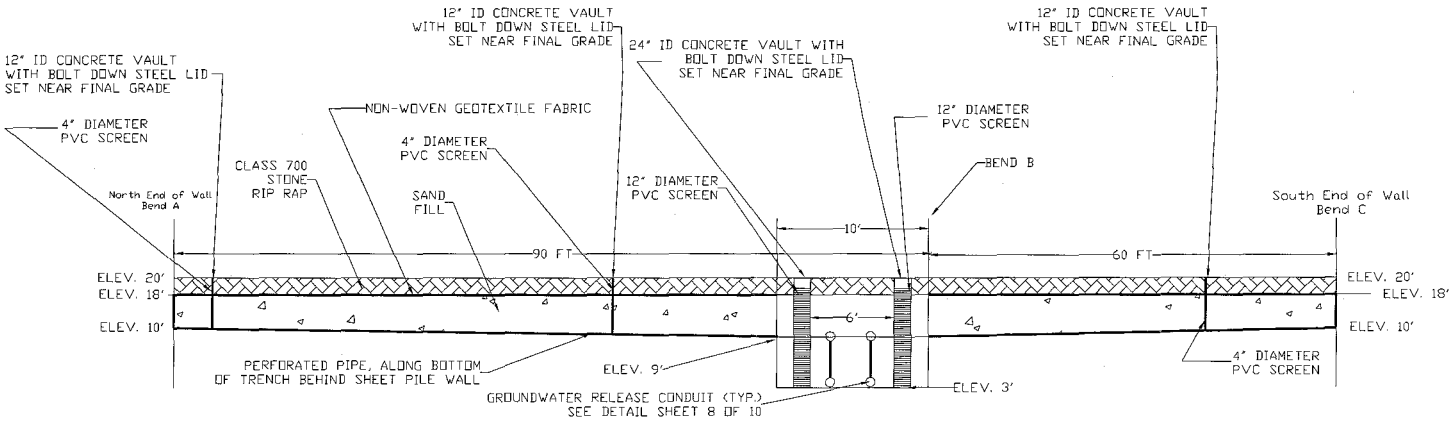
COP0015931

TYPICAL TRENCH CROSS-SECTION DETAIL – NORTH OF BEND B
(not to scale)



PROJECT AREA





NO.	DATE	REVISION	APPD.
2	2/25/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	
6	08/26/04	Design change, August 2004	

KREF(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

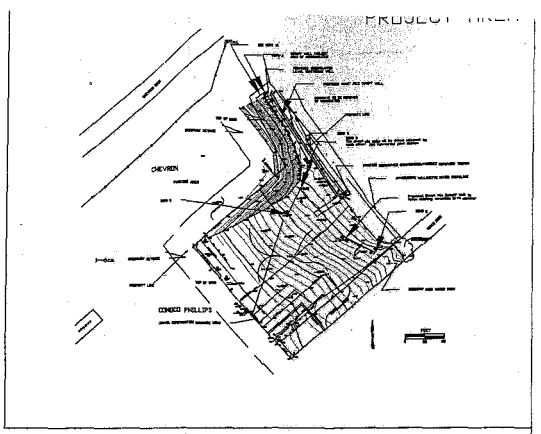
DESIGNED BY	BJB	DATE APPD.
DRAWN BY	CCA	PROGRAM MGR.
CHECKED BY		CONST. MGR.
DESIGN MGR.		

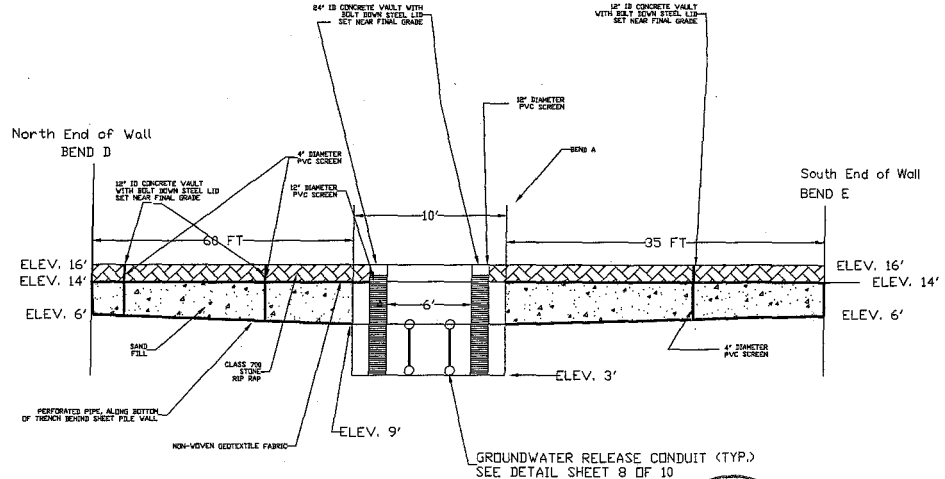
RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
2160 SW CHAMEKEMAN DR., SUITE 101
WILSONVILLE, OREGON 97070 (503)694-6960

