



**ECOLOGY TECHNOLOGY**  
Environmental Contamination Remediation

RECEIVED

SEP 30 1992

DEPT. OF ECOLOGY

September 29, 1992

Mr. Joe Hickey  
Department of Ecology  
N.W. Regional Office  
3190 - 160th Avenue S.E.  
Bellevue, WA 98008-5452

Dear Mr. Hickey,

Enclosed is laboratory data depicting the bioremediation process and current status of the diesel range petroleum contaminated soil Pacific Telecom, Inc. / Cascade Autovon presently has on their site at 12727 - 412th Avenue S.E. in North Bend, WA.

One UST containing diesel fuel was removed at the site and related contaminated soil was excavated and stockpiled on site by B & C Co. ECO-TEC, Inc. was retained by PTI on March 9, 1992 to perform soil bioremediation services. The approx. 350 cubic yards of soil were placed on new 10 mil visqueen with a bermed perimeter. 4" slotted ADS pipe was placed on the visqueen prior to soil placement (see attached "Cell Detail") to allow oxygen access to the lower depths of the soil. Bio-nutrients, EnviroMech Gold and soil conditioners were applied to the soil at the time of placement in the treatment cell. The soil was covered with 4 mil visqueen and weighted to prevent volatilization and excess moisture accumulation. The soil was sampled on May 20, 1992, and the results are enclosed ( 5-20-01, -02, -03, -04, -05 ). Samples -04 & -05 reported contaminant levels that were marginally above WDOE cleanup guidelines.

ECO-TEC was concerned that there may be other "Hot Spots" within the treatment area and a resampling was performed on July 8, 1992 and the results of that sampling are enclosed, ( 7-8-921, 922, & 923). Sample 7-8-922 was taken from the lower 2" of the treatment area, just above the surface of the Visqueen liner where some moisture had accumulated.

Having discovered this "Hot Spot", Weber Construction was retained by ECO-TEC to mope in a track hoe and remove the upper layers of soil and allow exposure of the lower extremes of the treatment area for moisture evaporation and enhanced microbial activity.

*Soil • Water • Air  
Services • Products • Equipment*

PO Box 1113 • Issaquah, WA 98027-1113 • (206) 392-0304

After allowing the natural microbial processes to occur, the lower extremes of the treatment area, which are currently exposed were visually inspected for the presence of petroleum hydrocarbons. No sheen was present and no petroleum odors were apparent.

Subsequent to the lack of visual indications of petroleum presence, the lower extremes of the treatment cell were sampled on 9/25/92 and the analysis results are enclosed, ( RH-929-01, -02, -03 ). As can be seen from the enclosed data, the soil has been remediated to below the current WDOE cleanup guidelines and no "Hot Spots" are present.

Based upon the enclosed information, I am requesting that you issue a letter indicating that this cleanup effort has met or bettered the criteria established by WDOE for soil treatment.

Thank you for all your assistance in the past and for you attention to this matter as well.

Sincerely,

  
Herb Pearce for  
ECO-TEC, Inc.

ECO-TEC	Client Project ID: Cascade Autovon, 5-20-06	Sampled: May 20, 1992
P.O. Box 1113	Matrix Descript: Soil	Received: May 20, 1992
Issaquah, WA 98027	Analysis Method: EPA 3550/8015	Extracted: May 21, 1992
Attention: Herb Pearse	First Sample #: 205-1032	Analyzed: Jun 1, 1992
		Reported: Jun 4, 1992

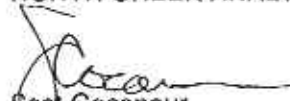
**TOTAL PETROLEUM HYDROCARBONS (WTPH-D)**

Sample Number	Sample Description	Extractable Hydrocarbons mg/kg (ppm)	Surrogate Recovery %
205-1032	5-20-01	83	74
205-1033	5-20-02	82	72
205-1034	5-20-03	96	71
205-1035	5-20-04	210	79
205-1036	5-20-05	210	64
BLK052192	Method Blank	N.D.	64

<b>Detection Limits:</b>	<b>10</b>
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Extractable Hydrocarbons are quantitated as diesel range organics (nC8 - nC24). Surrogate recovery reported is for 2-Fluorobiphenyl. Analytes reported as N.D. were not present above the stated limit of detection.

