EMC | Grants Pass * Jacksonville * Medford, OR
GP Office: 1867 Williams Hwy., Suite 216, Grants Pass, OR, 97527
Jville Office: 450 Conestoga Dr., Jacksonville, OR, 97530
Ph: 541-474-9434 * Cell: 541-261-9929 * Fax 541-727-5488
emc@emcengineersscientists.com; http://www.emcengineersscientists.com
- Engineers/Scientists, LLC

January 20, 2023

Oregon Department of Environmental Quality
165 E 7th Ave #100
Eugene, OR 97401

RE: DEQ USTC File No. 20-03-1830
Facility ID No. 3523

DEQ,

After reviewing the information available for the above listed facility located at the address of 3040 N Delta Hwy, Eugene Oregon, 97408 it appears that a No Further Action (NFA) letter has not been issued for this site by the Department of Environmental Quality. The attached, Exhibit A, Oregon DEQ LUST summary page for general site number 20-03-1830 indicates the site status is unassigned.

The Oregon DEQ Memorandum dated May 16, 2011 is attached as Exhibit B. According to this document there were a total of fifteen soil samples collected from the site. The locations of these samples are noted in the Initial (20-Day) Report dated September 22, 2003 that is attached as Exhibit C. Eight soil samples were collected at 2.5 feet below ground surface (bgs) from the pumping islands and piping runs in September 2003 (see Exhibit C page 12). These samples were analyzed for hydrocarbon identification and concentrations of gasoline, diesel and heavy oil were not detected as seen in the laboratory report within Exhibit C on page 10. There were also three soil samples collected from the southern ends of the decommissioned tanks and four soil samples collected from the Northern ends at a depth of 16.5 feet bgs (see Exhibit C page 9). The southern samples were analyzed for hydrocarbon identification and concentrations of gasoline, diesel and heavy oil were not detected in any of the three. The four northern samples were also analyzed for gasoline, diesel and heavy oil. The gasoline concentration ranged from 89 mg/kg to 525 mg/kg as seen within the laboratory report in Exhibit C page 6. The concentration of diesel ranged from 447 mg/kg to 9,410 mg/kg. Concentration of heavy oil was not detected in the northern samples.

An additional soil sample was collected from the UST excavation at the north end of Tank #2 and analyzed for volatile organic compounds (VOC's) and polynuclear aromatic compounds (PAH's). Napthalene was found to exceed the exposure pathway of leaching into groundwater (RBC_{sw}).

If a Risk based cleanup model approach was used for the site, EMC's analysis of contaminated mediums, exposure pathways and receptor scenarios would be as follows (see attached Exhibit F Risk-Based Concentrations Table Abridged). Currently the site is commercial/industrial in nature and this appears to continue to the West and South of the facility as seen in the attached aerial Vicinity Map Exhibit G. To the East is a residential neighborhood. This entire area is supplied by a municipal public water system and a well log search indicates the immediate wells in the vicinity are predominantly geotechnical, monitoring or drinking water wells (water wells dating back to 1960's). It appears from topographic information the gradient of upper groundwater flow is to the Northwest. All of the drinking water wells found in the well log search are upgradient of the 3040 N Delta Hwy Site. This would eliminate the concern regarding migration to identified receptor scenarios for residential and urban residential.

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For gasoline two exposure pathways exceedances were present in the four Northern samples. The pathway of vapor intrusion into buildings (RBC_{si}) can be eliminated due to the fact that the COC level was under the occupational receptor scenario. The pathway of leaching into groundwater (RBC_{sw}) through the occupational receptor scenario can also be eliminated due to ground water not being a water source for this immediate area or areas adjacent and down gradient of the site.

For diesel, using a risk-based analysis, one exposure pathway was exceeded in the four Northern samples. The pathway for soil ingestion, dermal contact and inhalation (RBC_{ss}) indicated exceedances in the receptor scenarios for residential, urban residential and construction worker. The residential and urban residential risks may be eliminated as previously explained. The RBC_{ss} risk for construction workers is of concern if the contaminated area of the parking facility is excavated.

Finally, the Memorandum from Katie Robertson, DEQ Project Manager of May 16, 2011 seen in Exhibit B states under her recommendations that following actions be performed.

- Review the file for file number 20-02-7002 and determine if the groundwater area addressed includes coverage of this area and if the Conceptual Site Model developed for that release is valid for this release.

I have attached Oregon DEQ LUST summary page for general site number 20-02-7002 and NFA letter for this site as Exhibits D and E respectively. We have read the NFA letter sent to Dale Wendt of Lane County Department of Public Works**,** dated May 28, 2004, and do agree that the groundwater area addressed includes the coverage of this area and that the conceptual site model is valid for this release.

Therefore, we are requesting that the Department of Environmental Quality consider the issuance of a NFA for LUST General Site Number 20-03-1830.

Sincerely,

James Harrell, BS FE
EMC-Engineers/Scientists, LLC

reviewed by
Jack (John) Akin MS, PE
EMC-Engineers/Scientists, LLC

EMC
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- Engineers/Scientists, LLC

EXHIBIT A

LUST SUMMARY PAGE 20-03-1830

Oregon Department of Environmental Quality
Lane County Delta Complex IV

Summary Information

General Site Information

20-03-1830		**Basic Incident Information**	
Site Name:	Lane County Delta Complex IV	**Received Date:**	09/02/2003
Address:	3040 NORTH DELTA HIGHWAY	**Status:**	UNASSIGNED
	EUGENE, 97408	**Tank Type**:	Regulated Tank
County:	LANE		
Site Type:	Risk Based Standards	**UST Facility Id:**	3523
Project Manager	N/A - Currently Unassigned.		

Assessment Information

Cause of Release:	OVERFILL	**Source of Release:**	NOT REPORTED	**Discovery Method:**	DECOMMISSIONING
Media Effected		**Contaminants Released**			
>Soil		>Diesel			

Delineate Soil YES

Management Information

Release Stopped Date:	08/29/2003	**Cleanup Start Date:**	08/29/2003	**Cleanup End Date:**	

Work Reported Information

Work Reported	**Reported Date**
20 DAY REPORT	10/23/2003

Site Documents

Click the link to view the document.

File Name	Category	File Size MB	Upload Date
20-03-1830_20day_rpt-09-22-2003.pdf	Miscellaneous	0.5275	5/11/2011
20-03-1830_file_review_summary_05-11-2011.pdf	Miscellaneous	0.0211	5/16/2011

This website application cannot be made compliant with the Americans with Disabilities Act. We apologize for any inconvenience and invite you to contact DEQ at 800-452-4011 or email deqinfo@deq.state.or.us for assistance in accessing this site

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- Engineers/Scientists, LLC

EXHIBIT B

DEQ MEMORANDUM

State of Oregon
Department of Environmental Quality Memorandum

Date: May 16, 2011

To: 20-03-1830 Lane County Delta Complex IV

From: Katie Robertson, Project Manager

Subject: File Review Summary

This memo is a summary of my review of the following LUST file.

Lane County Delta Complex IV
3040 N Delta Hwy, Eugene, Oregon
DEQ Tanks File No. 20-03-1830
Facility ID No. 3523

Four other petroleum releases have been previously reported at the site and assigned leaking underground storage tank (UST) file numbers. All four of these file numbers have previously been closed by DEQ. The four file numbers are: 20-93-4119, 20-93-4119, 20-95-7044, and 20-02-7002.

UST Decommissioning (August 2003)

Four 20,000-gallon USTs storing gasoline and diesel were decommissioned by removal in August 2003. Groundwater was not encountered during decommissioning activities. After confirmation samples were collected three new 20,000-gallon USTs were placed in the open excavation.

Two confirmation soil samples were collected from 16.5 feet below ground surface (bgs) from each end of three of the USTs and one sample was collected from the north end of the eastern diesel UST. The three confirmation samples collected at the southern ends of the USTs were analyzed for hydrocarbon identification. Concentrations of gasoline, diesel, and heavy oil were not detected in the three soil samples analyzed.

The four confirmation samples collected from the northern ends of the USTs were analyzed for gasoline, diesel and heavy oil. Concentrations of gasoline were detected in each soil sample at levels ranging from 89 milligrams per kilograms (mg/kg or parts per million) to 525 mg/kg. The lab report noted the gasoline concentrations detected in three of the samples were representative of diesel. Concentrations of diesel were detected in each soil sample at levels ranging from 447 mg/kg to 9,410 mg/kg. Concentrations of heavy oil were not detected in any of the four soil samples.

