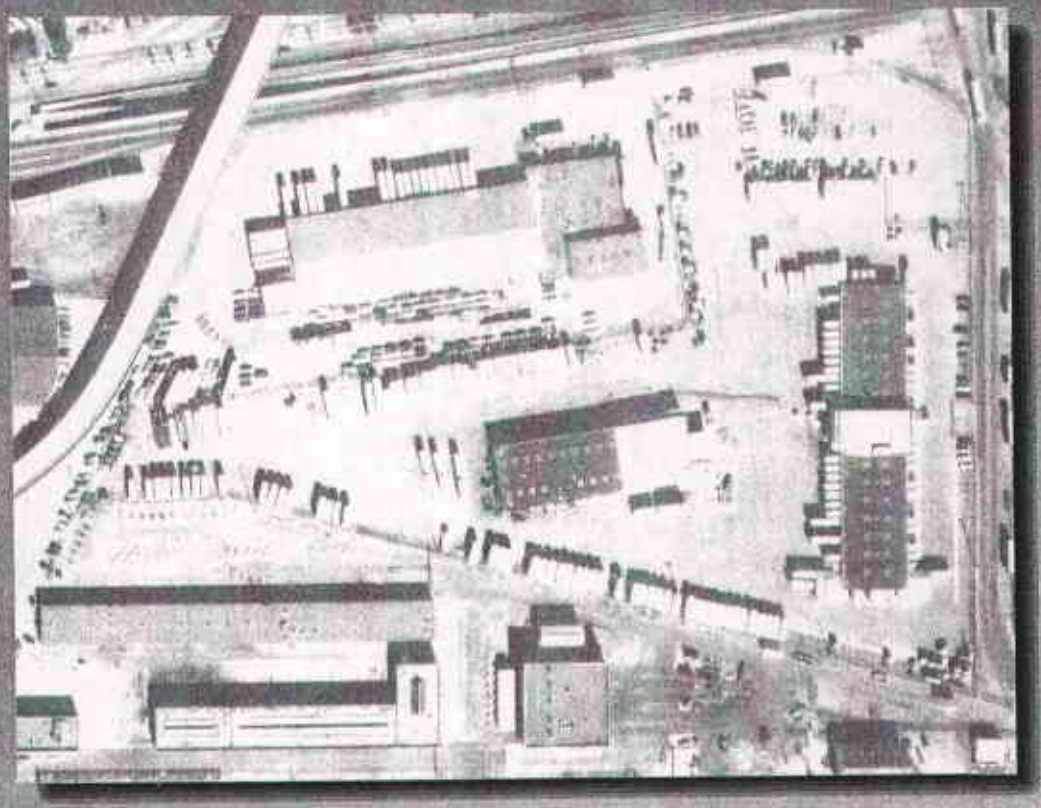
ITSI Innovative Technical Solutions, Inc.

PORT OF OAK

ADDITIONAL SITE CHARACTERIZATIO AND REMEDIAL ACTION PLAN FOR 2225 AND 2277 SEVENTH STREET OAKLAND, CALIFORNIA



Prepared for: Port of Oakland
Environmental Health and Safety Compliance
530 Water Street, 2nd Floor
Oakland, CA 94607

Prepared by: Innovative Technical Solutions, Inc.
7700 Edgewater, Suite 306
Oakland, CA 94621

May

FRIEDMAN & BRUYA, INC.
ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

RECEIVED
APR 12 2002

April 10, 2002

Rachel Hess, Project Manager
Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, CA 94598

Dear Ms. Hess:

Included are the results from the testing of material submitted on April 2, 2002 from your Port of Oakland/00-152.15 project. The product samples submitted for forensic evaluation arrived in good condition. Upon their arrival, the samples MFC-18, MFC-19 and MW1-[C-401] were assigned our laboratory project number 204008 and were placed in a refrigerator maintained at 4°C until removed for sample processing.

The samples MFC-18, MFC-19 and MW1-[C-401] were diluted and analyzed using a gas chromatograph with a flame ionization detector (GC/FID) and an electron capture detector (ECD). The data generated yielded information on the boiling range and general chemical composition of the material present. The GC/FID and GC/ECD traces are enclosed. A GC/FID trace of a standard consisting of normal alkanes is also provided for reference purposes.

In addition to the GC/FID/ECD analysis, the samples MFC-18, MFC-19 and MW1-[C-401] were analyzed for paraffin, isoparaffin, aromatic, naphthene, and olefin (PIANO) constituents using a GC fitted with a mass spectrometer (MS); volatile organic compounds using GC/MS; polycyclic aromatic compounds (PAHs) using GC/MS; total metals using inductively coupled plasma (ICP); and organic lead species using GC/ECD. The results of this testing, including the associated quality assurance and charts depicting the relative abundance of polycyclic aromatic hydrocarbons in the samples, are also enclosed.

Please contact us if additional consultation is needed by our firm in the interpretation of the analytical results provided. We appreciate this opportunity to be of service to you and hope you will call if you should have any questions. We will hold your samples for 30 days before disposal unless directed otherwise.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Morrow for

Kurt Johnson, Chemist

Enclosures
ITS0410R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Extracted: 04/02/02
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
MFC-18	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The patterns displayed by these peaks are indicative of a middle distillate such as diesel fuel #2 or heating oil. The medium boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from n-C_9 to n-C_{24} showing a maximum near n-C_{17}. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 300°C. Within this range, the dominant peaks present are indicative of isoprenoids including norpristane, pristane, and phytane. A discernible pattern of peaks characteristic of the normal alkanes was not present. The abundance of isoprenoids in conjunction with the apparent absence of normal alkanes indicates that the fuel present has undergone substantial biological degradation. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Extracted: 04/02/02
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
MFC-19	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The patterns displayed by these peaks are indicative of a middle distillate such as diesel fuel #2 or heating oil. The medium boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from *n*-C_9 to *n*-C_{24} showing a maximum near *n*-C_{17}. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 300°C. Within this range, the dominant peaks present are indicative of isoprenoids including norpristane, pristane, and phytane. A discernible pattern of peaks characteristic of the normal alkanes was not present. The abundance of isoprenoids in conjunction with the apparent absence of normal alkanes indicates that the fuel present has undergone substantial biological degradation. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Extracted: 04/02/02
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
MW1-[C-401]	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The patterns displayed by these peaks are indicative of a middle distillate such as diesel fuel #2 or heating oil. The medium boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from *n*-C_9 to *n*-C_{24} showing a maximum near *n*-C_{17}. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 300°C. Within this range, the dominant peaks present are indicative of isoprenoids including norpristane, pristane, and phytane. A discernible pattern of peaks characteristic of the normal alkanes was not present. The abundance of isoprenoids in conjunction with the apparent absence of normal alkanes indicates that the fuel present has undergone substantial biological degradation. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-01
Client ID MFC-18

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	<0.01
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	<0.01
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	<0.01
Cyclopentane	<0.01
2-Methylpentane	<0.01
DIPE	<0.01
3-Methylpentane	0.01
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-01
Client ID MFC-18

Compound	Weight Percent
n-Hexane	0.24
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	<0.01
2,4-Dimethylpentane	<0.01
Methylcyclopentane	0.04
2,2,3-Trimethylbutane	<0.01
Benzene	<0.01
1-Methylcyclopentene	<0.01
TAME	<0.01
3,3-Dimethylpentane	<0.01
Cyclohexane	0.01
2-Methylhexane	0.01
2,3-Dimethylpentane	<0.01
1,1-Dimethylcyclopentane	<0.01
3-Methylhexane	0.02
c-1,3-Dimethylcyclopentane	<0.01
3-Ethylpentane	<0.01
Isooctane	0.01
t-1,2-Dimethylcyclopentane	<0.01
1-Heptene	<0.01
n-Heptane	0.02
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	<0.01
2,5-Dimethylhexane	<0.01
Methylcyclohexane	0.07
2,4-Dimethylhexane	<0.01

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-01
Client ID MFC-18

Compound	Weight Percent
Ethylcyclopentane	<0.01
t-1,c-2,4-Trimethylcyclopentane	0.01
t-1,c-2,3-Trimethylcyclopentane	0.01
2,3,4-Trimethylpentane	<0.01
Toluene	<0.01
2,3-Dimethylhexane	0.01
2-Methylheptane	0.03
3-Methylheptane	0.02
4-Methylheptane	0.01
3-Ethylhexane	<0.01
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	<0.01
t-1,2-Dimethylcyclohexane	0.06
n-Octane	0.08
1-Ethyl-1-methylcyclopentane	<0.01
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	0.03
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	0.01
3,5-Dimethylheptane	<0.01
n-Propylcyclopentane	<0.01
Ethylbenzene	0.03
2,3-Dimethylheptane	0.03
3,4-Dimethylheptane	<0.01
2-Methyloctane	0.04
m-Xylene	<0.01
p-Xylene	<0.01
3-Methyloctane	0.05
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	<0.01

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-01
Client ID MFC-18

Compound	Weight Percent
n-Nonane	0.25
Isobutylcyclopentane	0.01
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	0.01
3,3-Dimethyloctane	<0.01
n-Butylcyclopentane	0.04
n-Propylbenzene	0.05
2,3-Dimethyloctane	0.04
1-Methyl-3-ethylbenzene	<0.01
1-Methyl-4-ethylbenzene	0.01
2-Methylnonane	0.08
3-Ethyloctane	0.04
3-Methylnonane	0.07
1,3,5-Trimethylbenzene	<0.01
1-Methyl-2-ethylbenzene	0.08
1,2,4-Trimethylbenzene	<0.01
tert-Butylbenzene	<0.01
n-Decane	0.52
Isobutylbenzene	<0.01
Isopropylcyclohexane	0.10
sec-Butylbenzene	0.06
1-Methyl-3-isopropylbenzene	<0.01
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	0.05
1,2,3-Trimethylbenzene	0.19
Indan	<0.01
1-Methyl-3-n-propylbenzene	<0.01
1-Methyl-4-n-propylbenzene	0.04
n-Butylbenzene	0.19
1,3-Dimethyl-5-ethylbenzene	0.07
1,2-Diethylbenzene	0.07
1-Methyl-2-n-propylbenzene	0.06

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-01
Client ID MFC-18

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	0.06
1,2-Dimethyl-4-ethylbenzene	0.09
1,3-Dimethyl-2-ethylbenzene	0.04
1,2-Dimethyl-3-ethylbenzene	0.01
n-Undecane	0.92
1,2,4,5-Tetramethylbenzene	0.08
2-Methylbutylbenzene	0.14
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	0.08
Methylindan	0.16
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	0.41
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	0.60
n-Hexylbenzene	0.42
2-Methylnaphthalene	0.73
n-Tridecane	0.66
1-Methylnaphthalene	0.55
n-Tetradecane	0.35
n-Pentadecane	0.58

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 204008-01
Client ID MFC-18

	Weight Percent
Total Identified Compounds	8.78
Oxygenated Compounds	0.00
Hydrocarbon Compounds	8.78
Unidentified Compounds	91.22
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	<0.01	<0.01		<0.01	<0.01	<0.01
C6	0.24	0.01	<0.01	0.05	<0.01	0.30
C7	0.02	0.03	<0.01	0.07	<0.01	0.12
C8	0.08	<0.1	0.03	0.12	<0.01	<0.25
C9	0.25	0.13	0.34	0.15	<0.01	0.87
C10	0.52	0.23	1.58	<0.01		2.33
C11	0.92		1.50			2.42
C12	0.41		0.42			0.83
C13	0.66					0.66
C14	0.35					0.35
C15	0.58					0.58
Total	4.01	0.40	3.88	0.40	<0.01	8.46

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-02
Client ID MFC-19

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	<0.01
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	<0.01
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	<0.01
Cyclopentane	<0.01
2-Methylpentane	<0.01
DIPE	<0.01
3-Methylpentane	<0.01
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-02
Client ID MFC-19

Compound	Weight Percent
n-Hexane	0.02
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	<0.01
2,4-Dimethylpentane	<0.01
Methylcyclopentane	<0.01
2,2,3-Trimethylbutane	<0.01
Benzene	<0.01
1-Methylcyclopentene	<0.01
TAME	<0.01
3,3-Dimethylpentane	<0.01
Cyclohexane	<0.01
2-Methylhexane	<0.01
2,3-Dimethylpentane	<0.01
1,1-Dimethylcyclopentane	<0.01
3-Methylhexane	<0.01
c-1,3-Dimethylcyclopentane	<0.01
3-Ethylpentane	<0.01
Isooctane	<0.01
t-1,2-Dimethylcyclopentane	<0.01
1-Heptene	<0.01
n-Heptane	0.02
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	<0.01
2,5-Dimethylhexane	<0.01
Methylcyclohexane	0.04
2,4-Dimethylhexane	<0.01

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-02
Client ID MFC-19

Compound	Weight Percent
Ethylcyclopentane	<0.01
t-1,c-2,4-Trimethylcyclopentane	<0.01
t-1,c-2,3-Trimethylcyclopentane	<0.01
2,3,4-Trimethylpentane	<0.01
Toluene	<0.01
2,3-Dimethylhexane	<0.01
2-Methylheptane	0.02
3-Methylheptane	0.02
4-Methylheptane	<0.01
3-Ethylhexane	<0.01
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	<0.01
t-1,2-Dimethylcyclohexane	0.04
n-Octane	0.05
1-Ethyl-1-methylcyclopentane	<0.01
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	0.02
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	0.01
3,5-Dimethylheptane	<0.01
n-Propylcyclopentane	0.01
Ethylbenzene	0.03
2,3-Dimethylheptane	0.03
3,4-Dimethylheptane	<0.01
2-Methyloctane	0.03
m-Xylene	<0.01
p-Xylene	<0.01
3-Methyloctane	0.04
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	<0.01

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-02
Client ID MFC-19

Compound	Weight Percent
n-Nonane	0.12
Isobutylcyclopentane	0.01
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	0.02
3,3-Dimethyloctane	<0.01
n-Butylcyclopentane	0.03
n-Propylbenzene	0.04
2,3-Dimethyloctane	0.03
1-Methyl-3-ethylbenzene	<0.01
1-Methyl-4-ethylbenzene	0.02
2-Methylnonane	0.05
3-Ethyloctane	0.03
3-Methylnonane	0.05
1,3,5-Trimethylbenzene	0.02
1-Methyl-2-ethylbenzene	0.05
1,2,4-Trimethylbenzene	0.02
tert-Butylbenzene	<0.01
n-Decane	0.27
Isobutylbenzene	<0.01
Isopropylcyclohexane	0.04
sec-Butylbenzene	0.03
1-Methyl-3-isopropylbenzene	0.02
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	0.05
1,2,3-Trimethylbenzene	0.13
Indan	<0.01
1-Methyl-3-n-propylbenzene	<0.01
1-Methyl-4-n-propylbenzene	0.02
n-Butylbenzene	0.14
1,3-Dimethyl-5-ethylbenzene	0.12
1,2-Diethylbenzene	0.04
1-Methyl-2-n-propylbenzene	0.04