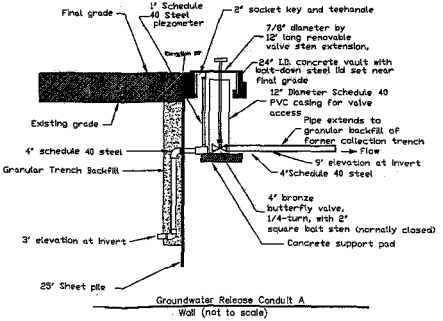
CUTOFF WALL COLLECTION TRENCH DETAILS
WILLBRIDGE FORMER 27-INCH
STORM SEWER AREA
NW Front Ave & NW Doane

1/4 SECTION	2423
JOB NO.	02-158
SHEET NO.	7 of 10

COP0015932







NO.	DATE	REVISION	APPD.
2	5/23/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	8/26/04	Design change, August 2004	

VANE(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

DESIGNED BY	BJB
DRAWN BY	CCA
CHECKED BY	
DESIGN MGR.	
DATE APPD.	
PROGRAM MGR.	
CONST. MGR.	

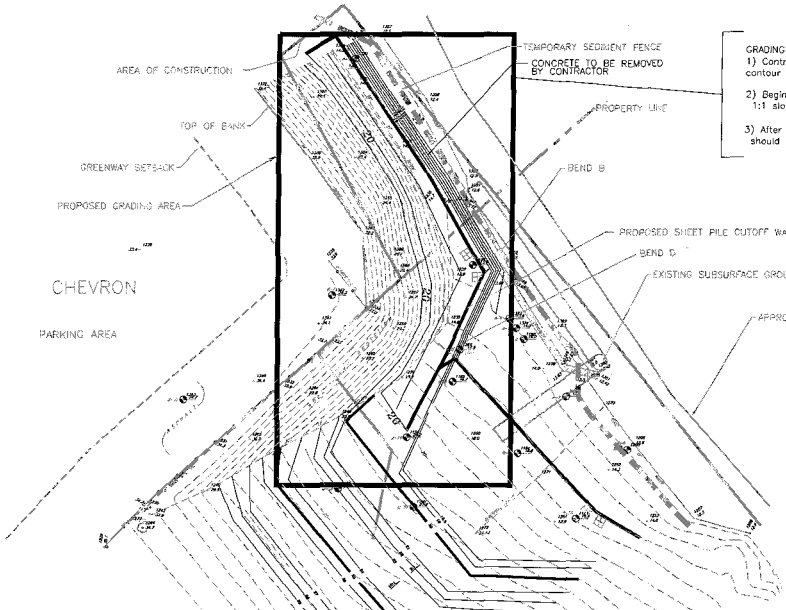
REGISTERED PROFESSIONAL ENGINEER
17939PE
OREGON
JULY 25, 1995
BRAD J. BERGGREN
EXPIRES: 12/31/05

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31680 SW CHANGEWATER DR., SUITE 101
WILSONVILLE, OREGON 97070 (503)694-9560

CUTOFF WALL COLLECTION TRENCH DETAILS
WILLBRIDGE FORMER 27-INCH
STORM SEWER AREA
NW Front Ave & NW Doane

1/4 SECTION	2423
JOB NO.	02-158
SHEET NO.	8 of 10

COP0015933



GRADING NOTES

1) Contractor to backfill behind sheetpile wall between Elev.=20.0 contour and top-of-wall (Elev.=20.0) at 0% slope with onsite riprap.

2) Beginning at top of sheetpile wall (Elev.=20.0), Contractor to construct 1:1 slope toward river to Elev.=14.0 using onsite riprap.

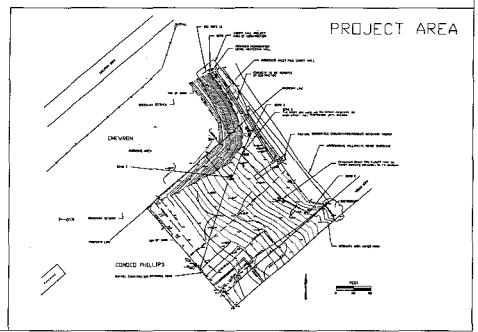
3) After construction activities are completed, no section of sheet pile wall should be above level of riprap.

LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC. CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE

FEET

0 30 60



PRISMOIDAL VOLUME RESULTS

ORIGINAL SURFACE MODEL:	EXISTING
FINAL SURFACE MODEL:	DESIGN
CUT COMPACTION FACTOR:	0.00 %
FILL COMPACTION FACTOR:	0.00 %
RAWCUT VOLUME:	285.00 CU YD
COMPACTED CUT VOLUME:	0.00 CU YD
TOTAL CUT VOLUME:	285.00 CU YD
RAW FILL VOLUME:	285.00 CU YD
COMPACTED FILL VOLUME:	0.00 CU YD
TOTAL FILL VOLUME:	285.00 CU YD

NO.	DATE	DESCRIPTION	APPR.
2	2/25/03	Wall design update, February, 2003	
3		Wall design update, March 2003	
4	8/22/03	Wall design change, August 2003	
5	10/23/03	Wall design change, October 2003	
6	08/26/04	Design change, August 2004	
7	09/02/04	Grading Plan modification, September 2004	
8	12/10/04	Grading Plan modification, December 2004	

REVISION

KREF(S) USED:
ROTATION ANGLE:
CONSTRUCTED BY:
PROJECT COMPLETED:
MAP CORRECTED BY: CHECKED BY:
FINAL MAP DATA

DESIGNED BY: BJB
DRAWN BY: CCA
CHECKED BY:
DESIGN MGR.
DATE APPD.
PROGRAM MGR.
CONST. MGR.

RSV ENGINEERING, INC.
Engineers • Land Surveyors • Environmental Scientists
31760 SW CHARBONNEAU DR. SUITE 101
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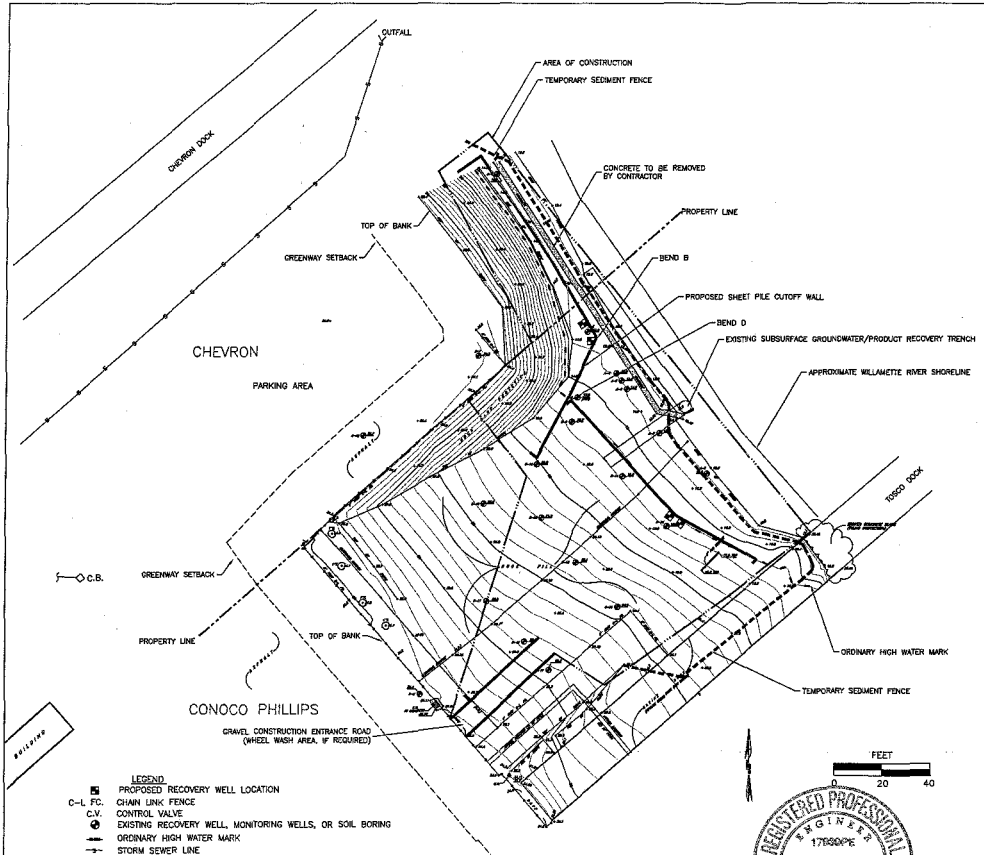
GRADING PLAN
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