An additional soil sample was collected from the UST excavation at the north end of Tank #2 and analyzed for the risk based volatile organic compounds (VOCs) and polynuclear aromatic hydrocarbons (PAHs). The compounds detected are summarized below.

Isopropylbenzene	0.038 mg/kg	Anthracene	0.054 mg/kg
n-propylbenzene	0.58 mg/kg	Fluoranthene	0.024 mg/kg
1,3,5-trimethylbenzene	0.015 mg/kg	Fluorene	0.32 mg/kg
Naphthalene	0.014 mg/kg, 0.21 mg/kg	Phenanthrene	0.87 mg/kg
Acenaphthene	0.32 mg/kg	Pyrene	0.052 mg/kg

Eight soil samples were collected at 2.5 feet bgs from the pump islands and piping runs in September 2003. The samples were analyzed for hydrocarbon identification and concentrations of gasoline, diesel, and heavy oil were not detected.

Recommendations

DEQ recommends the following actions be performed.

- Review the file for file number 20-02-7002 and determine if the groundwater area addressed includes coverage of this area and if the Conceptual Site Model developed for that release is valid for this release.

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emc@emcengineersscientists.com; http://www.emcengineersscientists.com
- Engineers/Scientists, LLC

EXHIBIT C

INITIAL 20-DAY REPORT

Bergeson-Boese & Associates, Inc.

Comprehensive Environmental Services

65 Centennial Loop
Eugene, Oregon 97401

(541) 484-9484
Fax: (541) 484-4188

29791 SW Kinsman Road
Wilsonville, Oregon 97070

(503) 570-9484
Fax: (503) 570-0384

www.bergeson-boese.com

September 22, 2003

David Belyea
DEQ - Western Region Eugene Office
Tanks Program
1102 Lincoln Street, Suite 210
Eugene, Oregon 97401

Re: Initial (20 Day) Report Form for UST Cleanup Projects

For: Lane County Delta Complex IV
3040 North Delta Highway
Eugene, Oregon 97408
DEQ USTC File No.: 20-03-1830

Dear Mr. Belyea:

Please find enclosed a copy of the Oregon Department of Environmental Quality (DEQ) *Initial (20 Day) Report Form for UST Cleanup Projects* completed for the above referenced site.

Should you have any questions concerning the report or certification, please feel free to contact me at (541) 484-9484 ext. 120.

Sincerely,
Bergeson-Boese & Associates, Inc.

Jim A. Kooiman, P.E.
Principal/Project Manager

Enclosure

Oregon Department of Environmental Quality

Underground Storage Tank Program

Initial (Twenty Day) Report Form for UST Cleanup Projects

February 2001

This report is due twenty (20) days from the date of the release.

DEQ USTC File No. 20-03-1830

DEQ Facility ID No. 3523

Site Name: Lane County Delta Complex IV

Site Address: 3040 N. Delta Highway; Eugene, OR 97408

INITIAL CLEANUP INFORMATION

(1) Type of contamination (check all that apply):

X Gasoline X Diesel ___ Waste Oil ___ Heating Oil

___ Other (specify) _____

(2) Estimate quantity of release (based on information known to date): unknown

___ <100 gal. ___ 100-499 gal. ___ 500-999 gal. ___ 1,000-5,000 gal. ___ >5,000 gal.

SITE INFORMATION (Circle N for "no" or Y for "yes")

(3) (N) Y Did any water enter the excavation? If yes, please describe and identify the depth to groundwater in feet below ground surface: _____

(4) (N) Y Was a sheen or odor observed on any water in the excavation?

Note: If groundwater is encountered, soil samples from the soil/water interface must be collected and analyzed for BTEX and by the appropriate TPH method.

At sites where diesel or other non-gasoline products have been released, the water may also have to be screened or tested for polynuclear aromatic hydrocarbons (PAHs). *Please refer to OAR 340-122-0218.*

(5) (N) Y Was water pumped from the excavation?

N Y If yes, did groundwater recharge within 24 hours after pumping?

Please describe the pumping procedure and disposal option selected for the purged excavation water:

_____

_____

(6) (N) Y Were any water samples collected from the excavation? If yes, please describe:

_____

(7) N (Y) Have any soil and/or water sample results been received at this time?

If so, please attach any lab reports.

IF GROUNDWATER HAS BEEN ENCOUNTERED, PLEASE ANSWER QUESTIONS #8-13, BELOW.
IF NO WATER HAS BEEN ENCOUNTERED, PLEASE SKIP TO QUESTION #14

(8) What are the known uses of groundwater within a 500-foot radius of the release site?

___ non-use ___ industrial ___ agricultural ___ drinking supply

(9) If groundwater in this area is being used as a drinking water supply, please check the type and size of population served by the supply:

___ Community (community well used for drinking water year round)

size: ___ <1,000 people ___ 1,000 - 5,000 people ___ >5,000 people

___ Intermittent use (public water used for drinking water only on a part-time basis)

size: ___ <50 people ___ 50 - 300 people___ > 300 people

___ Private wells (individual private well or wells used for drinking water)

size: ___ <10 people ___ 10 - 25 people ___ >25 people

(10) **N** **Y** Is there any evidence this water supply has been or is likely to be impacted from the petroleum product release? If yes, estimate how difficult it would be to replace the existing supply:

___ bottled water is the only alternative
___ on-site water treatment; bulk water delivery; new wells are available
___ able to connect to existing water supply
___ do not know what alternatives would be available

(11) **N** **Y** Are/were vapors present in on-site or nearby buildings? If yes:

A. Are you monitoring and/or mitigating any potential fire and safety hazards posed by vapors and free product? Explain: _____

_____

B. Estimate the number of people potentially affected by vapors:

___ 1-2 people ___ 3-10 people ___ >10 people

(12) **N** **Y** Are vapors or is petroleum contamination present in the utility corridors?

If yes, please explain:

_____

(13) **N** **Y** Are natural areas located within 1/4 mile of the site? If so, please describe types (parks, rivers, wetlands, sensitive habitats, *etc.*) and proximity: _____

_____

(14) (N) **Y** If groundwater was not encountered in the excavation, do you believe that this cleanup project can be conducted under the requirements for an UST Cleanup Matrix site? If yes, then refer to OAR 340-122-0305 through 0360.

A generic remedy closure under OAR 340-122-0252 is proposed.

AREA/SITE CONDITIONS:

(15) Mean annual rainfall: ___ <20 inches ___ 20-45 inches X >45 inches

(16) Soil type(s) of the naturally occurring soils, not the backfill around the tank:

___ clays, compact tills, shales, and unfractured metamorphic and igneous rocks

___ sandy loams, loamy sands, silty clays, clay loams, moderately permeable limestone, dolomite, sandstones, moderately fractured igneous and metamorphic rock

X fine and silty sands, sands and gravels, highly fractured igneous and metamorphic rock, permeable basalts and lavas, karst limestones and dolomites

SOIL MANAGEMENT

(17) If soil sample results have been received:

(N) Y Will the level of contamination detected require removal of contaminated soil for treatment or disposal?

(18) All contaminated soil temporarily stockpiled on-site prior to treatment or disposal must be contained within a bermed area, kept covered, and the entire area secured to prevent unauthorized access by the public. If you haven't done this, please explain why:

_____

_____

_____

_____

Note: It is a violation to stockpile petroleum contaminated soil (PCS) on-site for greater than 30 days without a DEQ Solid Waste Letter Authorization (SWLA) Permit.

(19) If contaminated soil is currently stockpiled on-site, please indicate when disposal will occur or when treatment will begin: _____

(20) Estimated volume of contaminated soil (specify tons or cubic yards): unknown

(21) Intended disposition of soils (please check one): No soil removal is planned.

___ On-site/off-site treatment, Solid Waste Letter Authorization Permit Application attached.

___ Thermal treatment off-site at an authorized facility.

Facility name: _____

____ Landfill disposal.

Name of Landfill: _____

Note: Please attach additional information as necessary to explain any unusual circumstances associated with this project.

This initial report is intended to provide the Department with the basic initial information about activities associated with the release. Future reports should provide a more detailed and complete picture of the cleanup project.