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-02
Client ID MFC-19

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	0.07
1,2-Dimethyl-4-ethylbenzene	0.08
1,3-Dimethyl-2-ethylbenzene	0.05
1,2-Dimethyl-3-ethylbenzene	0.01
n-Undecane	0.42
1,2,4,5-Tetramethylbenzene	0.09
2-Methylbutylbenzene	0.02
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	0.09
Methylindan	0.09
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	0.18
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	0.25
n-Hexylbenzene	0.24
2-Methylnaphthalene	0.64
n-Tridecane	0.33
1-Methylnaphthalene	0.45
n-Tetradecane	0.32
n-Pentadecane	0.33

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 204008-02
Client ID MFC-19

	Weight Percent
Total Identified Compounds	5.41
Oxygenated Compounds	0.00
Hydrocarbon Compounds	5.41
Unidentified Compounds	94.59
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	<0.01	<0.01		<0.01	<0.01	<0.01
C6	0.02	<0.01	<0.01	<0.01	<0.01	0.02
C7	0.02	<0.01	<0.01	0.04	<0.01	0.06
C8	0.05	<0.1	0.03	0.07	<0.01	<0.25
C9	0.12	0.11	0.29	0.09	<0.01	0.60
C10	0.27	0.16	1.11	<0.01		1.54
C11	0.42		1.20			1.62
C12	0.18		0.24			0.41
C13	0.33					0.33
C14	0.32					0.32
C15	0.33					0.33
Total	2.04	0.27	2.86	0.20	<0.01	5.23

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-03
Client ID MW1-[C-401]

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	0.02
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	0.02
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	0.05
Cyclopentane	0.02
2-Methylpentane	0.18
DIPE	<0.01
3-Methylpentane	0.14
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-03
Client ID MW1-[C-401]

Compound	Weight Percent
n-Hexane	0.16
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	0.01
2,4-Dimethylpentane	0.07
Methylcyclopentane	0.21
2,2,3-Trimethylbutane	<0.01
Benzene	0.04
1-Methylcyclopentene	0.01
TAME	<0.01
3,3-Dimethylpentane	0.02
Cyclohexane	0.08
2-Methylhexane	0.27
2,3-Dimethylpentane	0.12
1,1-Dimethylcyclopentane	0.02
3-Methylhexane	0.31
c-1,3-Dimethylcyclopentane	0.10
3-Ethylpentane	0.03
Isooctane	0.33
t-1,2-Dimethylcyclopentane	0.04
1-Heptene	<0.01
n-Heptane	0.25
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	0.02
2,5-Dimethylhexane	0.09
Methylcyclohexane	0.31
2,4-Dimethylhexane	0.11

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-03
Client ID MW1-[C-401]

Compound	Weight Percent
Ethylcyclopentane	0.08
t-1,c-2,4-Trimethylcyclopentane	0.08
t-1,c-2,3-Trimethylcyclopentane	0.07
2,3,4-Trimethylpentane	0.17
Toluene	<0.01
2,3-Dimethylhexane	0.27
2-Methylheptane	0.20
3-Methylheptane	0.23
4-Methylheptane	0.08
3-Ethylhexane	0.05
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	0.02
t-1,2-Dimethylcyclohexane	0.12
n-Octane	0.10
1-Ethyl-1-methylcyclopentane	<0.01
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	0.05
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	0.05
3,5-Dimethylheptane	0.01
n-Propylcyclopentane	0.02
Ethylbenzene	0.08
2,3-Dimethylheptane	0.05
3,4-Dimethylheptane	0.01
2-Methyloctane	0.05
m-Xylene	<0.01
p-Xylene	<0.01
3-Methyloctane	0.07
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	<0.01

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-03
Client ID MW1-[C-401]

Compound	Weight Percent
n-Nonane	0.02
Isobutylcyclopentane	0.01
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	0.05
3,3-Dimethyloctane	0.02
n-Butylcyclopentane	0.02
n-Propylbenzene	0.14
2,3-Dimethyloctane	0.03
1-Methyl-3-ethylbenzene	0.04
1-Methyl-4-ethylbenzene	<0.01
2-Methylnonane	0.05
3-Ethyloctane	0.03
3-Methylnonane	0.06
1,3,5-Trimethylbenzene	<0.01
1-Methyl-2-ethylbenzene	0.06
1,2,4-Trimethylbenzene	<0.01
tert-Butylbenzene	<0.01
n-Decane	<0.01
Isobutylbenzene	0.04
Isopropylcyclohexane	0.07
sec-Butylbenzene	0.03
1-Methyl-3-isopropylbenzene	0.05
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	<0.01
1,2,3-Trimethylbenzene	0.04
Indan	0.11
1-Methyl-3-n-propylbenzene	0.15
1-Methyl-4-n-propylbenzene	0.05
n-Butylbenzene	0.15
1,3-Dimethyl-5-ethylbenzene	0.04
1,2-Diethylbenzene	0.04
1-Methyl-2-n-propylbenzene	0.03

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 204008-03
Client ID MW1-[C-401]

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	0.05
1,2-Dimethyl-4-ethylbenzene	0.19
1,3-Dimethyl-2-ethylbenzene	0.21
1,2-Dimethyl-3-ethylbenzene	<0.01
n-Undecane	<0.01
1,2,4,5-Tetramethylbenzene	0.16
2-Methylbutylbenzene	0.04
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	0.08
Methylindan	0.16
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	<0.01
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	0.20
n-Hexylbenzene	0.17
2-Methylnaphthalene	0.49
n-Tridecane	<0.01
1-Methylnaphthalene	0.45
n-Tetradecane	0.30
n-Pentadecane	<0.01

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Analyzed: 04/02/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED
Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 204008-03
Client ID MW1-[C-401]

	Weight Percent
Total Identified Compounds	8.72
Oxygenated Compounds	0.00
Hydrocarbon Compounds	8.72
Unidentified Compounds	91.28
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	0.02	0.02		0.02	<0.01	0.06
C6	0.16	0.36	0.04	0.30	<0.01	0.87
C7	0.25	0.83	<0.01	0.55	<0.01	1.63
C8	0.10	1.54	0.08	0.37	<0.01	2.09
C9	0.02	0.25	0.44	0.10	<0.01	0.81
C10	<0.01	0.19	1.55	<0.01		1.74
C11	<0.01		1.05			1.05
C12	<0.01		0.17			0.17
C13	<0.01					<0.01
C14	0.30					0.30
C15	<0.01					<0.01
Total	0.85	3.19	3.33	1.34	<0.01	8.72

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MFC-18	Client:	Innovative Technical Solutions, Inc.
Date Received:	04/02/02	Project:	Port of Oakland/00-152.15
Date Extracted:	04/04/02	Lab ID:	204008-01
Date Analyzed:	04/04/02	Data File:	040416.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	110	54	133
1,2-Dichloroethane-d4	102	48	140
Toluene-d8	105	47	145
4-Bromofluorobenzene	125	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	2-Hexanone	<1,000
Chloromethane	<100	1,3-Dichloropropane	<100
Vinyl chloride	<100	Tetrachloroethene	<100
Bromomethane	<100	Dibromochloromethane	<100
Chloroethane	<100	1,2-Dibromoethane (EDB)	<100
Trichlorofluoromethane	<100	Chlorobenzene	<100
Acetone	<1,000	Ethylbenzene	110
1,1-Dichloroethene	<100	1,1,1,2-Tetrachloroethane	<100
Methylene chloride	<1,000	m,p-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	o-Xylene	<100
trans-1,2-Dichloroethene	<100	Styrene	<100
Diisopropyl ether (DIPE)	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
Ethyl t-butyl ether (ETBE)	<100	n-Propylbenzene	150
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	<100
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
t-Amyl methyl ether (TAME)	<100	2-Chlorotoluene	<100
1,2-Dichloroethane (EDC)	<100	4-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	tert-Butylbenzene	<100
1,1-Dichloropropene	<100	1,2,4-Trimethylbenzene	<100
Carbon Tetrachloride	<100	sec-Butylbenzene	120
Benzene	<100	p-Isopropyltoluene	<100
Trichloroethene	<100	1,3-Dichlorobenzene	<100
1,2-Dichloropropane	<100	1,4-Dichlorobenzene	<100
Bromodichloromethane	<100	1,2-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dibromo-3-chloropropane	<100
4-Methyl-2-pentanone	<1,000	1,2,4-Trichlorobenzene	<100
cis-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
Toluene	<100	Naphthalene	710
trans-1,3-Dichloropropene	<100	1,2,3-Trichlorobenzene	<100
1,1,2-Trichloroethane	<100		

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MFC-19	Client:	Innovative Technical Solutions, Inc.
Date Received:	04/02/02	Project:	Port of Oakland/00-152.15
Date Extracted:	04/04/02	*Lab ID:*	204008-02
Date Analyzed:	04/04/02	Data File:	040417.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	111	54	133
1,2-Dichloroethane-d4	105	48	140
Toluene-d8	107	47	145
4-Bromofluorobenzene	123	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	2-Hexanone	<1,000
Chloromethane	<100	1,3-Dichloropropane	<100
Vinyl chloride	<100	Tetrachloroethene	<100
Bromomethane	<100	Dibromochloromethane	<100
Chloroethane	<100	1,2-Dibromoethane (EDB)	<100
Trichlorofluoromethane	<100	Chlorobenzene	<100
Acetone	<1,000	Ethylbenzene	140
1,1-Dichloroethene	<100	1,1,1,2-Tetrachloroethane	<100
Methylene chloride	<1,000	m,p-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	o-Xylene	<100
trans-1,2-Dichloroethene	<100	Styrene	<100
Diisopropyl ether (DIPE)	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
Ethyl t-butyl ether (ETBE)	<100	n-Propylbenzene	190
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	<100
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
t-Amyl methyl ether (TAME)	<100	2-Chlorotoluene	<100
1,2-Dichloroethane (EDC)	<100	4-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	tert-Butylbenzene	<100
1,1-Dichloropropene	<100	1,2,4-Trimethylbenzene	370
Carbon Tetrachloride	<100	sec-Butylbenzene	180
Benzene	<100	p-Isopropyltoluene	110
Trichloroethene	<100	1,3-Dichlorobenzene	<100
1,2-Dichloropropane	<100	1,4-Dichlorobenzene	<100
Bromodichloromethane	<100	1,2-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dibromo-3-chloropropane	<100
4-Methyl-2-pentanone	<1,000	1,2,4-Trichlorobenzene	<100
cis-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
Toluene	<100	Naphthalene	1,200
trans-1,3-Dichloropropene	<100	1,2,3-Trichlorobenzene	<100
1,1,2-Trichloroethane	<100		

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW1-[C-401]	Client:	Innovative Technical Solutions, Inc.
Date Received:	04/02/02	Project:	Port of Oakland/00-152.15
Date Extracted:	04/04/02	Lab ID:	204008-03
Date Analyzed:	04/04/02	Data File:	040418.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	112	54	133
1,2-Dichloroethane-d4	106	48	140
Toluene-d8	111	47	145
4-Bromofluorobenzene	125	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	2-Hexanone	<1,000
Chloromethane	<100	1,3-Dichloropropane	<100
Vinyl chloride	<100	Tetrachloroethene	<100
Bromomethane	<100	Dibromochloromethane	<100
Chloroethane	<100	1,2-Dibromoethane (EDB)	<100
Trichlorofluoromethane	<100	Chlorobenzene	<100
Acetone	1,100	Ethylbenzene	650
1,1-Dichloroethene	<100	1,1,1,2-Tetrachloroethane	<100
Methylene chloride	<1,000	m,p-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	o-Xylene	<100
trans-1,2-Dichloroethene	<100	Styrene	<100
Diisopropyl ether (DIPE)	<100	Isopropylbenzene	340
1,1-Dichloroethane	<100	Bromoform	<100
Ethyl t-butyl ether (ETBE)	<100	n-Propylbenzene	1,300
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	<100
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
t-Amyl methyl ether (TAME)	<100	2-Chlorotoluene	<100
1,2-Dichloroethane (EDC)	<100	4-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	tert-Butylbenzene	<100
1,1-Dichloropropene	<100	1,2,4-Trimethylbenzene	<100
Carbon Tetrachloride	<100	sec-Butylbenzene	270
Benzene	600	p-Isopropyltoluene	<100
Trichloroethene	<100	1,3-Dichlorobenzene	<100
1,2-Dichloropropane	<100	1,4-Dichlorobenzene	<100
Bromodichloromethane	<100	1,2-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dibromo-3-chloropropane	<100
4-Methyl-2-pentanone	<1,000	1,2,4-Trichlorobenzene	<100
cis-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
Toluene	<100	Naphthalene	1,100
trans-1,3-Dichloropropene	<100	1,2,3-Trichlorobenzene	<100
1,1,2-Trichloroethane	<100		

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	Innovative Technical Solutions, Inc.
Date Received:	Not Applicable	Project:	Port of Oakland/00-152.15
Date Extracted:	04/04/02	Lab ID:	02-290 mb
Date Analyzed:	04/04/02	Data File:	040412.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	113	54	133
1,2-Dichloroethane-d4	106	48	140
Toluene-d8	102	47	145
4-Bromofluorobenzene	121	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	2-Hexanone	<1,000
Chloromethane	<100	1,3-Dichloropropane	<100
Vinyl chloride	<100	Tetrachloroethene	<100
Bromomethane	<100	Dibromochloromethane	<100
Chloroethane	<100	1,2-Dibromoethane (EDB)	<100
Trichlorofluoromethane	<100	Chlorobenzene	<100
Acetone	<1,000	Ethylbenzene	<100
1,1-Dichloroethene	<100	1,1,1,2-Tetrachloroethane	<100
Methylene chloride	<1,000	m,p-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	o-Xylene	<100
trans-1,2-Dichloroethene	<100	Styrene	<100
Diisopropyl ether (DIPE)	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
Ethyl t-butyl ether (ETBE)	<100	n-Propylbenzene	<100
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	<100
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
t-Amyl methyl ether (TAME)	<100	2-Chlorotoluene	<100
1,2-Dichloroethane (EDC)	<100	4-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	tert-Butylbenzene	<100
1,1-Dichloropropene	<100	1,2,4-Trimethylbenzene	<100
Carbon Tetrachloride	<100	sec-Butylbenzene	<100
Benzene	<100	p-Isopropyltoluene	<100
Trichloroethene	<100	1,3-Dichlorobenzene	<100
1,2-Dichloropropane	<100	1,4-Dichlorobenzene	<100
Bromodichloromethane	<100	1,2-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dibromo-3-chloropropane	<100
4-Methyl-2-pentanone	<1,000	1,2,4-Trichlorobenzene	<100
cis-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
Toluene	<100	Naphthalene	<100
trans-1,3-Dichloropropene	<100	1,2,3-Trichlorobenzene	<100
1,1,2-Trichloroethane	<100		