NORTH CREEK ANALYTICAL inc


 Scot Cocanour  
 Laboratory Director

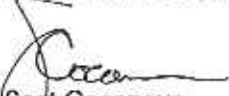
ECO-TEC	Client Project ID: Cascade Autovon, 5-20-06	
P.O. Box 1113	Matrix: Soil	
Issaquah, WA 98027	Analysis for: Total Solids	Received: May 20, 1992
Attention: Herb Pearce	First Sample #: 205-1032	Reported: Jun 4, 1992

**LABORATORY ANALYSIS FOR: Total Solids**

Sample Number	Sample Description	Sample Result %
205-1032	5-20-01	88
205-1033	5-20-02	85
205-1034	5-20-03	87
205-1035	5-20-04	86
205-1036	5-20-05	86

North Creek Analytical routinely provides analytical results for soils, sediments or sludges on a WET WEIGHT "as received" basis. To attain dry weight equivalents for regulatory compliance, divide the soil result by the decimal fraction of percent solids.

**NORTH CREEK ANALYTICAL Inc**

  
Scott Cocanour  
Laboratory Director

ECO-TEC P.O. Box 1113 Issaquah, WA 98027 Attention: Herb Pearse	Client Project ID: Cascade Autovon Method : EPA 3510 or 3550/8015 Sample Matrix : Soil Units : mg/kg QC Sample #: BLK052192	Analyst : D. Harmon Extracted: May 21, 1992 Analyzed: May 21, 1992 Reported: Jun 4, 1992
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## QUALITY CONTROL DATA REPORT

ANALYTE	Diesel Fuel
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Sample Conc.: N.D.

Spike Conc.  
Added: 66

Conc. Matrix  
Spike: 52

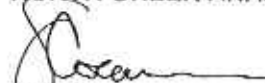
Matrix Spike  
% Recovery: 79

Conc. Matrix  
Spike Dup.: 50

Matrix Spike  
Duplicate  
% Recovery: 76

Relative  
% Difference: 3.9

NORTH CREEK ANALYTICAL inc

  
 Scot Cocanour  
 Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011  
 Phone (206) 481-9200 • FAX (206) 485-2992

CHAIN OF CUSTODY REPORT

CLIENT: *ECO-TEC, INC.*  
 ADDRESS: *P.O. Box - 1113  
 ISSAQUAH, WA. 98027*  
 PHONE: *(206) 392-0304*  
 PROJECT NAME: *CASCADE AUTOM*  
 PROJECT NUMBER: *5-20-06*  
 SAMPLED BY: *A.R. Leann*

REPORT TO: *ECO-TEC, INC.*  
 BILLING TO: *ECO-TEC, INC.*  
 P.O. NUMBER: *5-20-06*

SAMPLE NUMBER	SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION	MATRIX (M, S, D)	# OF CONT.	SAMPLING DATE / TIME	ANALYSTS REQUESTED	REMARKS	LABORATORY NUMBER
1	5-20-01	S	1	5/20/92 2:12P		<i>Brown West-Cent.</i>	<i>2051032</i>
2	5-20-02	S	1	5/20/92 2:08P		<i>West End</i>	<i>2051033</i>
3	5-20-03	S	1	5/20/92 2:16P		<i>Center</i>	<i>2051034</i>
4	5-20-04	S	1	5/20/92 2:20P		<i>Brown East-Cent.</i>	<i>2051035</i>
5	5-20-05	S	1	5/20/92 2:25P		<i>East End</i>	<i>2051036</i>
6							
7							
8							
9							
10							

RELINQUISHED BY: *[Signature]* DATE: *5/20/92*  
 FIRM: *ECO-TEC, INC.* TIME: *3:55 P*  
 RECEIVED BY: *[Signature]* DATE: *05.20.92*  
 FIRM: *NCA* TIME: *3:55*  
 RECEIVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 FIRM: \_\_\_\_\_

SAMPLES KNOWN TO BE HAZARDOUS?  
 NO YES? DESCRIBE ON BACK

SAMPLE RECEIPT CONDITION:  
 GOOD VIOLATED  
 COOL (< 4° C)? YES NO

RECEIVED BY: *[Signature]* DATE: \_\_\_\_\_  
 FIRM: \_\_\_\_\_

ECO-TEC	Client Project ID: Cascade Autovon, #5-20-06A		
P.O. Box 1113	Matrix: Soil		
Issaquah, WA 98027	Analysis for: Total Solids	Received: Jul 8, 1992	
Attention: Herb Pearse	First Sample #: 207-0358	Reported: Jul 22, 1992	

**LABORATORY ANALYSIS FOR: Total Solids**

Sample Number	Sample Description	Sample Result %
207-0358	7-8-921	85
207-0359	7-8-922	82
207-0360	7-8-923	87

North Creek Analytical routinely provides analytical results for soils, sediments or sludges on a WET WEIGHT "as received" basis. To attain dry weight equivalents for regulatory compliance, divide the soil result by the decimal fraction of percent solids. The results in this report apply only to the samples analyzed, as indicated on the custody document. This analytical report is to be reproduced only in its entirety.