Please be aware that a DEQ permit/authorization is required for the following activities:

1) Soil aeration, bioremediation (on-site or off-site), or on-site thermal treatment.

2) Water discharges to a stream/storm drain from the excavation or treatment tank.

If these activities will be included in your cleanup project, contact the regional DEQ office for the appropriate application forms, information on permit fees and guidance documents.

THIS REPORT WAS PREPARED BY:

Individual: Jim A. Kooiman Phone: (541) 484-9484 ext #120

Company: Bergeson-Boese & Assoc., Inc.

Address: 65 Centennial Loop

City: Eugene State OR Zip 97401

Please return this form to the regional office in which the site is located.
Addresses and phone numbers for these offices can be found in the *UST Cleanup Manual*.
If you have questions, call the contact person in your regional office.

REMINDER: For non-heating oil tanks, you must submit a UST Decommissioning/ Change-in-Service Report form and a UST Decommissioning Checklist to the appropriate regional office within 30 days of the UST decommissioning.
See *UST Cleanup Manual*, for copies.

Failure to do so can result in delays to your project and may result in continued billing for the tank permit fees.

Copies of the *UST Cleanup Manual* and other necessary UST Program forms can be downloaded from the UST Program web site:

http://www.deq.state.or.us/wmc/tank/ust-lust.htm

KEEP A COPY OF THIS REPORT FOR YOUR FACILITY RECORDS

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT

3 Kings Environmental
Attn: Dave Borys
P.O. Box 280
[redacted]

REPORT NUMBER: 48018
REPORT DATE: 8-29-03
PAGE: 1 of 2

NWTPH-Dx

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
Lane-04	L421	**3,400**	**ND**	56
Lane-05	L422	**447**	**ND**	*
Lane-06	L423	**9,410**	**ND**	*
Lane-07	L424	**2,370 †**	**ND**	*
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is o-Terphenyl
ND = Not Detected (below reporting limit or detection limit)

* Surrogate peak is not discernible on chromatogram from analyte peak.

† Gas and diesel mixed. Part of result is due to gas in the diesel range.

NWTPH-Gx

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
Lane-04	L421	SOIL	**206 ****	90
Lane-05	L422	SOIL	**89 ****	83
Lane-06	L423	SOIL	**525 ****	90
Lane-07	L424	SOIL	**356 ‡**	91
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

** Not gasoline. Petroleum hydrocarbons in the gas range are the light component of diesel.

‡ Mixed with diesel. Part may be due to early component of diesel.

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT

3 Kings Environmental
Attn: Dave Borys
P.O. Box 280
Battle Ground, WA 98604

PROJECT NAME/SITE:	Lane County	**REPORT NUMBER:**	48018
PROJECT NUMBER:		**REPORT DATE:**	8-29-03
EXTRACTION DATE:	8-28-03	**PAGE:**	2 of 2

NW TPH-HCID
Analyte: Petroleum Hydrocarbon Identification (Gasoline, Petroleum, Heavy Oil) for soil (dry weight basis)

Field ID	Lab ID	Identification			Surrogate Recovery (%)
		Gasoline	Diesel	Heavy Oil	
Lane-01	L418	ND	ND	ND	85
Lane-02	L419	ND	ND	ND	83
Lane-03	L420	ND	ND	ND	87
BLANK	-	ND	ND	ND	-
Reporting Limits (mg/Kg)	-	20	50	50	-

Surrogate is Chlorooctane
ND = Not Detected (below reporting limit or detection limit)

Environmental Sciences, Inc.

CHAIN OF CUSTODY

Repo[illegible] ▼ 48018

[illegible]search & Laboratory Services
2415 SE 11th Ave. • Portland, Oregon 97[illegible] [illegible] 231-9320 • FAX (503) 231-9344

PROJECT #	PROJECT NAME / SITE: Lane County	STATE: Oregon	[illegible]ASE ORDER #
COMPANY: [illegible]	REPORT ATTENTION: David Ross	PHONE NUMBER	[illegible]UMBER
SAMPLES COLLECTED BY: David Ross	DATE(S) COLLECTED: 8/28/03	TIME(S) COLLECTED	[illegible]ES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)		Regular ☒	3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REQUIRED	LAB ID
Lane-01	Soil	SSW UST #1	11.5 bgs	NWTPH HCID	L418
-02	|	SSW UST #2	|	NWTPH HCID	L419
-03	|	SSW UST #3	|	NWTPH HCID	L420
-04	|	NSW UST #4	|	NWTPH-Dx NWTPH-Gx	L421
-05	|	NSW UST #3	|	|	L422
-06	|	NSW UST #2	|	|	L423
-07	|	NSW UST #1	|	|	L424

RELINQUISHED BY: [signature]	DATE / TIME: 8/28/03 830	RECEIVED BY: [signature] 8-28-03	DATE / TIME: 825 PM
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB	DATE / TIME

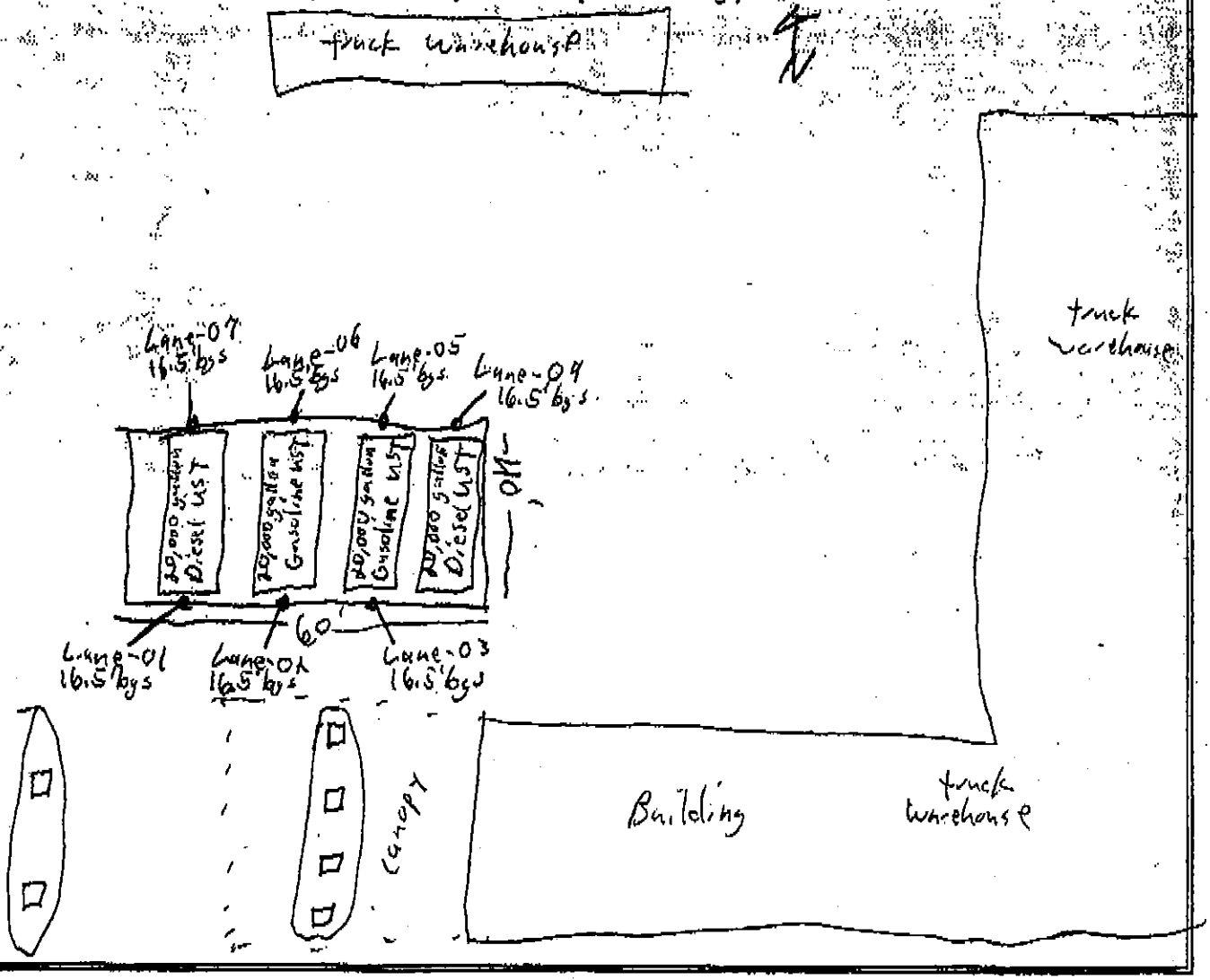
Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

E. CONTAMINATION INFORMATION

Tank #	Groundwater in pit?	Product odor in soil?	Product stains in soil?	Number of Samples	Laboratory (Name, City, State, Phone)
1	No	Yes	Yes	1	WyEast Environmental Portland, OR 503-231-9320
2	No	Yes	Yes	2	"
3	No	Yes	Yes	2	"
4	No	Yes	Yes	2	"

* Sampling required if groundwater is encountered. See cleanup rules.