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	MFC-18	Client:	Innovative Technical Solutions, Inc.
Date Received:	04/02/02	Project:	Port of Oakland/00-152.15
Date Extracted:	04/03/02	Lab ID:	204008-01 1/10
Date Analyzed:	04/03/02	Data File:	040333.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	133 vo	35	114
2-Fluorobiphenyl	113	43	116
Terphenyl-d14	103	33	141

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Naphthalene	980	C3-phenanthrenes/anthracenes	550
C1-naphthalenes	3,400	C4-phenanthrenes/anthracenes	<100
C2-naphthalenes	6,600	Fluoranthene	<100
C3-naphthalenes	5,900	Pyrene	<100
C4-naphthalenes	2,200	C1-fluoranthenes/pyrenes	120
Biphenyl	180	C2-fluoranthenes/pyrenes	<100
Acenaphthylene	<100	C3-fluoranthenes/pyrenes	<100
Acenaphthene	150	Benz(a)anthracene	<100
Dibenzofuran	120	Chrysene	<100
Fluorene	480	C1-chrysenes	<100
C1-fluorenes	1,300	C2-chrysenes	<100
C2-fluorenes	1,400	C3-chrysenes	<100
C3-fluorenes	920	C4-chrysenes	<100
Dibenzothiophene	190	Benzo(e)pyrene	<100
C1-dibenzothiophenes	550	Benzo(a)pyrene	<100
C2-dibenzothiophenes	530	Perylene	<100
C3-dibenzothiophenes	240	Benzo(b)fluoranthene	<100
C4-dibenzothiophenes	<100	Benzo(k)fluoranthene	<100
Phenanthrene	1,000	Indeno(1,2,3-cd)pyrene	<100
Anthracene	<100	Dibenzo(a,h)anthracene	<100
C1-phenanthrenes/anthracenes	1,900	Benzo(g,h,i)perylene	<100
C2-phenanthrenes/anthracenes	1,400		

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

vo - The value reported fell outside the control limits established for this analyte.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	MFC-19	Client:	Innovative Technical Solutions, Inc.
Date Received:	04/02/02	Project:	Port of Oakland/00-152.15
Date Extracted:	04/03/02	Lab ID:	204008-02 1/10
Date Analyzed:	04/03/02	Data File:	040334.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	147 vo	35	114
2-Fluorobiphenyl	110	43	116
Terphenyl-d14	102	33	141

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Naphthalene	1,400	C3-phenanthrenes/anthracenes	370
C1-naphthalenes	5,500	C4-phenanthrenes/anthracenes	<100
C2-naphthalenes	9,700	Fluoranthene	<100
C3-naphthalenes	7,300	Pyrene	<100
C4-naphthalenes	2,400	C1-fluoranthenes/pyrenes	<100
Biphenyl	<100	C2-fluoranthenes/pyrenes	<100
Acenaphthylene	<100	C3-fluoranthenes/pyrenes	<100
Acenaphthene	160	Benz(a)anthracene	<100
Dibenzofuran	210	Chrysene	<100
Fluorene	460	C1-chrysenes	<100
C1-fluorenes	1,200	C2-chrysenes	<100
C2-fluorenes	1,200	C3-chrysenes	<100
C3-fluorenes	700	C4-chrysenes	<100
Dibenzothiophene	270	Benzo(e)pyrene	<100
C1-dibenzothiophenes	640	Benzo(a)pyrene	<100
C2-dibenzothiophenes	620	Perylene	<100
C3-dibenzothiophenes	270	Benzo(b)fluoranthene	<100
C4-dibenzothiophenes	<100	Benzo(k)fluoranthene	<100
Phenanthrene	840	Indeno(1,2,3-cd)pyrene	<100
Anthracene	<100	Dibenzo(a,h)anthracene	<100
C1-phenanthrenes/anthracenes	1,500	Benzo(g,h,i)perylene	<100
C2-phenanthrenes/anthracenes	1,100		

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

vo - The value reported fell outside the control limits established for this analyte.

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	MW1-[C-401]	Client:	Innovative Technical Solutions, Inc.
Date Received:	04/02/02	Project:	Port of Oakland/00-152.15
Date Extracted:	04/03/02	Lab ID:	204008-03 1/10
Date Analyzed:	04/03/02	Data File:	040335.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	149 vo	35	114
2-Fluorobiphenyl	111	43	116
Terphenyl-d14	101	33	141

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Naphthalene	1,300	C3-phenanthrenes/anthracenes	410
C1-naphthalenes	5,500	C4-phenanthrenes/anthracenes	<100
C2-naphthalenes	9,200	Fluoranthene	130
C3-naphthalenes	6,600	Pyrene	180
C4-naphthalenes	2,100	C1-fluoranthenes/pyrenes	190
Biphenyl	<100	C2-fluoranthenes/pyrenes	<100
Acenaphthylene	<100	C3-fluoranthenes/pyrenes	<100
Acenaphthene	190	Benz(a)anthracene	<100
Dibenzofuran	190	Chrysene	<100
Fluorene	380	C1-chrysenes	<100
C1-fluorenes	860	C2-chrysenes	<100
C2-fluorenes	950	C3-chrysenes	<100
C3-fluorenes	570	C4-chrysenes	<100
Dibenzothiophene	160	Benzo(e)pyrene	<100
C1-dibenzothiophenes	380	Benzo(a)pyrene	<100
C2-dibenzothiophenes	360	Perylene	<100
C3-dibenzothiophenes	170	Benzo(b)fluoranthene	<100
C4-dibenzothiophenes	<100	Benzo(k)fluoranthene	<100
Phenanthrene	720	Indeno(1,2,3-cd)pyrene	<100
Anthracene	<100	Dibenzo(a,h)anthracene	<100
C1-phenanthrenes/anthracenes	1,100	Benzo(g,h,i)perylene	<100
C2-phenanthrenes/anthracenes	900		

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

vo - The value reported fell outside the control limits established for this analyte.

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	Method Blank	Client:	Innovative Technical Solutions, Inc.
Date Received:	Not Applicable	Project:	Port of Oakland/00-152.15
Date Extracted:	04/03/02	Lab ID:	mb 02-284
Date Analyzed:	04/03/02	Data File:	040327.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	93	35	114
2-Fluorobiphenyl	93	43	116
Terphenyl-d14	81	33	141

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Naphthalene	<10	C3-phenanthrenes/anthracenes	<10
C1-naphthalenes	<10	C4-phenanthrenes/anthracenes	<10
C2-naphthalenes	<10	Fluoranthene	<10
C3-naphthalenes	<10	Pyrene	<10
C4-naphthalenes	<10	C1-fluoranthenes/pyrenes	<10
Biphenyl	<10	C2-fluoranthenes/pyrenes	<10
Acenaphthylene	<10	C3-fluoranthenes/pyrenes	<10
Acenaphthene	<10	Benz(a)anthracene	<10
Dibenzofuran	<10	Chrysene	<10
Fluorene	<10	C1-chrysenes	<10
C1-fluorenes	<10	C2-chrysenes	<10
C2-fluorenes	<10	C3-chrysenes	<10
C3-fluorenes	<10	C4-chrysenes	<10
Dibenzothiophene	<10	Benzo(e)pyrene	<10
C1-dibenzothiophenes	<10	Benzo(a)pyrene	<10
C2-dibenzothiophenes	<10	Perylene	<10
C3-dibenzothiophenes	<10	Benzo(b)fluoranthene	<10
C4-dibenzothiophenes	<10	Benzo(k)fluoranthene	<10
Phenanthrene	<10	Indeno(1,2,3-cd)pyrene	<10
Anthracene	<10	Dibenzo(a,h)anthracene	<10
C1-phenanthrenes/anthracenes	<10	Benzo(g,h,i)perylene	<10
C2-phenanthrenes/anthracenes	<10		

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Extracted: 04/03/02
Date Analyzed: 04/05/02

RESULTS FROM THE ANALYSIS OF PRODUCT SAMPLES FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Cd	Cu	Pb	Ni	Zn
MFC-18 204008-01	<1.0	<1.0	<2.0	<1.0	<1.0
MFC-19 204008-02	<1.0	<1.0	<2.0	1.2	<1.0
MW1-[C-401] 204008-03	<1.0	9.7	30	4.5	<1.0
Method Blank	<1.0	<1.0	<2.0	<1.0	<1.0

Cd Cadmium
Cu Copper
Pb Lead
Ni Nickel
Zn Zinc

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15
Date Extracted: 04/03/02
Date Analyzed: 04/04/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLES FOR ORGANIC LEAD SPECIATION AND MANGANESE BY METHOD 8082 MODIFIED

Results Reported as µg/g (ppm)

Sample ID Laboratory ID	TML	TMEL	DMDEL	MTEL	TEL	MMT	Surrogate (% Recovery)
MFC-18 204008-01	<5	<5	<5	<5	<5	<5	91
MFC-19 204008-02	<5	<5	<5	<5	<5	<5	79
MW1-[C-401] 204008-03	<5	<5	<5	<5	44	<5	75
Method Blank	<5	<5	<5	<5	<5	<5	98

TML	Tetramethyl Lead
TMEL	Trimethylethyl Lead
DMDEL	Dimethyldiethyl Lead
MTEL	Methyltriethyl Lead
TEL	Tetraethyl Lead
MMT	Methylcyclopentadienyl Manganese Tricarbonyl

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR VOLATILES BY EPA METHOD 8260B

Laboratory Code: 204008-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
1,1-Dichloroethene	µg/g (ppm)	<100	<100	nm
Benzene	µg/g (ppm)	<100	<100	nm
Trichloroethene	µg/g (ppm)	<100	<100	nm
Toluene	µg/g (ppm)	<100	<100	nm
Chlorobenzene	µg/g (ppm)	<100	<100	nm

Laboratory Code: 204008-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
1,1-Dichloroethene	µg/g (ppm)	500	<100	98	51-159
Benzene	µg/g (ppm)	500	<100	90	81-119
Trichloroethene	µg/g (ppm)	500	<100	83	61-125
Toluene	µg/g (ppm)	500	<100	89	62-131
Chlorobenzene	µg/g (ppm)	500	<100	89	77-125

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
1,1-Dichloroethene	µg/g (ppm)	500	108	53-161
Benzene	µg/g (ppm)	500	96	74-129
Trichloroethene	µg/g (ppm)	500	105	68-125
Toluene	µg/g (ppm)	500	91	65-131
Chlorobenzene	µg/g (ppm)	500	88	81-119

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR ETHERS USING EPA METHOD 8260B

Laboratory Code: 204008-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Methyl t-butyl ether (MTBE)	µg/g (ppm)	<100	<100	nm
Diisopropyl ether (DIPE)	µg/g (ppm)	<100	<100	nm
Ethyl t-butyl ether (ETBE)	µg/g (ppm)	<100	<100	nm
t-Amyl methyl ether (TAME)	µg/g (ppm)	<100	<100	nm

Laboratory Code: 204008-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	µg/g (ppm)	500	<100	94	65-135
Diisopropyl ether (DIPE)	µg/g (ppm)	500	<100	97	65-135
Ethyl t-butyl ether (ETBE)	µg/g (ppm)	500	<100	91	65-135
t-Amyl methyl ether (TAME)	µg/g (ppm)	500	<100	92	65-135

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	µg/g (ppm)	500	97	65-135
Diisopropyl ether (DIPE)	µg/g (ppm)	500	101	65-135
Ethyl t-butyl ether (ETBE)	µg/g (ppm)	500	94	65-135
t-Amyl methyl ether (TAME)	µg/g (ppm)	500	95	65-135

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15

QUALITY ASSURANCE RESULTS FROM TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Laboratory Code: 203224-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Cadmium	µg/g (ppm)	<1.0	<1.0	nm	0-20
Copper	µg/g (ppm)	22	28	24 h	0-20
Lead	µg/g (ppm)	<2.0	<2.0	nm	0-20
Nickel	µg/g (ppm)	<1.0	<1.0	nm	0-20
Zinc	µg/g (ppm)	4.0	5.6	33 h	0-20

Laboratory Code: 203224-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	Acceptance Criteria
Cadmium	µg/g (ppm)	20	<1.0	105	50-150
Copper	µg/g (ppm)	20	22	67	50-150
Lead	µg/g (ppm)	40	<2.0	103	50-150
Nickel	µg/g (ppm)	40	<1.0	100	50-150
Zinc	µg/g (ppm)	20	4.0	86	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Cadmium	µg/g (ppm)	20	103	104	80-120	1
Copper	µg/g (ppm)	20	103	103	80-120	0
Lead	µg/g (ppm)	40	102	102	80-120	0
Nickel	µg/g (ppm)	40	103	103	80-120	0
Zinc	µg/g (ppm)	20	105	106	80-120	1

h - RPD results are likely outside control limits due to sample inhomogeneity.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

Date of Report: 04/10/02
Date Received: 04/02/02
Project: Port of Oakland/00-152.15

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR TETRAMETHYL LEAD AND TETRAETHYL LEAD BY GC/ECD

Laboratory Code: 203180-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Tetramethyl lead	µg/g (ppm)	<5	<5	nm
Tetraethyl lead	µg/g (ppm)	94	94	0