NORTH CREEK ANALYTICAL inc

*Scot Cocanour*  
Scot Cocanour  
Laboratory Director

ECO-TEC	Client Project ID: Cascade Autovon, #5-20-06A	Sampled: Jul 8, 1992
P.O. Box 1113	Matrix Descript: Soil	Received: Jul 8, 1992
Issaquah, WA 98027	Analysis Method: EPA 3550/8015	Extracted: Jul 16, 1992
Attention: Herb Pearse	First Sample #: 207-0358	Analyzed: Jul 20, 1992
		Reported: Jul 22, 1992

**TOTAL PETROLEUM HYDROCARBONS (WTPH-D)**

Sample Number	Sample Description	Extractable Hydrocarbons mg/kg (ppm)	Surrogate Recovery %
207-0358	7-8-921	81	76
207-0359	7-8-922	310	78
207-0360	7-8-923	130	74
BLK071692	Method Blank	N.D.	83

**Detection Limits: 10**

Extractable Hydrocarbons are quantitated as diesel range organics (nC12 - nC24). Surrogate recovery reported is for 2-Fluorobiphenyl. Analytes reported as N.D. were not present above the stated limit of detection.

NORTH CREEK ANALYTICAL inc

*Scot Cocanour*  
(for)  
Scot Cocanour  
Laboratory Director



ECO-TEC P.O. Box 1113 Issaquah, WA 98027 Attention: Herb Poarse	Client Project ID: Cascade Autovon, #5-20-06A EPA Method: 3550/8015 Sample Matrix: Soil Units: mg/kg (ppm) QC Sample #: BLK071692	Analyst: D. Harmon  Extracted: Jul 16, 1992 Analyzed: Jul 20, 1992 Reported: Jul 22, 1992
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## QUALITY CONTROL DATA REPORT

ANALYTE	Diesel Fuel
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Sample Conc.:	N.D.
Spike Conc. Added:	67
Conc. Matrix Spike:	65
Matrix Spike % Recovery:	98
Conc. Matrix Spike Dup.:	59
Matrix Spike Duplicate % Recovery:	89
Upper Control Limit %:	113
Lower Control Limit %:	66
Relative % Difference:	9.7
Maximum RPD:	24

NORTH CREEK ANALYTICAL inc

*Tom Barcher*  
 Scot Cocanour  
 Laboratory Director

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

8x R

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## CHAIN OF CUSTODY REPORT

CLIENT: <i>ECO-TEC, INC.</i> ADDRESS: <i>P.O. Box -1113</i> <i>ISSAQUAH, WA 98027-1113</i> PHONE: <i>(206) 392-0304</i> PROJECT NAME: <i>CASCADE AUTOMON</i> PROJECT NUMBER: <i>5-20-06A</i> SAMPLED BY: <i>Hubb Lewis</i>	REPORT TO: <i>ECO-TEC, INC.</i> BILLING TO: <i>ECO-TEC, INC.</i> P.O. NUMBER: <i>5-20-06A</i>	2-8 HOUR RUSH ( +150%) 24 HOUR RUSH ( +100%) 2-3 DAY RUSH ( +75%) 5 DAY RUSH ( +50%) 10 DAY STANDARD ( LIST PRICE)	X X X	
ANALYSIS REQUESTED WTPH-D				
SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION	MATRIX (M, S, O)	# OF CONT.	SAMPLING DATE / TIME	REMARKS LABORATORY NUMBER
1 7-8-921	S	1	7/8/92 11:45A	N-10 X E-10 X 2.5' 2070358
2 7-8-922	S	1	7/8/92 12:05P	GREY SAND BOTTOM 359
3 7-8-923	S	1	7/8/92 12:45P	S-10 X E-10 X 2.5' 360
4				
5				
6				
7				
8				
9				
10				
RELINQUISHED BY: <i>Hubb Lewis</i>		DATE: <i>7/8/92</i>		RECEIVED BY: <i>Jan Vailly</i>
FIRM: <i>ECO-TEC, INC.</i>		TIME: <i>2:58 PM</i>		FIRM: <i>NCA</i>
RELINQUISHED BY:		DATE:		RECEIVED BY:
FIRM:		TIME:		FIRM:
SAMPLES KNOWN TO BE HAZARDOUS? YES/ NO		SAMPLE RECEIPT CONDITION: PRESERVED? YES/ NO		VIOLATED YES/ NO
		GOOD COOL ( 4° C)?		YES/ NO
				PAGE 1 OF 1