F. SITE SKETCH: (Show location of adjacent roads, property lines, structures, dispenser, & all USTs) (Show North, general direction of ground slope and soil sample locations. Sketch does not need to be drawn to scale. You may attach a separate drawing.)



Wy'East Environmental Sciences, Inc.

LABORATORY REPORT

3 Kings Environmental
Attn: Dave Borys
P.O. Box 280
Battle Ground, WA 98604

PROJECT NAME/SITE:	Lane County	**REPORT NUMBER:**	48242
PROJECT NUMBER:	23154	**REPORT DATE:**	9-16-03
EXTRACTION DATE:	9-15-03	**PAGE:**	1 of 1

NW TPH-HCID
Analyte: Petroleum Hydrocarbon Identification (Gasoline, Petroleum, Heavy Oil) for soil (dry weight basis)

Field ID	Lab ID	Identification			Surrogate Recovery (%)
		Gasoline	Diesel	Heavy Oil	
001	L1107	ND	ND	ND	103
002	L1108	ND	ND	ND	107
003	L1109	ND	ND	ND	107
004	L1110	ND	ND	ND	109
005	L1111	ND	ND	ND	103
006	L1112	ND	ND	ND	104
007	L1113	ND	ND	ND	104
008	L1114	ND	ND	ND	110
BLANK	-	ND	ND	ND	-
Reporting Limits (mg/Kg)	-	20	50	100	-

Surrogate is Chlorooctane
ND = Not Detected (below reporting limit or detection limit)

Report #: 48242

Environmental Sciences, Inc.

Research & Laboratory Services

CHAIN OF CUSTODY

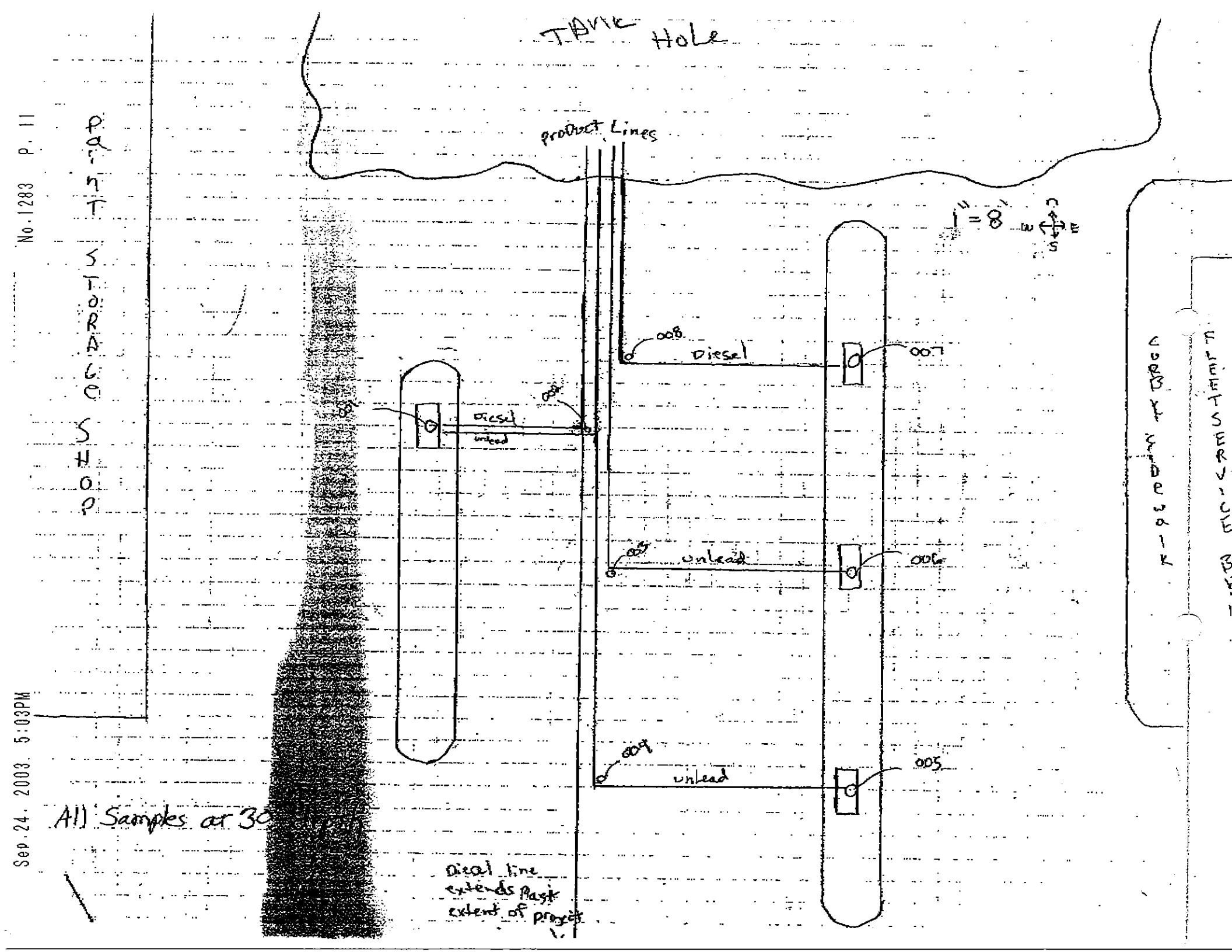
2415 SE 11th Ave. • Portland, Oregon 9[illegible] 231-9320 • FAX (503) 231-9344

PROJECT #	PROJECT NAME / SITE	STATE	PURCHASE ORDER #
Lane County 03154	Lane County	Oregon	
COMPANY	REPORT ATTENTION	PHONE NUMBER	FAX NUMBER
3 Kings Environmental	David Boys		
SAMPLES COLLECTED BY	DATE(S) COLLECTED	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
Matt E.	8/12/03		Yes
PRESERVATIVE USED? (HCl, etc.)			Regular ☒ 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REQUIRED	LAB ID
001	Soil			NWTPH-HCID	L1107
002					L1108
003					L1109
004					L1110
005					L1111
006					L1112
007					L1113
008					L1114

RELINQUISHED BY	DATE / TIME	RECEIVED BY	DATE / TIME
[signature]	8/15/03	[signature]	9-15-03 4 pm
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB	DATE / TIME

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy



Pacific Northwest Laboratories

Environmental Analysis

65 Centennial Loop
Eugene, Oregon 97401

(541) 484-4493
Fax: (541) 484-4188

29791 SW Kinsman Road
Wilsonville, Oregon 97070

(503) 570-9436
Fax: (503) 570-0384

September 17, 2003

Lane County Department of Public Works
Attn: Dale Wendt
3040 North Delta Highway
Eugene, OR 97408-1696

RE: PNL Report Number: 5053
Client Project Code: LCPW19ISC.03UC

Please find enclosed the report prepared for the laboratory analyses you requested.

The samples were received under a chain-of-custody. Soil samples analyzed using NWTPH methods are reported as dry weight. For all other methods, results are reported as received. Unused samples are retained for one month.

Please contact us at the above address or phone number to obtain additional sample containers and coolers.

Thank you for selecting Pacific Northwest Laboratories for your analytical needs. We look forward to serving you in the future.