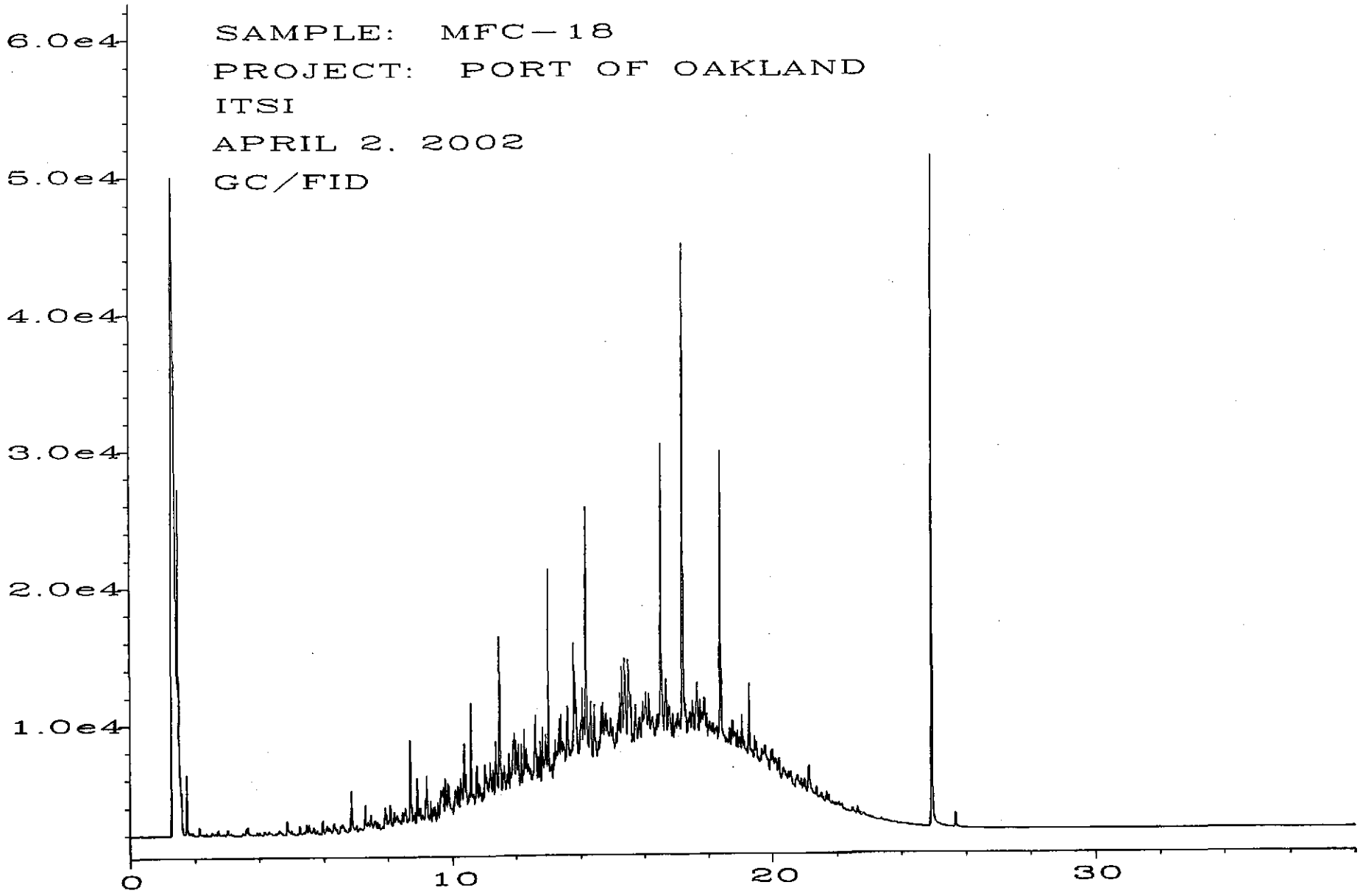
Laboratory Code: *203180-01 (Matrix Spike)*

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Tetramethyl lead	µg/g (ppm)	50	<5	80	80	50-150	0
Tetraethyl lead	µg/g (ppm)	50	94	71	71	50-150	0

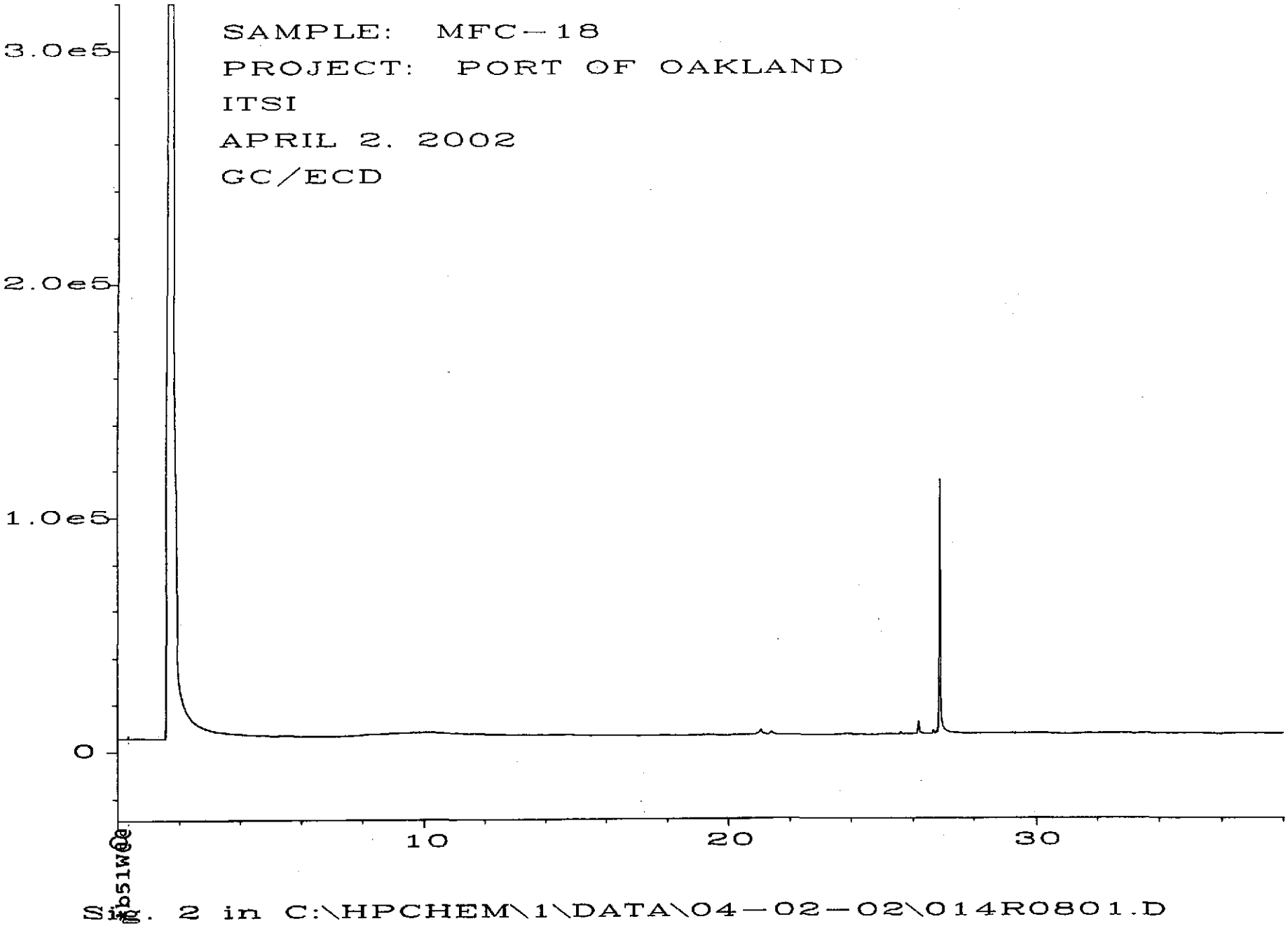
Laboratory Code: Laboratory Control Sample

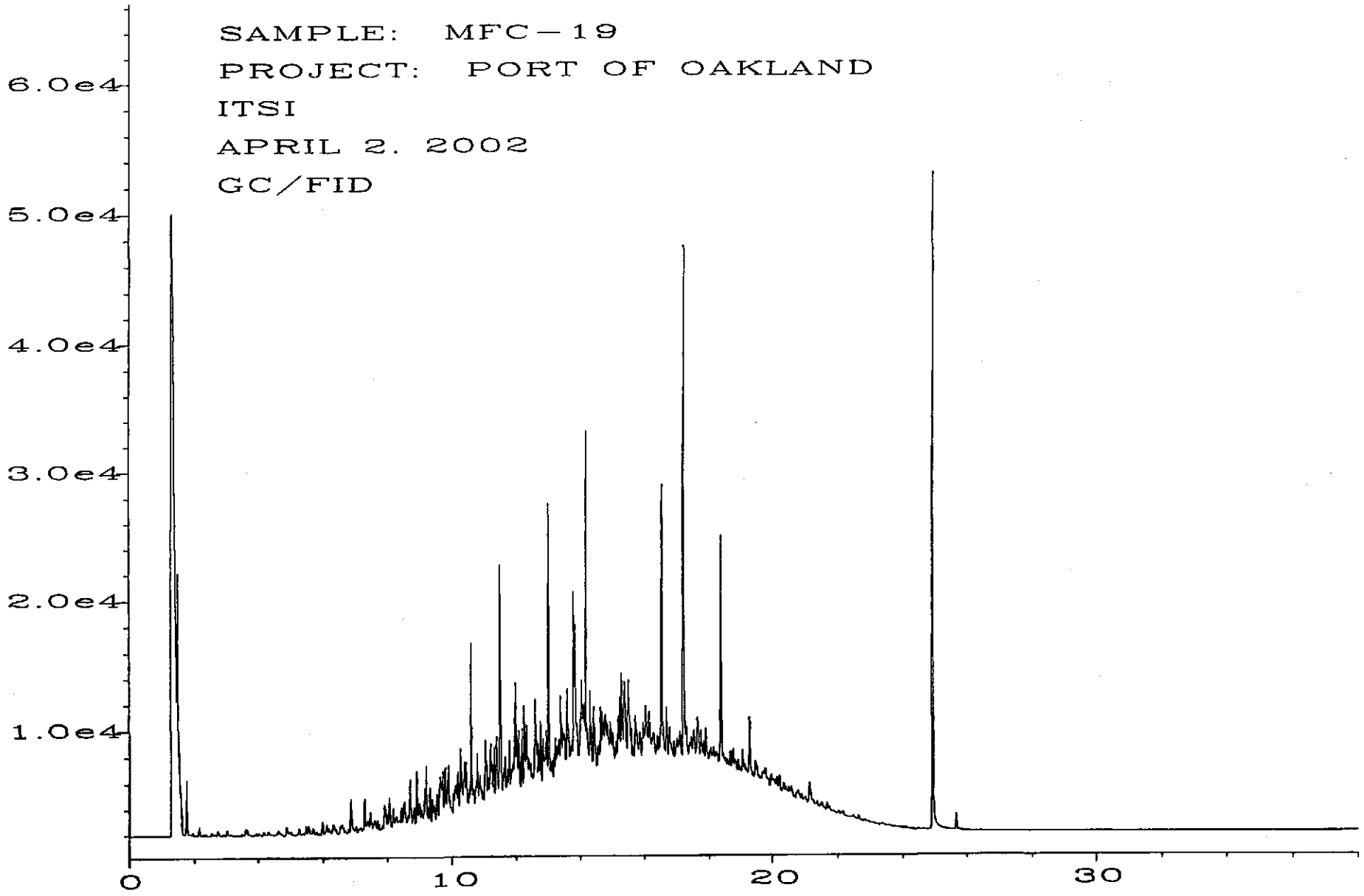
Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Tetramethyl lead	µg/g (ppm)	50	95	99	50-150	4
Tetraethyl lead	µg/g (ppm)	50	86	88	50-150	2