1/4 SECTION: 2423
JOB NO.: 02-158
SHEET NO.: 9 of 10

COP0015934



LEGEND

- PROPOSED RECOVERY WELL LOCATION
- C-L FC. CHAIN LINK FENCE
- C.V. CONTROL VALVE
- EXISTING RECOVERY WELL, MONITORING WELLS, OR SOIL BORING
- ORDINARY HIGH WATER MARK
- STORM SEWER LINE

STANDARD NOTES FOR EROSION CONTROL PLANS

A. Approval of this erosion, sediment and pollution control plan (ESPCP) does not constitute an approval of permanent road or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).

B. The implementation of the ESPCP and the construction, maintenance, replacement, and upgrading of these ESPCP facilities is the responsibility of the applicant/contractor until all construction is completed and approved and vegetation/landscaping is established.

C. The boundaries of the clearing limits shown on this plan shall be shown in the field prior to beginning work. During the construction period, no disturbance beyond the flagged clearing limits shall be permitted. The flagging shall be maintained by the applicant/contractor for the duration of construction.

D. The ESPCP facilities shown on this plan must be constructed in conjunction with all clearing and grading activities, and in such a manner as to insure that sediment and sediment laden water do not enter the drainage system, roadways, or violate applicable water standards.

E. The ESPCP facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these ESPCP facilities shall be upgraded as needed for unexpected storm events and to ensure that sediment and sediment-laden water do not leave the site.

F. The ESPCP facilities shall be inspected daily by the applicant/contractor and maintained as necessary to ensure their continued functioning.

G. The ESPCP facilities on inactive sites shall be inspected and maintained a minimum of once a month or within the 24 hours following a storm event.

H. Stabilized construction entryways shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures may be required to insure that all paved areas are kept clean for the duration of the project.

STANDARD NOTES FOR SEDIMENT FENCES

1. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6-inch overlap, and both ends securely fastened to the post, or overlap 2 feet + 2 inch posts and attach as shown on detail sheet 4-24.

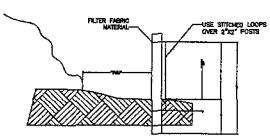
2. The filter fabric fence shall be installed to follow the contours where feasible. The fence posts shall be spaced a maximum of 8 feet apart and driven securely into the ground a minimum of 24 inches.

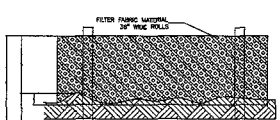
3. The filter fabric shall have a minimum vertical burial of 8 inches. All excavated material from filter fabric fence installation, shall be backfilled and compacted, along the entire disturbed area.

4. Standard or heavy duty filter fabric fence shall have manufacturer attached loops for 2 inch x 2 inch post installation. Attached loops shall be installed on the uphill side of the sloped area.

5. Filter fabric fences shall be removed when they have served their useful purposes, but not before the upslope area has been permanently protected and stabilized.

6. Filter fabric fences shall be inspected by applicant/contractor immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.





TEMPORARY SEDIMENT FENCE DETAIL

NO.	DATE	DESCRIPTION	APP'D
2	2/25/03	Volt design update, February, 2003	
3		Volt design update, March 2003	
4	8/22/03	Volt design change, August 2003	
5	10/23/03	Volt design change, October 2003	
6	08/06/04	Design change, August 2004	

REVISION

VERIFIED USER _____
ROTATION ANGLE _____
CONSTRUCTED BY _____
PROJECT COMPLETED _____
MAP CORRECTED BY _____ CHECKED BY _____
FINAL MAP DATA

	DESIGNED BY	DATE APPR.
	R.J.B	
DRAWN BY		PROGRAM MGR
	CCA	
CHECKED BY		CONST. MGR.
DESIGN MGR.		

REGISTERED PROFESSIONAL ENGINEER
17690PE
OREGON
JULY 28, 1995
BRAD J. BERGGREN
EXPIRES: 12/31/05

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EROSION CONTROL PLAN
PROPOSED CUTOFF WALL
WILLBRIDGE FORMER 27-INCH STORM SEWER AREA
NW Front Ave & NW Doane
PLAN VIEW

LAB SECTION	E423
JOB NO.	02-158
SHEET NO.	10 of 10

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