Sincerely,

Pacific Northwest Laboratories

Dennis Dyke, Laboratory Director

Enclosure

Pacific Northwest Laboratories
65 Centennial Loop
Eugene, Oregon 97401
(541) 484-4493 Fax: 484-4188

LABORATORY REPORT

PNL REPORT NUMBER: 5053

CLIENT: Lane County Department of Public Works
CLIENT PROJECT CODE: LCPW19ISC.03UC
SITE LOCATION: Lane County Public Works Shop
3040 North Delta Highway
Eugene, Oregon

ITEMS ANALYZED: 1 soil sample

DATE SAMPLES COLLECTED: September 3, 2003

METHOD: **Volatile Organic Compounds per EPA Method 5030 / 8260B**
Results and Method Reporting Limits (MRL) presented in ug/kg (ppb)
ND = Compound not detected

COMPOUND	LCPW19-N-WC-14'9" Result	LCPW19-N-WC-14'9" MRL	METHOD BLANK Result	METHOD BLANK MRL
Methyl-tert-butylether (MTBE)	ND	5.0	ND	5.0
1,2-Dichloroethane (EDC)	ND	5.0	ND	5.0
1,2-Dibromoethane (EDB)	ND	5.0	ND	5.0
Benzene	ND	5.0	ND	5.0
Toluene	ND	5.0	ND	5.0
Ethylbenzene	ND	5.0	ND	5.0
Xylenes (total)	ND	5.0	ND	5.0
Isopropylbenzene	38		ND	5.0
n-Propylbenzene	580		ND	5.0
1,3,5-Trimethylbenzene	15		ND	5.0
1,2,4-Trimethylbenzene	ND	5.0	ND	5.0
Naphthalene	14		ND	5.0

(Continued on following page.)

PNL REPORT NUMBER: 5053

METHOD: Volatile Organic Compounds per EPA Method 5030 / 8260B

Surrogate Recoveries
(percent)

	DBFM	TOL	BFB
LCPW19-N-WC-14'9"	112	64 *	59 *
METHOD BLANK	101	103	105

9/9/03 DAD
Date Completed / Analyst

QC Limits

DBFM	=	Dibromofluoromethane	70-121
TOL	=	Toluene-d8	81-117
BFB	=	4-Bromofluorobenzene	74-121

* - Surrogate recoveries outside QC limits due to sample matrix interference.

PNL REPORT NUMBER: 5053

METHOD: **PAH Analysis per OR-DEQ modified EPA method 8270C GC/MS/SIM**
Results and Method Reporting Limits (MRL) presented in ug/kg (ppb)
ND = Compound not detected

COMPOUND	LCPW19-N-WC-14'9" Result	MRL	METHOD BLANK Result	MRL
Naphthalene	210		ND	20
Acenaphthylene	ND	20	ND	20
Acenaphthene	320		ND	20
Fluorene	320		ND	20
Phenanthrene	870		ND	20
Anthracene	54		ND	20
Fluoranthene	24		ND	20
Pyrene	52		ND	20
Benzo(a)anthracene	ND	20	ND	20
Chrysene	ND	20	ND	20
Benzo(b)fluoranthene	ND	20	ND	20
Benzo(k)fluoranthene	ND	20	ND	20
Benzo(a)pyrene	ND	20	ND	20
Indeno(1,2,3-cd)pyrene	ND	20	ND	20
Dibenz(a,h)anthracene	ND	20	ND	20
Benzo(g,h,i)perylene	ND	20	ND	20

Surrogate Recoveries
(percent)

	NBZ	FBP	TPH
LCPW19-N-WC-14'9"	72	74	71
METHOD BLANK	67	67	80

9/16/03 DAD
Date Completed / Analyst

QC Limits

NBZ	=	Nitrobenzene-d5	23-120
FBP	=	2-Flurobiphenyl	30-115
TPH	=	Terphenyl-d14	18-137

Pacific Northwest Laboratories

65 Centennial Loop
Eugene, Oregon 97401
(541) 484-4493
Fax: (541) 484-4188

CHAIN OF CUSTODY RECORD

Client/Company: BB&A
Project Manager: Jim A. Kooiman
Project Code: LCPW19ISC.03UC
Collected By: Jim A. Kooiman

Site Location: 3040 N. Delta Hwy
Site Address: Lane Co. Public Works Shop (Lane Co. II)
Billing Address:
P.O.No.:
Phone No.:

Lab Project Number: 5053

Samples Refrigerated (Yes) No
Samples in Proper Containers (Yes) No

RUSH Yes (No)

13°Conice

COMMENTS:

ANALYSES TO BE PERFORMED

	SAMPLE I.D.	DATE	TIME	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	NWTPH-HCID ODEQ/WDOE	NWTPH-Gasoline-x ODEQ/WDOE	NWTPH-Diesel-x ODEQ/WDOE	RBCA 8260B	BTEX 8021B	Volatile Organics EPA 624/8240/8260	PAH GC/MS SIM ODEQ	BTEX EPA 602/8020	PCBs 608/8080	Flashpoint EPA 1010	Semi-VolatileOrganics EPA 625/8270	Lead 7421	TCLP Metals (3)/(6)/1311 pH						REMARKS
1	LCPW19-N-WC-14'9"	9/3/03		X			2				X			X												
2																										
3																										
4																										
5																										
6																										
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13																										
14																										

RELINQUISHED BY:	COMPANY	DATE / TIME	RECEIVED BY:	COMPANY	DATE / TIME
[signature]	BB&A	9/3/03 8:20AM	M. McLean	PM	9-3-03 820A
RELINQUISHED BY:	COMPANY	DATE / TIME	RECEIVED BY:	COMPANY	DATE / TIME
RELINQUISHED BY:	COMPANY	DATE / TIME	RECEIVED BY:	COMPANY	DATE / TIME

EMC | Grants Pass * Jacksonville * Medford, OR
GP Office: 1867 Williams Hwy., Suite 216, Grants Pass, OR, 97527
Jville Office: 450 Conestoga Dr., Jacksonville, OR, 97530
Ph: 541-474-9434 * Cell: 541-261-9929 * Fax 541-727-5488
emc@emcengineersscientists.com; http://www.emcengineersscientists.com
- Engineers/Scientists, LLC

EXHIBIT D

LUST SUMMARY PAGE 20-02-7002

Oregon Department of Environmental Quality
Lane County Public Works Facility

Summary Information

General Site Information

20-02-7002

Site Name:	Lane County Public Works Facility	**Received Date:**	02/26/2002
Address:	3040 DELTA HWY EUGENE, 97401	**Status:**	CLOSED
		Tank Type:	Regulated Tank
County:	LANE	**File Status:**	No Further Action
Site Type:	Risk Based Standards	**UST Facility Id:**	3523
Project Manager	N/A - Project Completed.		

Basic Incident Information

Assessment Information

Cause of Release:	NOT REPORTED	**Source of Release:**	TANK	**Discovery Method:**	OTHER

Media Effected	**Contaminants Released**
>Soil >GroundWater	>Diesel

Free Product Removed	YES	**Delineate Ground Water**	YES	**Groundwater Delineated**	YES
Compliance Monitoring	YES				

Management Information

Release Stopped Date: 02/26/2002	**Cleanup Start Date:** 02/26/2002	**Cleanup End Date:** 06/01/2004

Work Reported Information

Work Reported	Reported Date
Risk Based Evaluation	3/27/2004
Risk Based Evaluation	12/1/2002
Groundwater Investigation	5/1/2002

Site Documents

Click the link to view the document.

File Name	Category	File Size MB	Upload Date
20027002NFA05282004.pdf	No Further Action Letter	0.3877	1/4/2010

This website application cannot be made compliant with the Americans with Disabilities Act. We apologize for any inconvenience and invite you to contact DEQ at 800-452-4011 or email deqinfo@deq.state.or.us for assistance in accessing this site

Department of Environmental Quality
700 NE Multnomah Street, Suite 600 Portland, OR 97232

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- Engineers/Scientists, LLC

EXHIBIT E

NFA LUST# 20-02-7002

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
Western Region
1102 Lincoln
Suite 210
Eugene, OR 97401
(541) 686-7838

May 28, 2004

Mr. Dale Wendt
Lane County Department of Public Works
3040 N. Delta Highway
Eugene, OR 97408-1696

Re: LUST #20-02-7002
Lane County Delta Complex III
3040 N. Delta Highway, Eugene
No Further Action

Dear Mr. Wendt:

The Department of Environmental Quality (DEQ) has received the report prepared by Bergeson-Boese & Associates, Inc. (BBA) entitled *Quarterly Groundwater Monitoring and Risk-Based Corrective Action Report* dated March 27, 2004, for the above referenced site. A review of the reports, as well as a comprehensive review of the UST Cleanup file, has been completed.