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

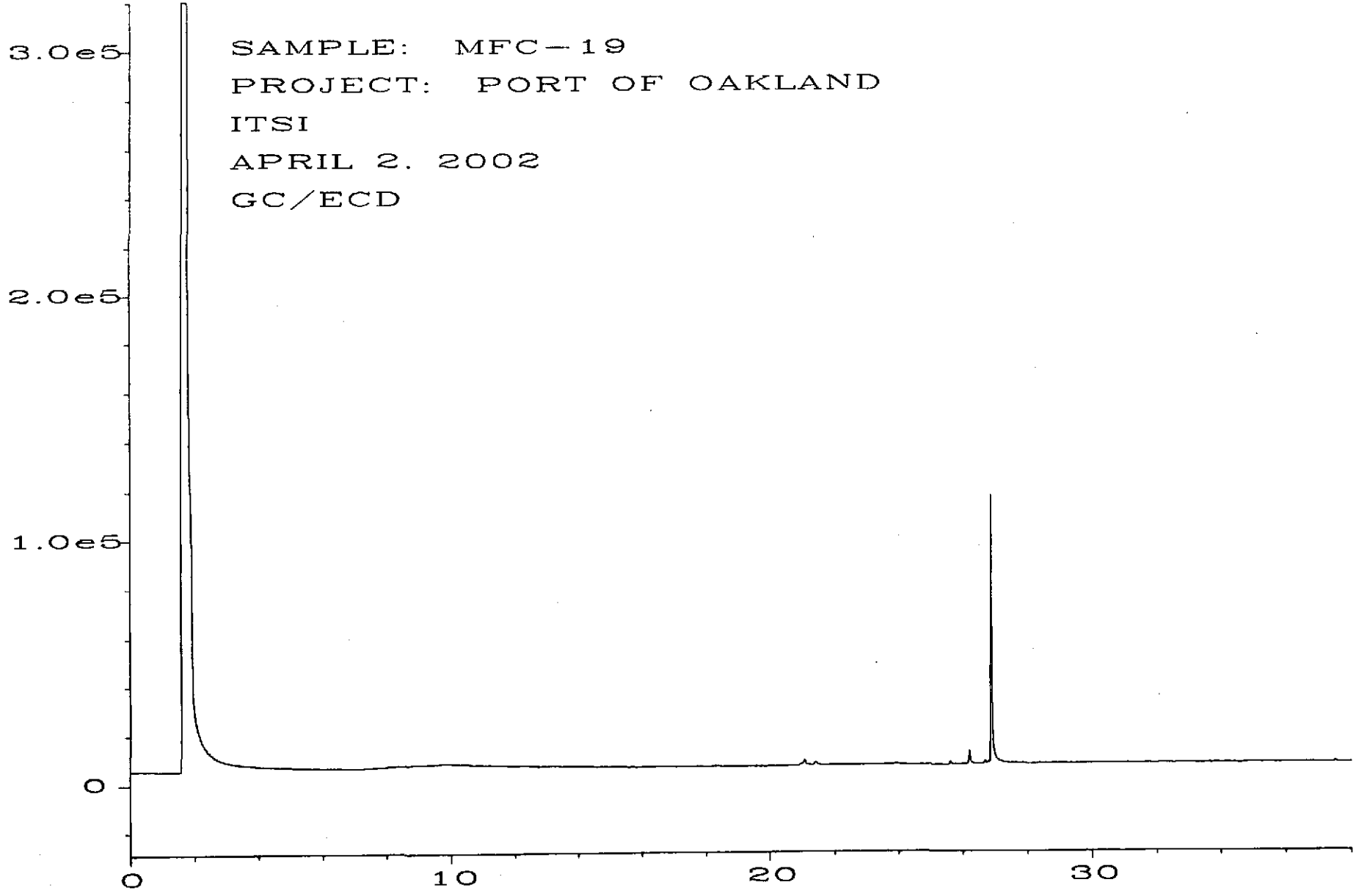


Sig. 1 in C:\HPCHEM\1\DATA\04-02-02\014F0801.D

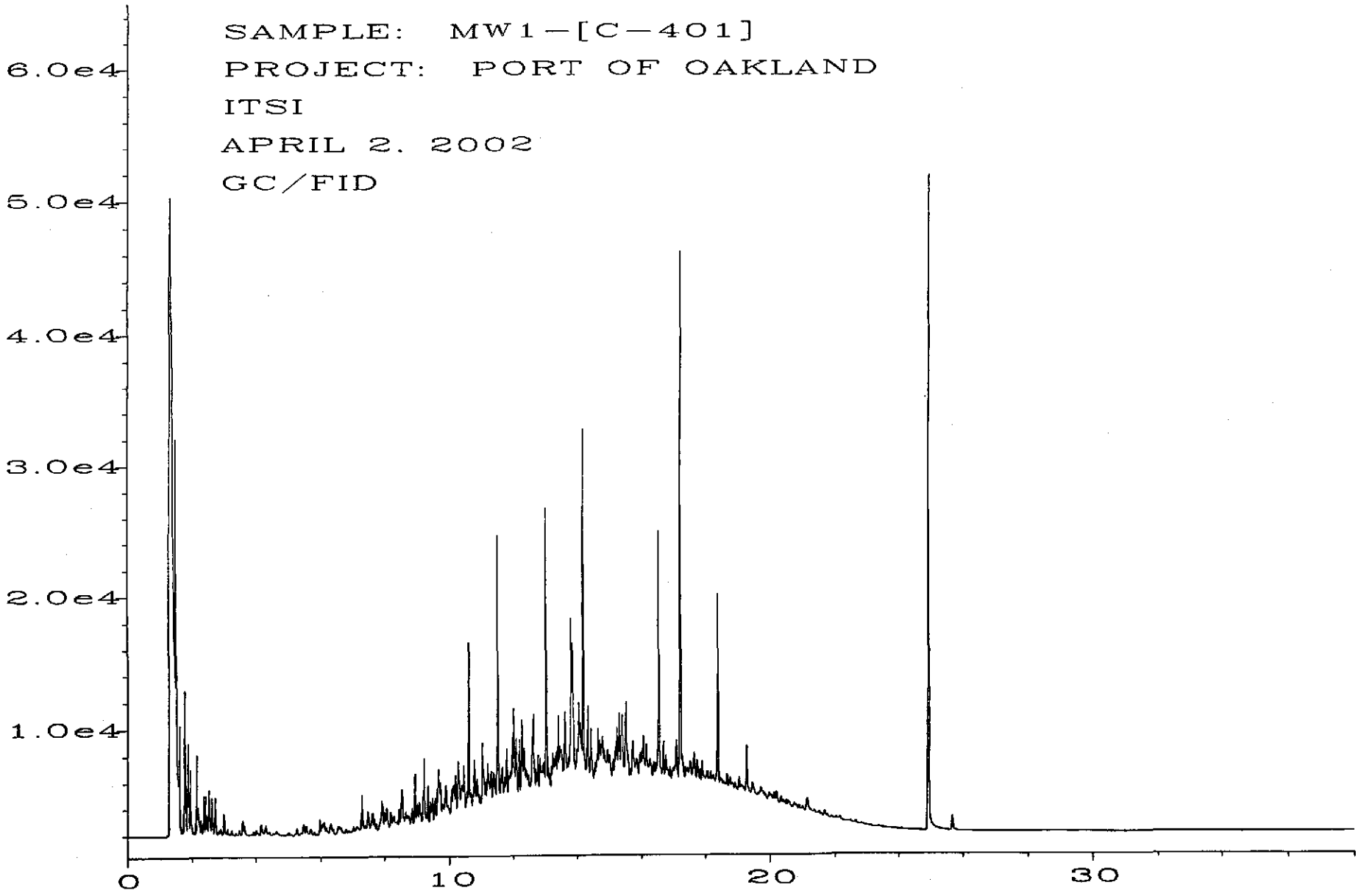

SAMPLE: MFC-18
PROJECT: PORT OF OAKLAND
ITSI
APRIL 2. 2002
GC/ECD
3.0e5
2.0e5
1.0e5
0
10
20
30
Sig. 2 in C:\HPCHEM\1\DATA\04-02-02\014R0801.D



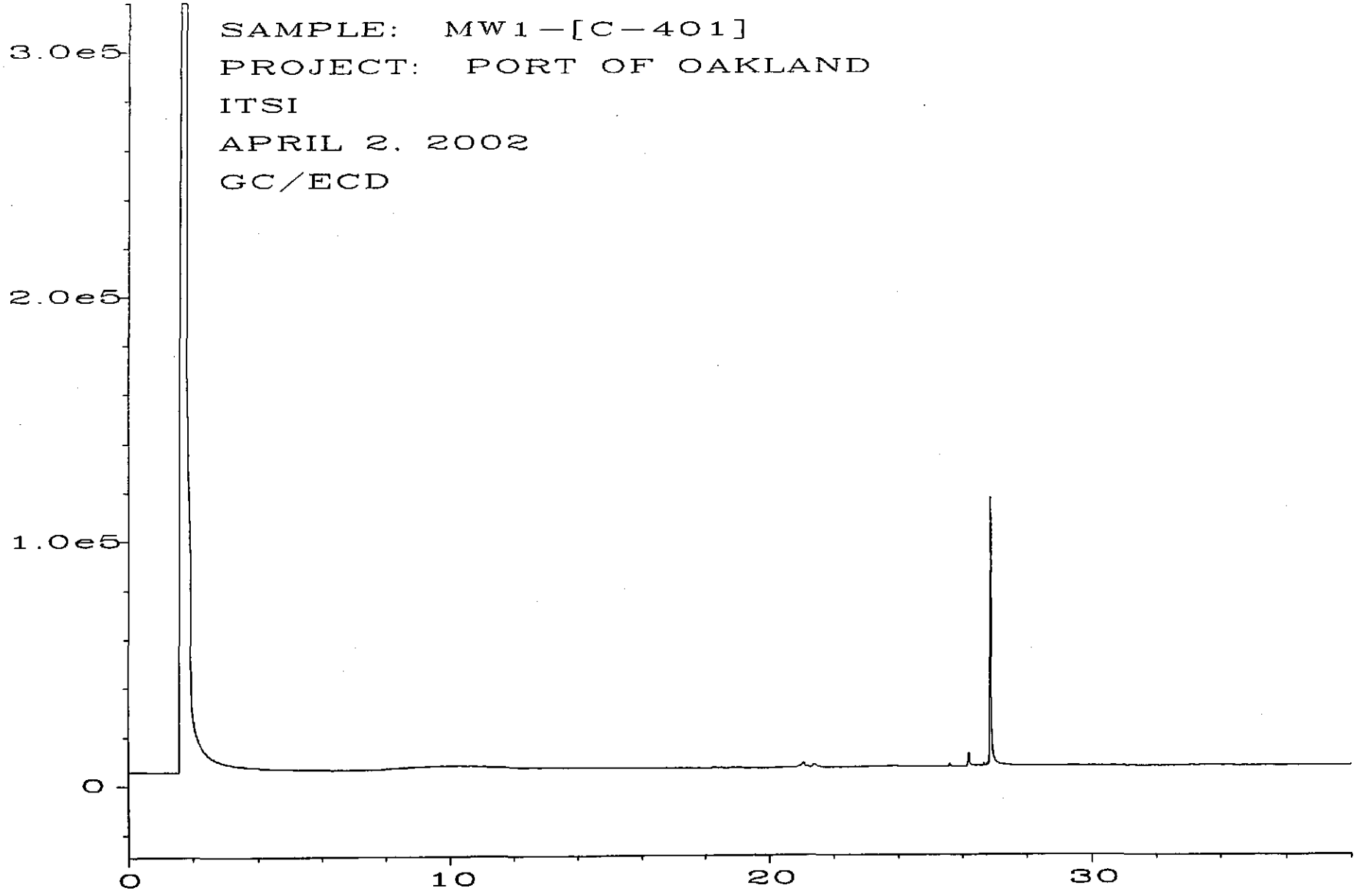
Sig. 1 in C:\HPCHEM\1\DATA\04-02-02\015F0801.D



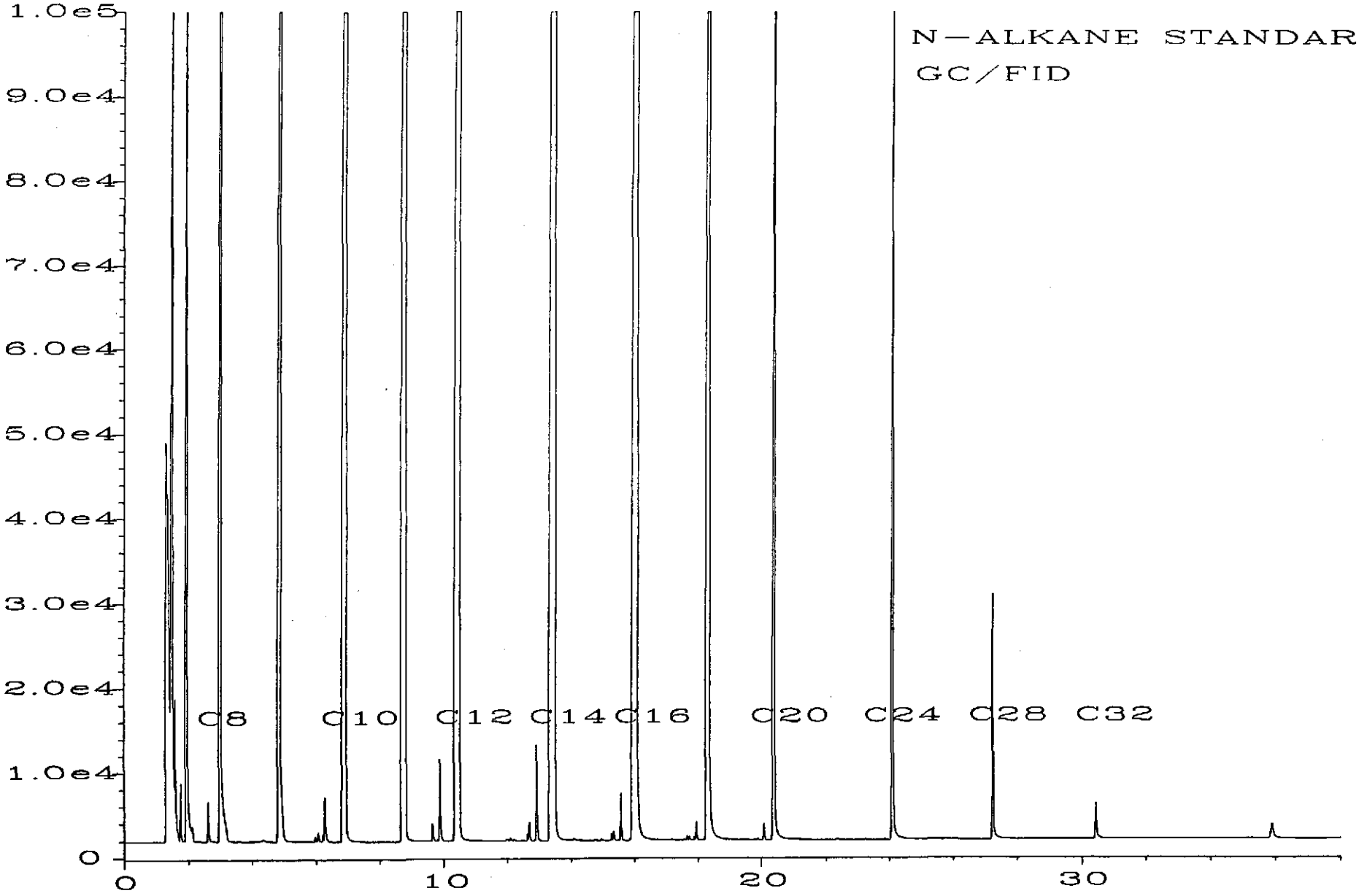
Sig. 2 in C:\HPCHEM\1\DATA\04-02-02\015R0801.D