*07 CB-012*  
*258*

Date of Report: September 28, 1992  
 Samples Submitted: September 25, 1992  
 Lab Traveler: 9209-039  
 Project: RH-929

Matrix: Soil  
 Units: mg/Kg (ppm)  
 Date Extracted: September 25, 1992  
 Date Analyzed: September 25, 1992

## WTPH-D

Sample #	Dilution Factor	TPH	o-terphenyl Surrogate Recovery
RH-929-01	1	<25	97%
RH-929-02	1	<25	97%
RH-929-03	1	30	97%

QUALITY ASSURANCE

Sample #:RH-929-03

Method Blank	1	<25	110%
Sample Conc.	1	30	97%
Duplicate Conc.	1	30	91%
RPD		14%	
Spike Blank @ 102 ppm Concentration	1	79	110%
% Recovery		77%	
Spike Blank Duplicate Concentration	1	81	110%
% Recovery		79%	
RPD		2.5%	

CHAIN OF CUSTODY RECORD

ON-SITE ENVIRONMENTAL INC.

Client: ECO-TEC, Inc.

Project Manager: HERO REARSE

Project #: RH-929

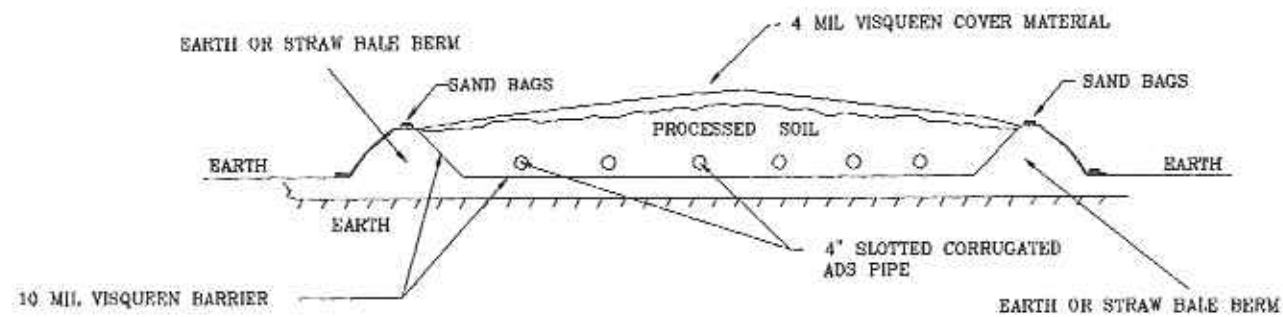
Project Name: PTI-COMMUNICATIONS

09-039

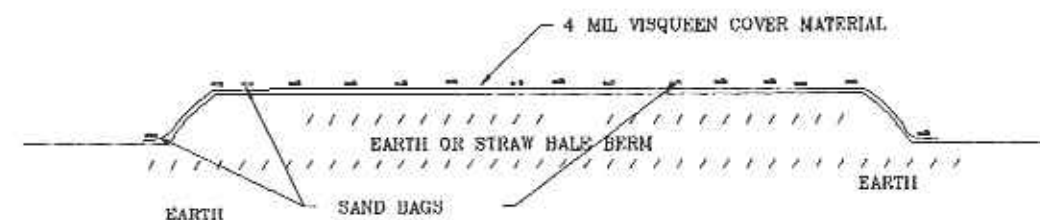
2859 152nd Ave. NE  
Redmond, WA 98052  
(206) 883-3881

dash	Samole Number	Date Sampled	Type	# Jars	Analysis Required	Comments
	RH-929-01	9/24/92	Soil	1	WTPH-D	
	RH-929-02	9/24/92	"	1	"	
	RH-929-03	9/24/92	"	1	"	
Submitted: <i>Bob Willard</i>		date: 9/25/92	Received by: <i>Bob Willard</i>		date: 9/25/92	
Firm: ECO-TEC		time: 9:44A	Firm: OSE		time: 9/45 Am.	
Submitted:		date:	Received by:		date:	
Firm:		time:	Firm:		time:	

# TEMPORARY TREATMENT CELL (APPROX 40' WIDE BY 100' LONG)



CROSS SECTION VIEW



END VIEW

\*not to scale\*

LAND TECHNOLOGIES

18000 Tule Avenue, N.E.  
Portland, OR 97228  
(503) 825-9727 (2003) (503) 825-5274 Fax



DESIGNED BY: JTB  
DRAWN BY: JTB  
CHECKED BY: JTB  
DATE: 4/23/02  
SCALE: not to scale

TREATMENT CELL CELL DETAIL

ECO-TEC INC.

SHEET  
1 OF 1  
DRAWING NUMBER  
YD02CEL