The Department has determined the investigation, cleanup and risk evaluation of the petroleum release meet the requirements of the Oregon Administrative Rules (OAR) 340-122-0205 through 340-122-0360 and for site closure pursuant to Risk-based Cleanups in accordance with OAR 340-122-0244 and 340-122-0250, and that **no further action** is required at this time. This determination is a result of our evaluation and judgment based on the regulations and facts as we now understand them, including the following.

Background:

An 8,000-gallon single-walled fiberglass underground storage tank was located at the Lane County Public Works facility and contained diesel fuel used for emergency power generation. Following removal of old diesel fuel, a delivery of 6,986 gallons of new diesel fuel was transferred to the tank on February 5, 2002. An inspection of the tank contents by Lane County staff on February 25, 2002, discovered a loss of approximately 6,800 gallons of diesel fuel. Subsequent inspections of the tank discovered a crescent-shaped perforation in the tank bottom below the fill pipe opening. The petroleum release was reported to the DEQ on February 26, 2002, and assigned leaking underground storage tank number 20-02-7002.

The site is located in an industrial area of north Eugene, Oregon. The subject property and surrounding areas are zoned light-medium industrial and "Quarrying – Sand and Gravel". The

subject property is used as the public works facility for Lane County. The surrounding properties are used as a service hub for a communications company and quarry for sand and gravel. The reasonably likely future use is to remain the same or similar. The receptor scenarios applicable to this site are occupational, construction and excavation workers. These potential receptors were used for the risk-based evaluation of the property.

Boring logs from investigations completed at the site indicate that the subsurface material primarily consists of sand, silty sand and cobbles up to 5" diameter. Depth to first groundwater was typically observed at 23 to 26 feet during drilling and was measured at 19 to 24 feet in completed monitoring wells. Groundwater in this area has historically fluctuated dramatically due to the close proximity to the Willamette River and significant pumping operations at the adjacent sand and gravel quarry.

The subject and surrounding properties are connected to a municipal water supply. The nearest surface water body is the Willamette River located approximately 1,000 feet to the west of the site. BBA has conducted a water supply well survey and is included in the above referenced report. No domestic water supply wells were identified within ¼-mile of the subject property. Three domestic water supply wells were identified between ¼-mile and ½-mile of the subject site, however, all three were located side gradient of the release location. Three production wells are located at the site which are used for the heating and cooling systems for the Lane County facility.

Initial Abatement Measures and Free Product Removal

The remaining contents of the tank were removed on February 26, 2002, to prevent any further diesel from releasing to the environment.

Four 6-inch groundwater recovery wells (RW-1 through RW-4) were installed on March 6 through 9, 2002, using an air rotary drill rig. Approximately 10 cubic yards of contaminated soil were generated during the drilling and were transported to Short Mountain Landfill for disposal. Groundwater pumping and diesel fuel product recovery began on March 9, 2002. Approximately 300 gallons of diesel fuel was recovered during the first week of recovery as well as over 80,000 gallons of groundwater with high levels of dissolved-phased product.

Indoor air monitoring was conducted on March 9, 2002, in the maintenance building adjacent to the tank. An 8-hour sample was collected and analyzed for volatile organic compounds (VOCs). No VOCs were detected.

Five additional 2-inch and 4-inch recovery/monitoring wells (RW-5 through RW-9) were installed on March 20 and 21, 2002, using a hollow-stem auger drill rig to a depth of 30 feet. Soil samples were collected from each boring at a depth of 19-20 feet with the exception of boring RW-8 which was sampled at five foot intervals. Each sample was analyzed for hydrocarbon identification by method NWTPH-HCID. Petroleum hydrocarbons were only detected in boring RW-9. Heavy oil range petroleum hydrocarbons were detected and quantified at 98.4 mg/kg.

Remedial Actions

Aquifer testing, including step drawdown tests and a constant flow rate test, were completed during the week of March 25, 2002, to determine the determine the appropriate remedial actions for the site.

The remediation system for the site included the placement of groundwater pumps in recovery wells RW-1, RW-3 and RW-4 located 5 to 10 feet below the water table and used to control gradient while skimmer pumps were set in recovery wells RW-1 and RW-4 on April 1, 2002, to remove free product. A third skimmer was added to RW-2 on April 19, 2002.

Free product measurements were collected from each well beginning on March 9, 2002. Initial measurements were taken hourly for several days and then daily for the initial month. The maximum free product measurement occurred in early April 2002 as the remediation system was activated. A measurement of 7.12 feet of diesel was recorded in recovery well RW-2 on April 10, 2002. However, by the end of April 2002 free product had been significantly reduced across the site.

Site Characterization and Groundwater Sampling:

Three additional 2-inch monitoring wells (RW-10 through RW-12) were drilled using a hollow-stem auger drill rig on April 29 and 30, 2002, to characterize the magnitude and extent of the diesel release. Soil samples were collected from each boring at depths of 20 to 22 feet and analyzed for hydrocarbon identification. Diesel was detected in boring RW-11 and quantified at 3,850 mg/kg.

A groundwater monitoring event was conducted on May 1, 2002. Groundwater samples were collected from groundwater recovery wells RW-1, RW-3 and RW-4. Diesel was detected in each sample ranging from 23,600 µg/L to 1,050,000 µg/L. Groundwater samples were then collected from the remaining monitoring wells RW-5 through RW-12 and analyzed for diesel, heavy oil and BTEX compounds. Diesel was detected in RW-5, RW-6, RW-7 and RW-11 at concentrations ranging from 724 µg/L to 18,900 µg/L. Benzene was detected only in well RW-6 at 20.4 µg/L. Low levels of toluene, ethylbenzene and xylenes were also detected in wells RW-5, RW-6, RW-7 and RW-11.

Three production water wells are located on the Lane County site. The wells are used to produce water for the heating and cooling system at the facility. The nearest production well to the release (PW#2) was initially sampled on June 20, 2002, and analyzed for diesel. An additional sample was collected on August 14, 2002, and analyzed for diesel. No diesel was detected in either sample.

Tank Decommissioning and In-situ Bioremediation:

The 8,000-gallon tank was decommissioned by removal on May 8, 2002. Part of the single-walled fiberglass tank could not be removed because removing it would have required removal of significant amounts of pea gravel and undermining or removal of several utilities, utility vaults and sidewalk. The tank was underlain by a cement slab. Two soil samples were collected from backfill material at the ends of the tank at a depth of 14 feet and three additional samples were collected from native soil beneath the slab at 17 to 18 feet. All samples were analyzed for diesel. Sample results ranged from non-detect to 1,100 mg/kg.

Two application wells (AP-1 and AP-2) were installed adjacent to the former tank on May 16, 2002. The wells were drilled with a hollow–stem auger drill rig and completed with 2-inch casing to a depth of 30 feet. The application wells were installed to allow injection of materials for enhanced bioremediation. Initial injections included dilute hydrogen peroxide and nutrients. Subsequent injections, which were to include dilute hydrogen peroxide, nutrients and indigenous microorganisms, did not occur because of a change in project management.

An additional well (RW-13) was installed adjacent to the nearby maintenance building to monitor groundwater quality on October 4, 2002. The well was installed to a depth of 30 feet.

Groundwater sampling events occurred on June 25 and September 19, 2002. The following are results for the September event which included the recovery wells in the active remediation system (RW-1 through RW-4) and all the monitoring wells (RW-5 through RW-12). Monitoring well RW-13 was sampled October 7, 2002. Diesel was detected in wells RW-1 (634 µg/L), RW-2 (108,000 µg/L), RW-6 (8,960 µg/L), RW-7 (280 µg/L), RW-11 (7,160 µg/L) and RW-13 (2,470 µg/L). Benzene was detected in wells RW-1, RW-2, RW-4 and RW-6 ranging from 0.516 µg/L to 5.86 µg/L.

Remediation System Shutdown and Compliance Groundwater Monitoring

The remediation system was shutdown on November 25, 2002. Free product was monitored weekly in the recovery wells during December 2002. No measurable free product was observed. Total free product recovery during cleanup activities was approximately 1,500 gallons. No estimate of dissolved product removed during active remediation was calculated.