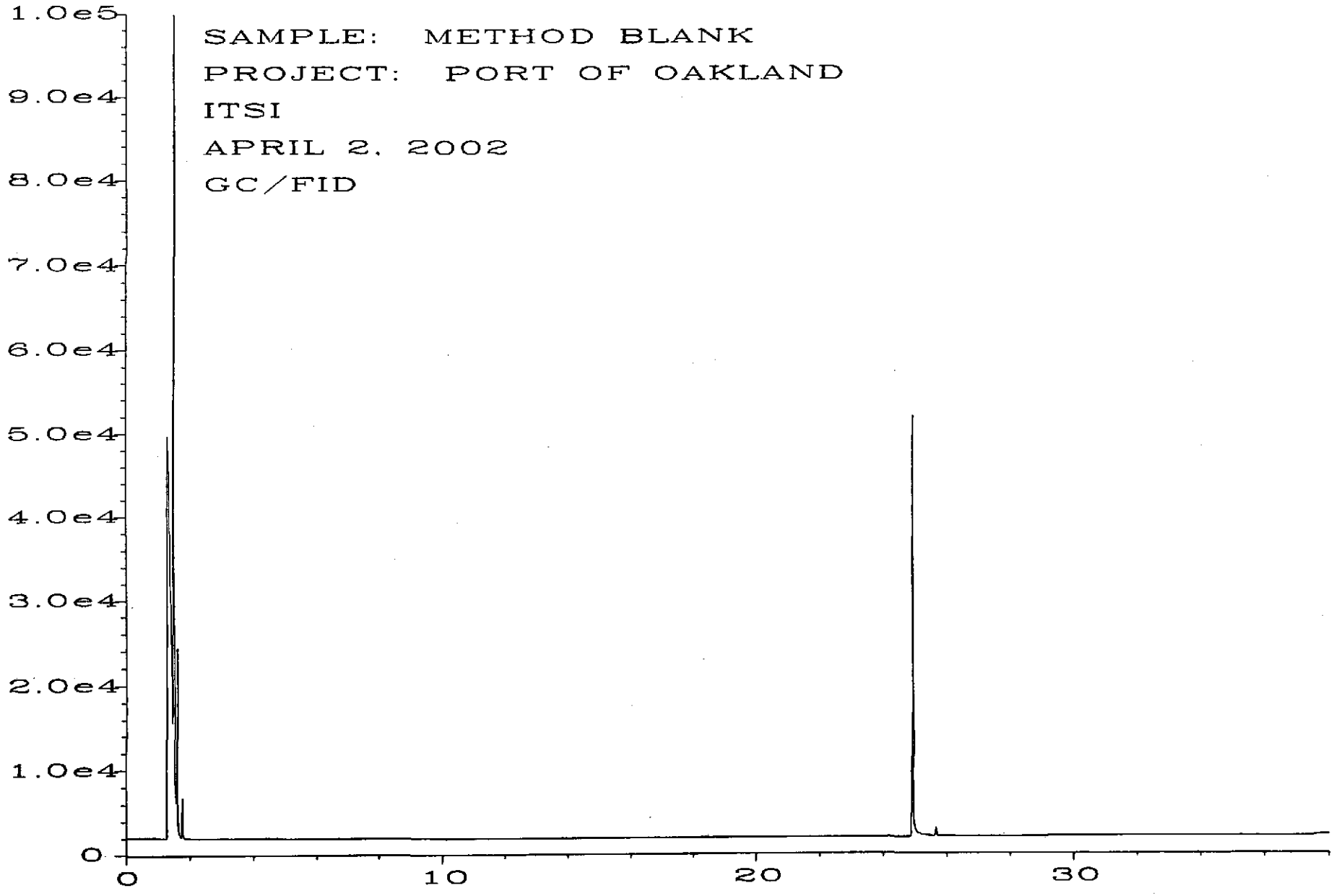
Sig. 1 in C:\HPCHEM\1\DATA\04-02-02\016F0801.D



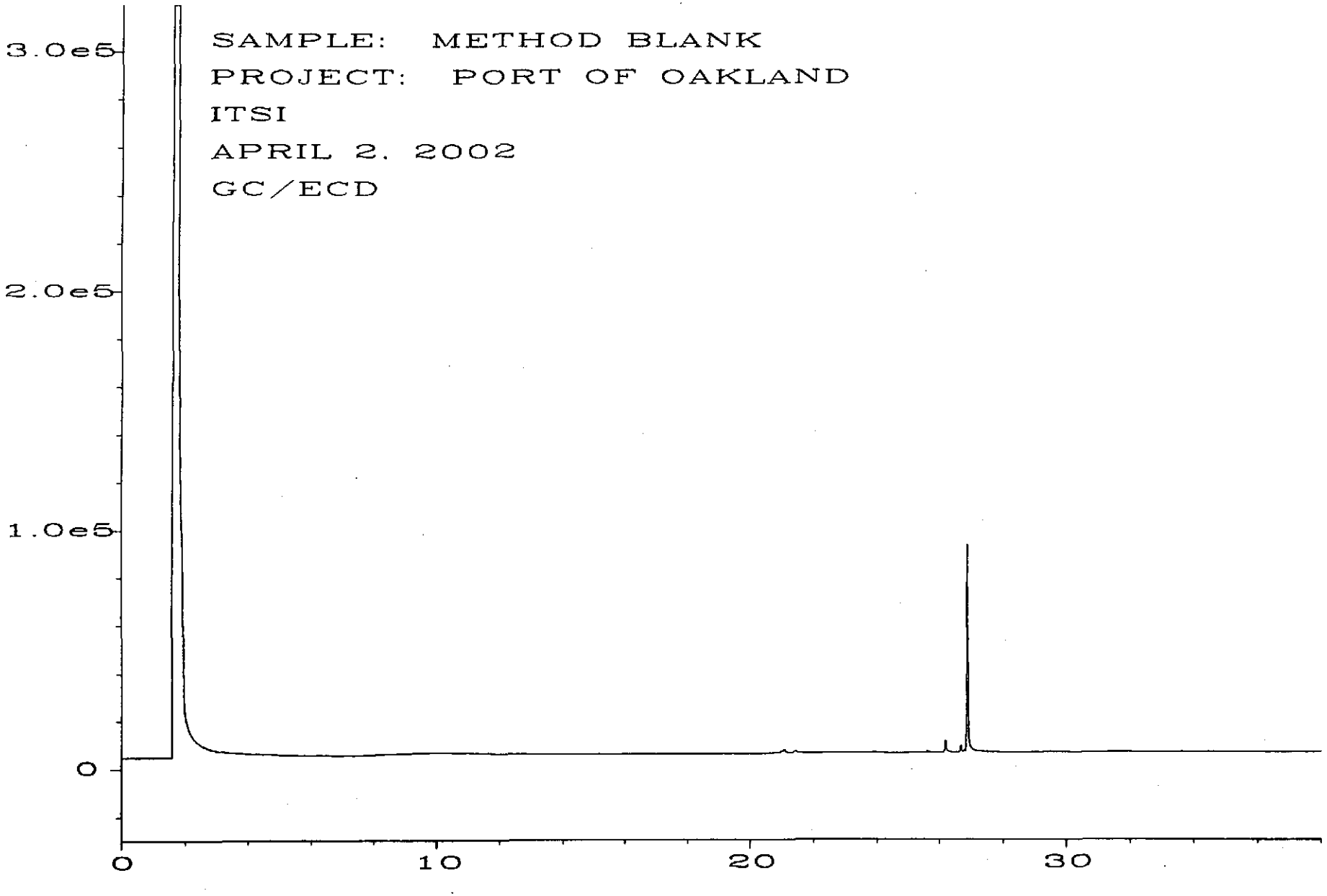
Sig. 2 in C:\HPCHEM\1\DATA\04-02-02\016R0801.D