Follow shutdown of the remediation system, four consecutive quarters of groundwater monitoring were completed from wells RW-1 through RW-13. Each sampling event also included samples collected from Lane County Production Well #2 (PW2) and monitoring wells MW-2 through MW-6 which were installed several years previously around the gasoline and diesel tanks associated with the vehicle fueling area. Sampling events occurred in January, April, July and October 2003. Samples were analyzed for diesel, BTEX and PAH compounds. Diesel was detected in several wells to a maximum concentration of 430,000 µg/L detected in RW-2 in July

2003. Benzene was not detected in any of the samples. Several non-carcinogenic PAHs were detected. Three carcinogenic PAH compounds were detected including chrysene, benzo(a)pyrene and benzo(a)anthracene at maximum concentrations of 0.95 µg/L, 0.10 µg/L and 0.60 µg/L.

Risk-Based Site Evaluation and Public Participation

A Conceptual Site Model was developed for the site by Bergeson-Boese & Associates, Inc. and included in the report referenced above. Based on the primary land use in the area, residential and urban residential receptor scenarios were excluded from the CSM. Occupational, construction and excavation workers were considered appropriate receptors for the site. All of the DEQ generic exposure pathways for occupational, construction and excavation workers from the guidance document *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (RBDM) dated September 29, 1999, were considered appropriate for the site with the exception of the following.

> Contaminants in groundwater being ingested and/or inhaled – No water supply wells used for domestic use currently exist at or near the site. The site and surrounding area are supplied with municipal water and will continue to be in the future. Contamination appears to be limited to the site.

Soil samples collected above the groundwater fluctuation zone indicate that diesel-range petroleum hydrocarbons were below or within 12% of the Soil Matrix Cleanup Level for the site. Groundwater concentrations detected during the final four quarters of groundwater monitoring were compared to the applicable generic risk-based concentrations listed in the RBDM guidance document. All detected concentrations were below the applicable generic risk-based concentrations.

As part of the public participation process required under OAR 340-122-0260, the DEQ sent letters to each adjacent property owners on April 8, 2004, asking for any comments on the proposed risk-based closure of the site by May 10, 2004. No comments were received.

Regulatory Site Closure

All conditions for site closure pursuant to Risk-Based Cleanups have been met.

The Department's current determination will not be applicable if new or undisclosed facts show that the cleanup does not comply with the referenced rules. The Department's determination also does not apply to any other conditions at the site, other than the release of the petroleum product specifically addressed in your reports.

Please note that pursuant to OAR 340-122-360 (2), a copy of your reports must be retained until ten (10) years after the first sale of the property.

Your efforts to comply with the regulations to ensure that this property has been adequately cleaned up have been appreciated. If you have any questions regarding this matter, please feel free to contact me at (541) 686-7838 extension 232.

Sincerely,

Dave Belyea
Natural Resource Specialist

Merlyn L. Hough
Regional Tanks Program Manager

DRB/drb
c:/laneCoDeltaComplexIII.nfa

cc: Stephen Lawn,
Bergeson-Boese & Associates, Inc.

Troy Likens,
Cascade Transfer

Dan Landry
Environmental Management Services, Inc.

EMC | Grants Pass * Jacksonville * Medford, OR
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- Engineers/Scientists, LLC

EXHIBIT F

RISK-BASED CONCENTRATIONS ABRIDGED

State of Oregon Department of Environmental Quality

RISK-BASED CONCENTRATIONS ABRIDGED FOR **LEAKING UNDERGROUND STORAGE TANKS (LUST)** AND H**EATING** O**IL** T**ANKS (HOT)**

Contaminated Medium →		SOIL mg/Kg (ppm)										SOIL mg/Kg (ppm)						SOIL mg/Kg (ppm)						SOIL mg/Kg (ppm)						GROUNDWATER (µg/L (ppb))					
Exposure Pathway →		Soil Ingestion, Dermal Contact, and Inhalation (RBC_{ss})										Volatilization to Outdoor Air (RBC_{so})						Vapor Intrusion into Buildings (RBC_{si})						Leaching to Groundwater (RBC_{sw})						Ingestion & Inhalation from Tapwater (RBC_{tw})					
Receptor Scenario →		Residential		Urban Residential		Occupational		Construction Worker		Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational	
Direct or Indirect Pathway (see notes)		DC		DC		DC		DC		DC		IVS		IVS		IVS		IVS		IVS		IVS		IS		IS		IS		DS		DS		DS	
Contaminant	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note
Benzene	c, v	8.2		24		37		380		11,000	>Csat	11		27		50		0.16		0.38		2.1		0.023		0.10		0.10		0.46		2.0		2.1	
Toluene	nc, v	5,800	>Csat	12,000	>Csat	88,000	>Csat	28,000	>Csat	770,000	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	84		340		490		1,100		4,400		6,300	
Ethylbenzene	c, v	34		110		150		1,700	>Csat	49,000	>Csat	36		85		160		1.3		3.0		17		0.22		0.94		0.90		1.5		6.7		6.4	
Xylenes	nc, v	1,400	>Csat	2,900	>Csat	25,000	>Csat	20,000	>Csat	560,000	>Csat	-	>Csat	-	>Csat	-	>Csat	160		160		-	>Csat	23		87		100		190		710		830	
iso-Propylbenzene (cumene)	nc, v	3,500	>Csat	7,000	>Csat	57,000	>Csat	27,000	>Csat	750,000	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	96		-	>Csat	-	>Csat	440		1,800		2000	
Trimethylbenzene, 1,2,4-	nc, v	430		860		6,900	>Csat	2,900	>Csat	81,000	>Csat	-	>Csat	-	>Csat	-	>Csat	140		140		-	>Csat	10		43		48		54		230		250	
Trimethylbenzene, 1,3,5-	nc, v	430	>Csat	860	>Csat	6,900	>Csat	2,900	>Csat	81,000	>Csat	-	>Csat	-	>Csat	-	>Csat	98		98		-	>Csat	11		45		53		59		240		280	
Acenaphthene	nc, v	4,700	>Csat	9,400	>Csat	70,000	>Csat	21,000	>Csat	590,000	>Csat	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Csat	-	>Csat	-	>Csat	510		2,400		2,500	
Anthracene	nc, v	23,000	>Csat	47,000	>Csat	350,000	>Csat	110,000	>Csat	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	>S
Benz[a]anthracene	c,v	1.1		2.5		21	>Csat	170	>Csat	4,800	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	1.6		6.0		-	>Csat	0.030		0.11		0.38	
Benzo[b]fluoranthene	c, nv	1.1		2.5		21	>Csat	170	>Csat	4,900	>Csat	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>Csat	-	>Csat	-	>Csat	0.25		0.80		-	>S
Benzo[k]fluoranthene	c, nv	11	>Csat	25	>Csat	210	>Csat	1,700	>Csat	49,000	>Csat	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	>S
Benzo[a]pyrene (BaP equivalents)**	c, nv	0.11		0.25		2.1		17	>Csat	490	>Csat	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	4.4		-	>Csat	-	>Csat	0.025		0.080		0.47	
Chrysene	c, nv	110	>Csat	250	>Csat	2,100	>Csat	17,000	>Csat	490,000	>Csat	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	>S
Dibenz[a,h]anthracene	c, nv	0.11		0.25		2.1		17	>Csat	490	>Csat	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>Csat	-	>Csat	-	>Csat	0.025		0.080		0.47	
Fluoranthene	nc, nv	2,400	>Csat	4,800	>Csat	30,000	>Csat	10,000	>Csat	280,000	>Csat	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	>S
Fluorene	nc, v	3,100	>Csat	6,300	>Csat	47,000	>Csat	14,000	>Csat	390,000	>Csat	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Csat	-	>Csat	-	>Csat	280		1,400		1,300	
Indeno[1,2,3-cd]pyrene	c, nv	1.1		2.5		21	>Csat	170	>Csat	4,800	>Csat	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>Csat	-	>Csat	-	>Csat	-	>S	-	>S	-	>S
Naphthalene	c, v	5.3		25		23		580		16,000	>Csat	6.4		15		83		6.4		15		83		0.077		0.37		0.34		0.17		0.78		0.72	
Pyrene	nc, v	1,800	>Csat	3,600	>Csat	23,000	>Csat	7,500	>Csat	210,000	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	-	>Csat	110		-	>S	-	>S
MTBE (methyl t-butyl ether)	c, v	250		730		1,100		12,000	>Csat	320,000	>Csat	340		810		1,500		8.5		20		110		0.11		0.50		0.54		14		64		68	
EDB (1,2-dibromoethane)	c, v	0.16		0.53		0.73		9.0		250		0.15		0.35		0.65		0.012		0.028		0.16		0.00012		0.00056		0.00056		0.0075		0.034		0.034	
EDC (1,2-dichloroethane)	c, v	3.6		12		16		200		5,600	>Csat	3.4		8.1		15		0.077		0.18		1.0		0.0028		0.013		0.013		0.17		0.78		0.78	
Lead	nc, nv	400	L	400	L	800	L	800	L	800	L	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	30	L	30	L	30	L	15	L	15	L	15	L
Generic Gasoline	nc, v	1,200		2,500		20,000		9,700		>Max		5,900		5,900		69,000		94		94		>Max		31		31		130		110		110		450	
Generic Diesel/Heating Oil	nc, v	1,100		2,200		14,000		4,600		>Max		>Max		>Max		>Max		>Max		>Max		>Max		9,500		9,500		>Max		100		100		430	
Generic Mineral/Insulating Oil	nc, nv	2,800		5,700		36,000		11,000		>Max		>Max		>Max		>Max		>Max		>Max		>Max		>Max		>Max		>Max		300		300		1,300	