Sig. 1 in C:\HPCHEM\1\DATA\04—01—02\100F0601.D

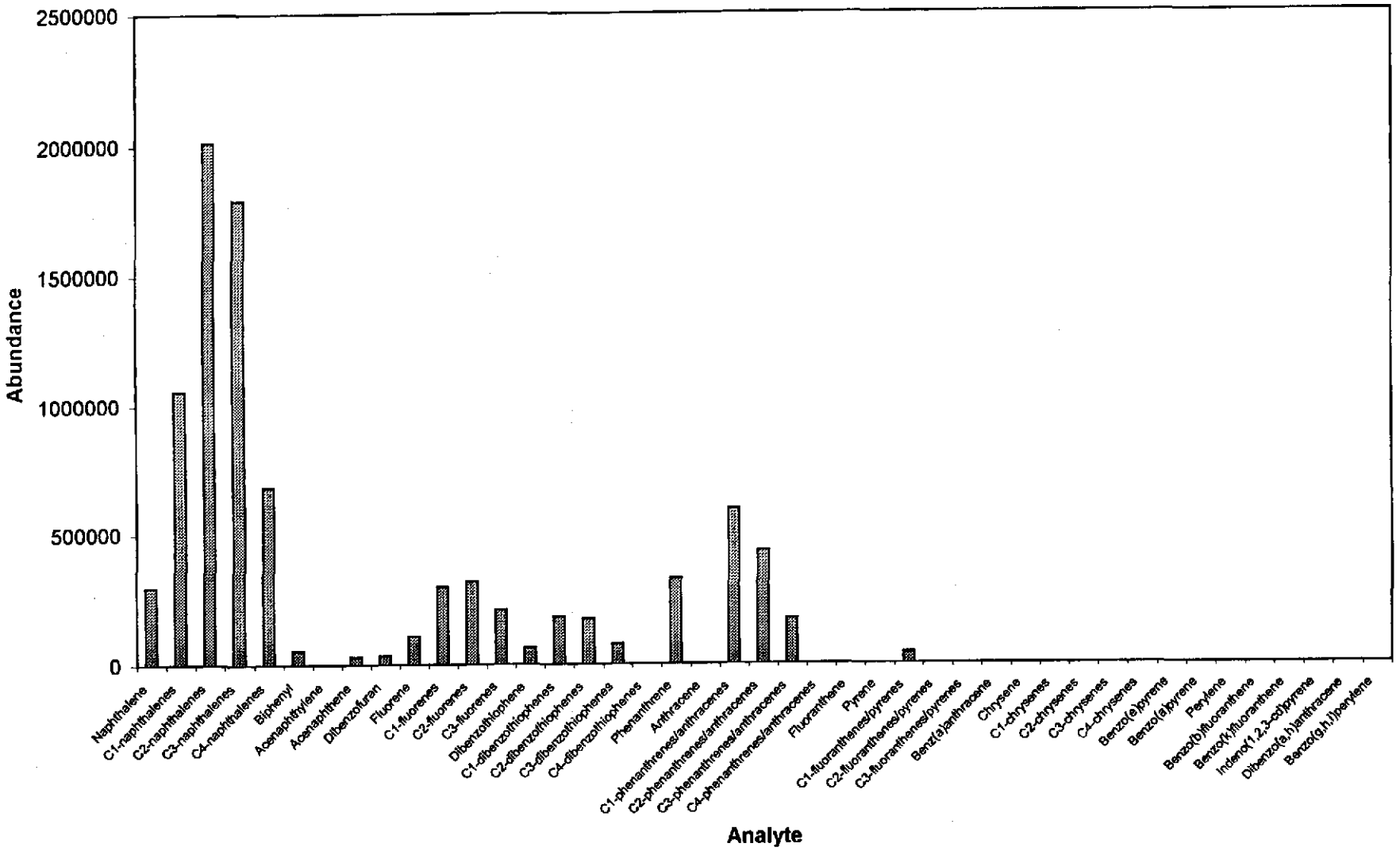


Sig. 1 in C:\HPCHEM\1\DATA\04-02-02\002F0201.D

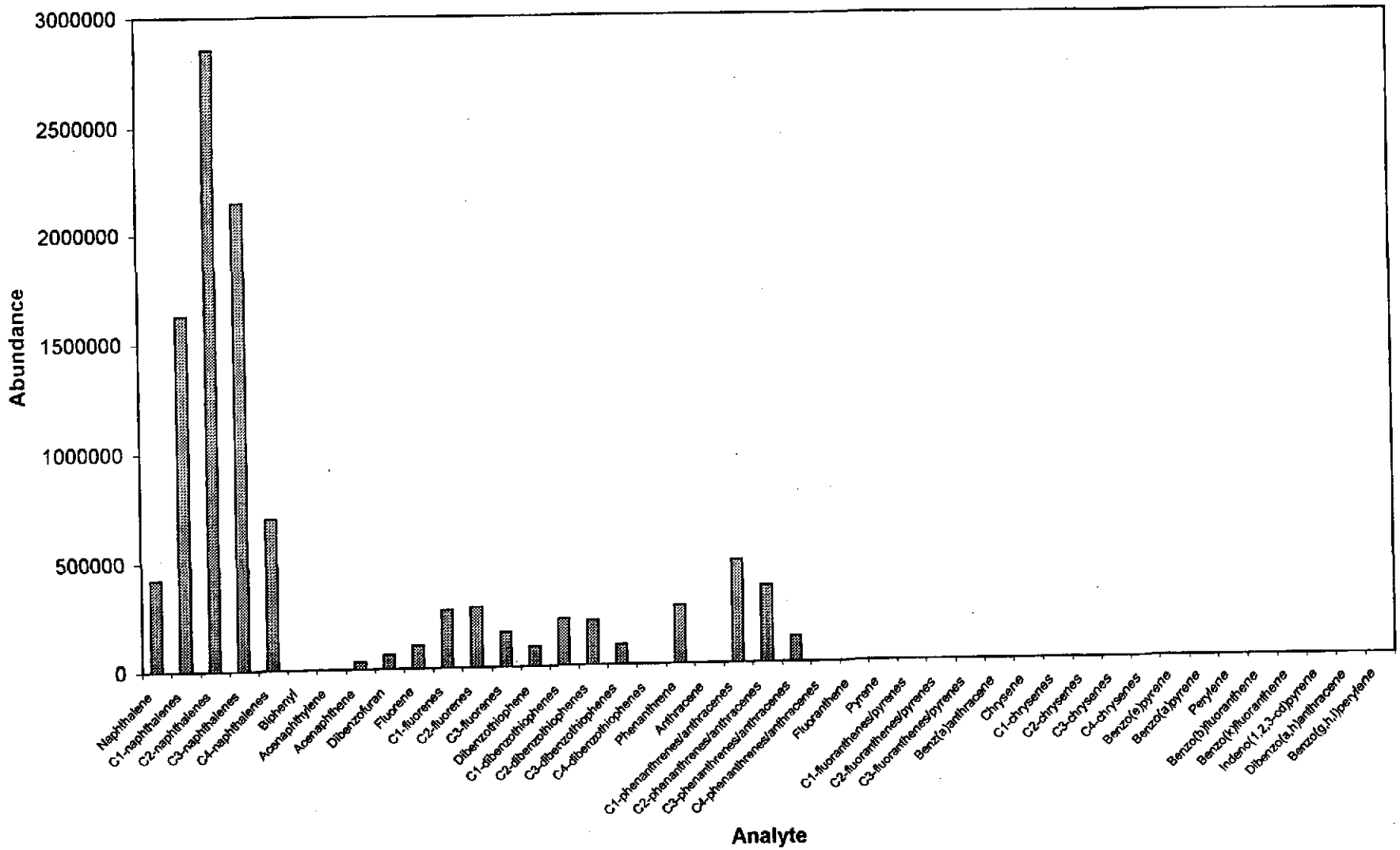


Sig. 2 in C:\HPCHEM\1\DATA\04-02-02\002R0201.D

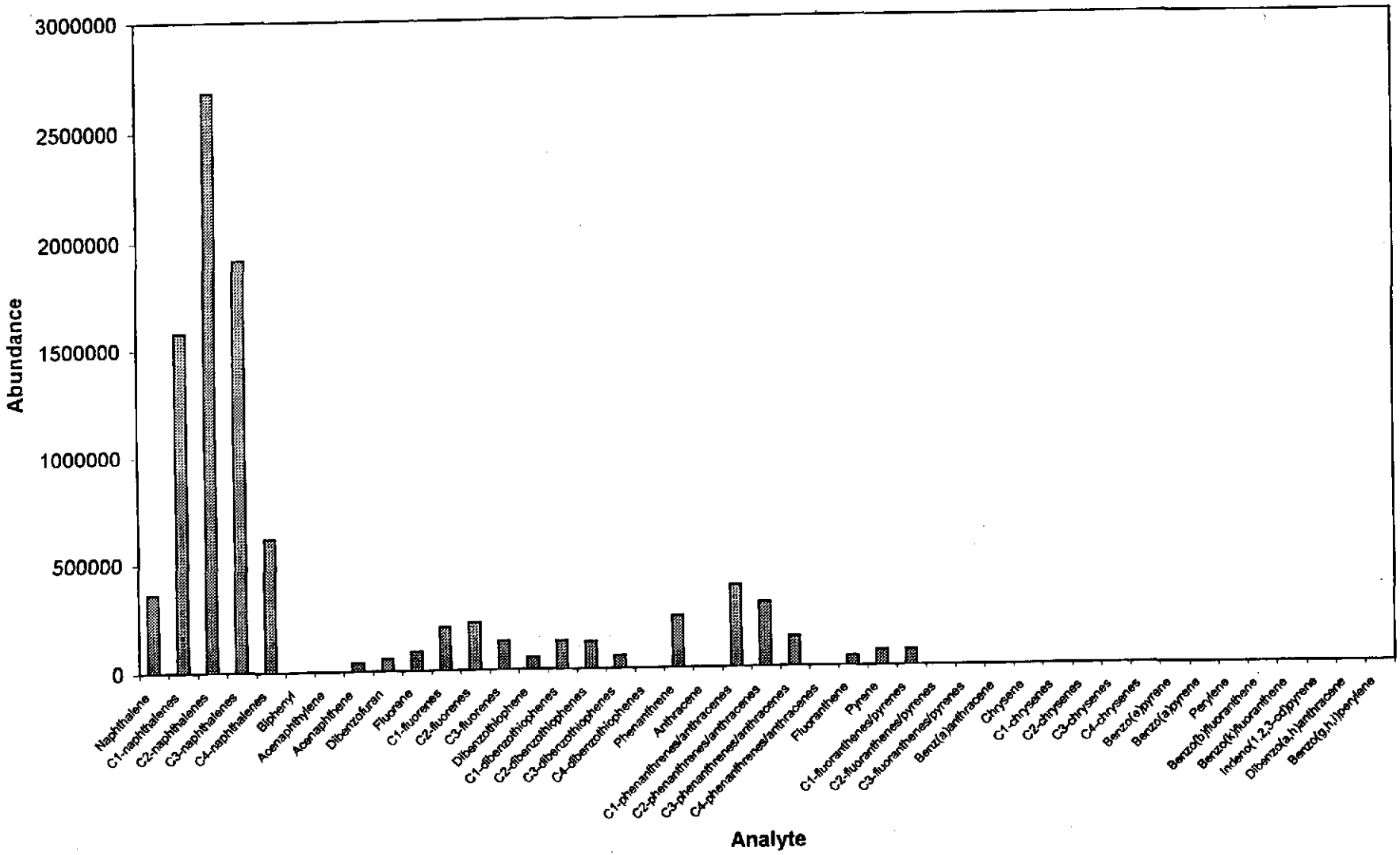
Sample ID: MFC-18



Sample ID: MFC-19



Sample ID: MW1-[C-401]



20008

RJ 4.2.02 Cay

ITSI Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, CA 94598
(925) 946-3100 (925) 256-8998 (fax)

Chain-Of-Custody

Project Name and Number: Port of Oakland / 00-152.15
Project Manager: Rachel Hess
Site Location: 2225 & 2277 7th St., Oakland

Laboratory Name: Friedman & Bruya, Inc.
Address: 3012 16th Ave. West
Seattle, WA 98119
Contact Name:
Phone: (206) 285-8282

Date: 3-26-02
Page: 1 of 1

	Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: 8270 - PAHs	Diesel, Motor Oil ASTM D-2887	STD. fuel scan 8260 VOCs + MTBE	PIANO	6010 Metals Cr, Cu, Pb, Ni, Zn	Organic Lead	Special Instructions/Comments
	Preservative:						NA	NA	NA	NA	NA	NA	
	Container Type:						VOA	VOA	VOA	VOA	VOA	VOA	
01	MFC - 18		3-26-02	1:45	3	Drum Water	X	X	X	X	X	X	Samples are a mixture of product & water
02	MFC - 19		3-26-02	2:00	4	↓	X	X	X	X	X	X	
03	MW1 - [C-401]		3-26-02	2:30	3	↓	X	X	X	X	X	X	

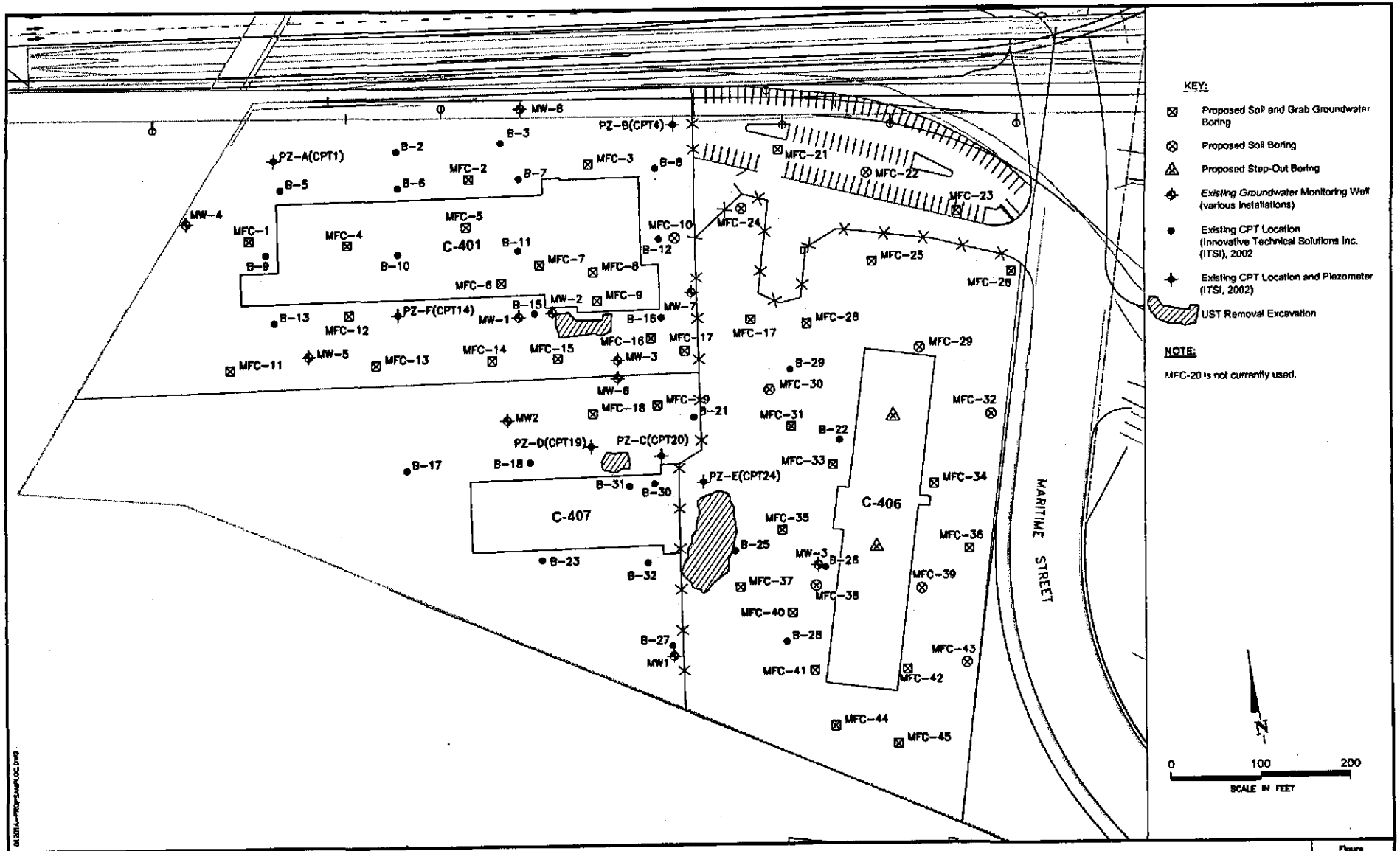
Sampled By: Tim Watchers
Signature: T. Watchers
Special Instructions:

Send Results to: Rachel Hess
(w/fax #) (925) 256 - 8998
Turnaround Time: 5 days

Sampler: Tim Watchers
Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
Tim Watchers / ITSI	4/1/02	1200	S. Ohm / F&B, Inc.	4/2/02	9AM

Original – Laboratory Yellow – Field/Office



IRIS ENVIRONMENTAL
1815 Broadway, Suite 1003, Oakland, California 94612

Proposed Sampling Locations
Port of Oakland Future Port Field Support Services Complex
2225 and 2277 7th Street
Oakland, California

Figure 3

Drafter: MAS | Date: 3/18/02 | Contract Number: 01-201A | Approved: | Revised:

APPENDIX B

CONE PENETRATION TEST AND PEIZOMETER INSTALLATION SOIL AND GROUNDWATER ANALYTICAL RESULTS

Submission #: 2002-02-0239

Date: February 22, 2002

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com
CA DHS ELAP#1094

Innovative Technical Solutions, Inc
2730 Shadelands Drive
Walnut Creek, CA 94598

Attn: Ms. Rachel Hess

Project: 00.152-15
Port of Oakland
Site: 2225 7th Street

Dear Ms. Hess,

Attached is our report for your samples received on Wednesday February 13, 2002 This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after March 30, 2002 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@chromalab.com

Sincerely,

Surinder Sidhu.

Surinder Sidhu
Project Manager

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Innovative Technical Solutions, Inc	✉ 2730 Shadelands Drive Walnut Creek, CA 94598
Attn: Rachel Hess	Phone: (925) 256-8898 Fax: (925) 256-8998
00.152-15 Site2225 7th Street	Project: Port of Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
PZ-E 1-1.5`	Soil	02/13/2002 13:00	1
PZ-E 3-3.5`	Soil	02/13/2002 13:05	2

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8021B
8015M

Prep Method: 5035

Sample ID:	**PZ-E 1-1.5**	Lab Sample ID:	2002-02-0239-001
Project:	00.152-15 Port of Oakland	Received:	02/13/2002 17:15
Site:	2225 7th Street Oakland, CA	Extracted:	02/20/2002 12:29
Sampled:	02/13/2002 13:00	QC-Batch:	2002/02/20-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.02	02/20/2002 12:29	
Benzene	ND	0.0051	mg/Kg	1.02	02/20/2002 12:29	
Toluene	ND	0.0051	mg/Kg	1.02	02/20/2002 12:29	
Ethyl benzene	ND	0.0051	mg/Kg	1.02	02/20/2002 12:29	
Xylene(s)	ND	0.0051	mg/Kg	1.02	02/20/2002 12:29	
MTBE	ND	0.0051	mg/Kg	1.02	02/20/2002 12:29	
Surrogate(s)						
Trifluorotoluene	85.6	53-125	%	1.02	02/20/2002 12:29	
4-Bromofluorobenzene-FID	81.1	58-124	%	1.02	02/20/2002 12:29	

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8021B
8015M

Prep Method: 5035

Sample ID:	**PZ-E 3-3.5'**	Lab Sample ID:	2002-02-0239-002
Project:	00.152-15 Port of Oakland	Received:	02/13/2002 17:15
Site:	2225 7th Street Oakland, CA	Extracted:	02/20/2002 13:00
Sampled:	02/13/2002 13:05	QC-Batch:	2002/02/20-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.01	02/20/2002 13:00	
Benzene	ND	0.0050	mg/Kg	1.01	02/20/2002 13:00	
Toluene	ND	0.0050	mg/Kg	1.01	02/20/2002 13:00	
Ethyl benzene	ND	0.0050	mg/Kg	1.01	02/20/2002 13:00	
Xylene(s)	ND	0.0050	mg/Kg	1.01	02/20/2002 13:00	
MTBE	ND	0.0050	mg/Kg	1.01	02/20/2002 13:00	
Surrogate(s)						
Trifluorotoluene	102.4	53-125	%	1.01	02/20/2002 13:00	
4-Bromofluorobenzene-FID	93.8	58-124	%	1.01	02/20/2002 13:00	

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5035

Method Blank **Soil** **QC Batch # 2002/02/20-01.03**

MB: 2002/02/20-01.03-003 Date Extracted: 02/20/2002 08:38

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	02/20/2002 08:38	
Benzene	ND	0.0050	mg/Kg	02/20/2002 08:38	
Toluene	ND	0.0050	mg/Kg	02/20/2002 08:38	
Ethyl benzene	ND	0.0050	mg/Kg	02/20/2002 08:38	
Xylene(s)	ND	0.0050	mg/Kg	02/20/2002 08:38	
MTBE	ND	0.0050	mg/Kg	02/20/2002 08:38	
Surrogate(s)					
Trifluorotoluene	97.4	53-125	%	02/20/2002 08:38	
4-Bromofluorobenzene-FID	99.2	58-124	%	02/20/2002 08:38	

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8021B Prep Method: 5035

Laboratory Control Spike (LCS/LCSD)	Soil	QC Batch # 2002/02/20-01.03
LCS: 2002/02/20-01.03-004	Extracted: 02/20/2002 09:08	Analyzed: 02/20/2002 09:08
LCSD: 2002/02/20-01.03-005	Extracted: 02/20/2002 09:39	Analyzed: 02/20/2002 09:39

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Benzene	0.103	0.0931	0.1000	0.1000	103.0	93.1	10.1	77-123	35		
Toluene	0.0995	0.0909	0.1000	0.1000	99.5	90.9	9.0	78-122	35		
Ethyl benzene	0.0968	0.0905	0.1000	0.1000	96.8	90.5	6.7	70-130	35		
Xylene(s)	0.290	0.273	0.300	0.300	96.7	91.0	6.1	75-125	35		
Surrogate(s)											
Trifluorotoluene	456	417	500	500	91.2	83.4		53-125			

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M Prep Method: 5035

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2002/02/20-01.03**

LCS: 2002/02/20-01.03-006 Extracted: 02/20/2002 10:10 Analyzed: 02/20/2002 10:10

LCSD: 2002/02/20-01.03-007 Extracted: 02/20/2002 10:40 Analyzed: 02/20/2002 10:40

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Gasoline	0.511	0.474	0.500	0.500	102.2	94.8	7.5	75-125	35		
Surrogate(s)											
4-Bromofluorobenzene	417	424	500	500	83.4	84.8		58-124			