State of Oregon Department of Environmental Quality

Contaminated Medium →	GROUNDWATER (µg/L (ppb))						GROUNDWATER (µg/L (ppb))						GROUNDWATER (µg/L (ppb))		Soil Gas (µg/m³)						AIR (µg/m³)					
Exposure Pathway →	Volatilization to Outdoor Air (RBC_{wo})						Vapor Intrusion into Buildings (RBC_{wi})						GW in Excavation (RBC_{we})		Inhalation (RBC_{SV})						Inhalation (RBC_{air})					
Receptor Scenario →	Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Construction & Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational	
Direct or Indirect Pathway (see notes)	IVW		IVW		IVW		IVW		IVW		IVW		DS		ICA		ICA		ICA		DCA		DCA		DCA	
Contaminant	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note	
Benzene	c, v	3,100		7,400		14,000		210		510		2,800		1,800		72		170		1,600		0.36		0.85		1.6	
Toluene	nc, v	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	220,000		1,000,000		1,000,000		21,900,000		5200		5200		22000	
Ethylbenzene	c, v	9,900	>S	23,000	>S	43,000	>S	620	>S	1,500	>S	8,200	>S	4,500		220		530		4,900		1.1		2.7		4.9	
Xylenes	nc, v	-	>S	-	>S	-	>S	86,000		86,000		-	>S	23,000		21,000		21,000		440,000		100		100		440	
iso-Propylbenzene (cumene)	nc, v	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	51,000		83,000		83,000		1,800,000		420		420		1800	
Trimethylbenzene, 1,2,4-	nc, v	-	>S	-	>S	-	>S	50,000		50,000		-	>S	6,300		13,000		13,000		260,000		63		63		260	
Trimethylbenzene, 1,3,5-	nc, v	-	>S	-	>S	-	>S	36,000		36,000		-	>S	7,500		13,000		13,000		260,000		63		63		260	
Acenaphthene	nc, v	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv
Anthracene	nc, v	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv
Benz[a]anthracene	c, v	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	0.017		0.033		0.20	
Benzo[b]fluoranthene	c, nv	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	0.017		0.033		0.20	
Benzo[k]fluoranthene	c, nv	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	-	>Pv	-	>Pv	-	>Pv
Benzo[a]pyrene (BaP equivalents)**	c*, nv	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	0.0017		0.0021		0.0088	
Chrysene	c, nv	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	1.7		3.3		-	>Pv
Dibenz[a,h]anthracene	c, nv	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	-	>Pv	-	>Pv	-	>Pv
Fluoranthene	nc, nv	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	-	>Pv	-	>Pv	-	>Pv
Fluorene	nc, v	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv
Indeno[1,2,3-cd]pyrene	c, nv	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	-	>Pv	-	>Pv	-	>Pv
Naphthalene	c, v	3,600		8,500		16,000	>S	840		2,000		11,000		500		17		39		360		0.083		0.20		0.36	
Pyrene	nc, v	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv	-	>Pv
MTBE (methyl t-butyl ether)	c, v	350,000		830,000		1,500,000		67,000		160,000		870,000		63,000		2,200		5,100		47,000		11		26		47	
EDB (1,2-dibromoethane)	c, v	180		430		790		45		110		590		27		0.94		2.2		20		0.0047		0.011		0.02	
EDC (1,2-dichloroethane)	c, v	2,100		4,900		9,000		300		700		3,900		630		22		51		470		0.11		0.26		0.47	
Lead	nc, nv	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	-	>S	-	NV	-	NV	-	NV	-	>Pv	-	>Pv	-	>Pv
Generic Gasoline	nc, v	>S		>S		>S		22,000		22,000		>S		14,000		79,000		79,000		1,700,000		390		390		1,700	
Generic Diesel/Heating Oil	nc, v	>S		>S		>S		>S		>S		>S		>S		21,000		21,000		440,000		100		100		440	
Generic Mineral/Insulating Oil	nc, nv	>S		>S		>S		>S		>S		>S		>S		30,000		30,000		620,000		150		150		620	

NOTES:

Direct or Indirect Pathway Codes have the following meanings: DC means it is a direct contact pathway with a limiting value of Csat. IVS means it is an indirect pathway with a limiting value of Csat. DS means it is a direct contact pathway with a limiting value equal to the solubility, S. IVW means it is an indirect pathway with a limiting value equal to the solubility, S. DPA or ICA means it has a limiting value equal to the vapor pressure, Pv.

The symbols in the "**Note**" columns are explained below. The references can be found in *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (DEQ, 2003)

c	This chemical is a known or suspected carcinogen. The RBCs in this row were calculated using equations for carcinogens. To calculate the appropriate RBCs for non-carcinogenic effects, you need to first change the toxicity basis in the spreadsheet from "c" to "nc", and then re-calculate the RBCs. You should use the lower of the calculated RBCs for each exposure scenario. This summary table (but not the associated spreadsheet) includes the lower of the carcinogenic and non-carcinogenic RBCs.
>Csat	This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to "ChemData" page for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present. See Section B.2.1.4 for additional information.
L	The values for lead reported in this table are not derived from the equations developed in Appendix B. See Section B.3.4 for the source of the lead numbers and information on applying them. Note that the lead values for RBCsw are reported as mg/L rather than mg/kg since they are the results of leaching tests, not soil measurements.
>Max	The constituent RBC for this pathway is greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, these substances are not expected to pose risks in the scenario shown.
NA	Not Available.
nc	This chemical is a noncarcinogen. The RBCs in this row were calculated using equations for noncarcinogens described in Appendix B.
nv	This chemical is considered "nonvolatile" for purposes of the exposure calculations.
>Pv	The air concentration reported for the RBC exceeds the vapor pressure of the pure chemical. It can be assumed that this constituent cannot create an unacceptable risk by this pathway. See Section B.2.1.4 for additional information.
>S	This groundwater RBC exceeds the solubility limit. Refer to Appendix D for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present. See Section B.2.1.4 for additional information.
v	This chemical is classified as "volatile" for purposes of the exposure calculations in this document.
**	Carcinogenic PAHs are considered in aggregate as a chemical class. RBCs for individual carcinogenic PAHs are provided for convenience.
-	When "Show All Values" is not selected on the Main Menu, all RBC values for indirect pathways that exceed a limit (Csat, S, or Pv) are removed from the table and replaced with "-". If you suspect that a chemical may be present at high concentrations on airborne dust rather than vapor, the vapor pressure limit does not apply, so
c*	use the RBCair value. The values shown are based primarily on a cancer endpoint, but there are one or more scenarios where they are based on a noncancer endpoint.

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EXHIBIT G

VICINITY MAP


VICINITY MAP
3040 N Delta Hwy
SUBSURFACE INVESTIGATION
3040 N Delta Hwy
Delta North Connect
Green Lake Dr
Greer Acres Rd
Balboa St
N Delta Hwy
Randy Pepé Beltline
Acacia Ave
Google Earth
1000 ft
N