Submission #: 2002-02-0239

Gas/BTEX Compounds (High Level)

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Innovative Technical Solutions, Inc	✉ 2730 Shadelands Drive Walnut Creek, CA 94598
Attn: Rachel Hess	Phone: (925) 256-8898 Fax: (925) 256-8998
00.152-15 Site2225 7th Street	Project: Port of Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
PZ-E 5.5-6`	Soil	02/13/2002 12:50	3

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

Gas/BTEX Compounds (High Level)

Innovative Technical Solutions, Inc

Test Method: 8021B
8015M

Attn: Rachel Hess

Prep Method: 5030

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-E 5.5-6`	Lab Sample ID:	2002-02-0239-003
Project:	00.152-15 Port of Oakland	Received:	02/13/2002 17:15
Site:	2225 7th Street Oakland, CA	Extracted:	02/19/2002 02:11
Sampled:	02/13/2002 12:50	QC-Batch:	2002/02/19-05.02
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	280	10	mg/Kg	1.00	02/21/2002 02:11	g
Benzene	ND	0.62	mg/Kg	1.00	02/21/2002 02:11	
Toluene	ND	0.62	mg/Kg	1.00	02/21/2002 02:11	
Ethyl benzene	ND	0.62	mg/Kg	1.00	02/21/2002 02:11	
Xylene(s)	ND	0.62	mg/Kg	1.00	02/21/2002 02:11	
MTBE	ND	0.62	mg/Kg	1.00	02/21/2002 02:11	
Surrogate(s)						
Trifluorotoluene	103.1	53-125	%	1.00	02/21/2002 02:11	
4-Bromofluorobenzene-FID	136.2	58-124	%	1.00	02/21/2002 02:11	sh

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds (High Level)

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5030

Method Blank **Soil** **QC Batch # 2002/02/19-05.02**

MB: 2002/02/19-05.02-001 Date Extracted: 02/19/2002 08:21

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	10	mg/Kg	02/20/2002 08:21	
Benzene	ND	0.62	mg/Kg	02/20/2002 08:21	
Toluene	ND	0.62	mg/Kg	02/20/2002 08:21	
Ethyl benzene	ND	0.62	mg/Kg	02/20/2002 08:21	
Xylene(s)	ND	0.62	mg/Kg	02/20/2002 08:21	
MTBE	ND	0.62	mg/Kg	02/20/2002 08:21	
Surrogate(s)					
Trifluorotoluene	74.2	53-125	%	02/20/2002 08:21	
4-Bromofluorobenzene-FID	88.8	58-124	%	02/20/2002 08:21	

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds (High Level)

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5030

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2002/02/19-05.02**

LCS: 2002/02/19-05.02-002 Extracted: 02/19/2002 08:17 Analyzed: 02/20/2002 08:17

LCSD: 2002/02/19-05.02-003 Extracted: 02/19/2002 08:46 Analyzed: 02/20/2002 08:46

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Gasoline	0.765	0.766	0.625	0.625	122.4	122.6	0.2	75-125	35		
Benzene	0.122	0.119	0.125	0.125	97.6	95.2	2.5	77-123	35		
Toluene	0.124	0.122	0.125	0.125	99.2	97.6	1.6	78-122	35		
Ethyl benzene	0.123	0.118	0.125	0.125	98.4	94.4	4.1	70-130	35		
Xylene(s)	0.380	0.370	0.375	0.375	101.3	98.7	2.6	75-125	35		
Surrogate(s)											
Trifluorotoluene	524	511	500	500	104.8	102.2		53-125	0		
4-Bromofluorobenzene	492	480	500	500	98.4	96.0		58-124	0		

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds (High Level)

Legend & Notes

Test Method: 8021B
8015M

Prep Method: 5030

Analyte Flags

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard

Analyte Flags

sh

Surrogate recovery was higher than QC limit due to matrix interference.

Submission #: 2002-02-0239

TEPH w/ Silica Gel Clean-up

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Innovative Technical Solutions, Inc	✉ 2730 Shadelands Drive Walnut Creek, CA 94598
Attn: Rachel Hess	Phone: (925) 256-8898 Fax: (925) 256-8998
00.152-15 Site2225 7th Street	Project: Port of Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
PZ-E 1-1.5`	Soil	02/13/2002 13:00	1
PZ-E 3-3.5`	Soil	02/13/2002 13:05	2
PZ-E 5.5-6`	Soil	02/13/2002 12:50	3

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-E 1-1.5`**	Lab Sample ID:	2002-02-0239-001
Project:	00.152-15 Port of Oakland	Received:	02/13/2002 17:15
Site:	2225 7th Street Oakland, CA	Extracted:	02/15/2002 15:04
Sampled:	02/13/2002 13:00	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	19	1.0	mg/Kg	1.00	02/19/2002 04:56	ndp
Motor Oil	ND	50	mg/Kg	1.00	02/19/2002 04:56	
Surrogate(s)						
o-Terphenyl	98.0	60-130	%	1.00	02/19/2002 04:56	

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-E 3-3.5`	Lab Sample ID:	2002-02-0239-002
Project:	00.152-15 Port of Oakland	Received:	02/13/2002 17:15
Site:	2225 7th Street Oakland, CA	Extracted:	02/15/2002 15:04
Sampled:	02/13/2002 13:05	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	17	1.0	mg/Kg	1.00	02/20/2002 10:51	ndp
Motor Oil	ND	50	mg/Kg	1.00	02/20/2002 10:51	
Surrogate(s)						
o-Terphenyl	97.0	60-130	%	1.00	02/20/2002 10:51	

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-E 5.5-6'	Lab Sample ID:	2002-02-0239-003
Project:	00.152-15 Port of Oakland	Received:	02/13/2002 17:15
Site:	2225 7th Street Oakland, CA	Extracted:	02/15/2002 15:04
Sampled:	02/13/2002 12:50	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	20000	100	mg/Kg	100.00	02/19/2002 13:57	ndp
Motor Oil	ND	5000	mg/Kg	100.00	02/19/2002 13:57	
Surrogate(s)						
o-Terphenyl	NA	60-130	%	100.00	02/19/2002 13:57	sd

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

TEPH w/ Silica Gel Clean-up

Batch QC report

Test Method: 8015M

Prep Method: 3550/8015 M

Method Blank **Soil** **QC Batch # 2002/02/15-09.10**

MB: 2002/02/15-09.10-001 Date Extracted: 02/15/2002 15:04

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Diesel	ND	1	mg/Kg	02/19/2002 00:56	
Motor Oil	ND	50	mg/Kg	02/19/2002 00:56	
Surrogate(s)					
o-Terphenyl	90.4	60-130	%	02/19/2002 00:56	

Submission #: 2002-02-0239

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

TEPH w/ Silica Gel Clean-up

Batch QC report

Test Method: 8015M Prep Method: 3550/8015M

Laboratory Control Spike (LCS/LCSD)	Soil	QC Batch # 2002/02/15-09.10
LCS: 2002/02/15-09.10-002	Extracted: 02/15/2002 15:04	Analyzed: 02/18/2002 18:18
LCSD: 2002/02/15-09.10-003	Extracted: 02/15/2002 15:04	Analyzed: 02/18/2002 18:58

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Diesel	39.4	38.8	41.7	41.7	94.5	93.0	1.6	60-130	25		
Surrogate(s)											
o-Terphenyl	21.4	21.1	20.0	20.0	107.0	105.5		60-130	0		

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

TEPH w/ Silica Gel Clean-up

Legend & Notes

Test Method: 8015M Prep Method: 3550/8015M

Analyte Flags

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

Analyte Flags

sd

Surrogate recovery not reportable due to required dilution.

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Innovative Technical Solutions, Inc	✉ 2730 Shadelands Drive Walnut Creek, CA 94598
Attn: Rachel Hess	Phone: (925) 256-8898 Fax: (925) 256-8998
00-152.15 Site2277 Seventh St	Project: Port of Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
PZ-C @ 1.0-1.5`	Soil	02/12/2002 09:40	1
PZ-C @ 3.0-3.5`	Soil	02/12/2002 09:45	2
PZ-D @ 1.0-1.5`	Soil	02/12/2002 10:00	4
PZ-D @ 3.0-3.5`	Soil	02/12/2002 10:10	5
PZ-F @ 1.0-1.5`	Soil	02/12/2002 10:25	7
PZ-F @ 3.0-3.5`	Soil	02/12/2002 10:30	8
PZ-F @ 5.0-5.5`	Soil	02/11/2002 11:15	9
PZ-A @ 1.0-1.5`	Soil	02/11/2002 13:50	10
PZ-A @ 3.0-3.5`	Soil	02/11/2002 13:55	11
PZ-A @ 5.0-5.5`	Soil	02/11/2002 14:05	12
PZ-B @ 1.0-1.5`	Soil	02/12/2002 07:40	13
PZ-B @ 3.0-3.5`	Soil	02/12/2002 07:45	14
PZ-B @ 7.0-7.5`	Soil	02/12/2002 08:00	15

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Test Method: 8021B
8015M

Prep Method: 5035

Sample ID:	**PZ-C @ 1.0-1.5`**	Lab Sample ID:	2002-02-0206-001
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/18/2002 16:55
Sampled:	02/12/2002 09:40	QC-Batch:	2002/02/18-01.03
Matrix:	*Soil*		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/18/2002 16:55	
Benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 16:55	
Toluene	ND	0.0050	mg/Kg	1.00	02/18/2002 16:55	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 16:55	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/18/2002 16:55	
MTBE	ND	0.0050	mg/Kg	1.00	02/18/2002 16:55	
Surrogate(s)						
Trifluorotoluene	108.3	53-125	%	1.00	02/18/2002 16:55	
4-Bromofluorobenzene-FID	117.9	58-124	%	1.00	02/18/2002 16:55	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8021B
8015M

Prep Method: 5035

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-C @ 3.0-3.5`**	Lab Sample ID:	2002-02-0206-002
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/18/2002 19:27
Sampled:	02/12/2002 09:45	QC-Batch:	2002/02/18-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/18/2002 19:27	
Benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 19:27	
Toluene	ND	0.0050	mg/Kg	1.00	02/18/2002 19:27	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 19:27	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/18/2002 19:27	
MTBE	ND	0.0050	mg/Kg	1.00	02/18/2002 19:27	
Surrogate(s)						
Trifluorotoluene	80.1	53-125	%	1.00	02/18/2002 19:27	
4-Bromofluorobenzene-FID	81.0	58-124	%	1.00	02/18/2002 19:27	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8021B
8015M

Prep Method: 5035

Sample ID:	**PZ-D @ 1.0-1.5'**	Lab Sample ID:	2002-02-0206-004
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/19/2002 13:44
Sampled:	02/12/2002 10:00	QC-Batch:	2002/02/19-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/19/2002 13:44	
Benzene	ND	0.0050	mg/Kg	1.00	02/19/2002 13:44	
Toluene	ND	0.0050	mg/Kg	1.00	02/19/2002 13:44	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/19/2002 13:44	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/19/2002 13:44	
MTBE	ND	0.0050	mg/Kg	1.00	02/19/2002 13:44	
Surrogate(s)						
Trifluorotoluene	88.5	53-125	%	1.00	02/19/2002 13:44	
4-Bromofluorobenzene-FID	89.9	58-124	%	1.00	02/19/2002 13:44	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Test Method: 8021B
8015M

Attn: Rachel Hess

Prep Method: 5035

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-D @ 3.0-3.5'**	Lab Sample ID:	2002-02-0206-005
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/18/2002 20:28
Sampled:	02/12/2002 10:10	QC-Batch:	2002/02/18-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/18/2002 20:28	
Benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 20:28	
Toluene	ND	0.0050	mg/Kg	1.00	02/18/2002 20:28	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 20:28	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/18/2002 20:28	
MTBE	ND	0.0050	mg/Kg	1.00	02/18/2002 20:28	
Surrogate(s)						
Trifluorotoluene	103.7	53-125	%	1.00	02/18/2002 20:28	
4-Bromofluorobenzene-FID	102.4	58-124	%	1.00	02/18/2002 20:28	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8021B
8015M

Prep Method: 5035

Sample ID:	**PZ-F @ 1.0-1.5`**	Lab Sample ID:	2002-02-0206-007
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/18/2002 20:58
Sampled:	02/12/2002 10:25	QC-Batch:	2002/02/18-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	4.8	1.0	mg/Kg	1.00	02/18/2002 20:58	g
Benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 20:58	
Toluene	ND	0.0050	mg/Kg	1.00	02/18/2002 20:58	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 20:58	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/18/2002 20:58	
MTBE	ND	0.0050	mg/Kg	1.00	02/18/2002 20:58	
Surrogate(s)						
Trifluorotoluene	114.7	53-125	%	1.00	02/18/2002 20:58	
4-Bromofluorobenzene-FID	91.3	58-124	%	1.00	02/18/2002 20:58	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8021B
8015M

Prep Method: 5035

Sample ID:	**PZ-F @ 3.0-3.5'**	Lab Sample ID:	2002-02-0206-008
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/19/2002 14:15
Sampled:	02/12/2002 10:30	QC-Batch:	2002/02/19-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/19/2002 14:15	
Benzene	ND	0.0050	mg/Kg	1.00	02/19/2002 14:15	
Toluene	ND	0.0050	mg/Kg	1.00	02/19/2002 14:15	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/19/2002 14:15	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/19/2002 14:15	
MTBE	ND	0.0050	mg/Kg	1.00	02/19/2002 14:15	
Surrogate(s)						
Trifluorotoluene	91.0	53-125	%	1.00	02/19/2002 14:15	
4-Bromofluorobenzene-FID	81.6	58-124	%	1.00	02/19/2002 14:15	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8021B
8015M

Prep Method: 5035

Sample ID:	PZ-F @ 5.0-5.5'	Lab Sample ID:	2002-02-0206-009
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/18/2002 22:00
Sampled:	02/11/2002 11:15	QC-Batch:	2002/02/18-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	1.0	1.0	mg/Kg	1.00	02/18/2002 22:00	g
Benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 22:00	
Toluene	ND	0.0050	mg/Kg	1.00	02/18/2002 22:00	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 22:00	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/18/2002 22:00	
MTBE	ND	0.0050	mg/Kg	1.00	02/18/2002 22:00	
Surrogate(s)						
Trifluorotoluene	121.8	53-125	%	1.00	02/18/2002 22:00	
4-Bromofluorobenzene-FID	97.3	58-124	%	1.00	02/18/2002 22:00	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Test Method: 8021B 8015M

Attn: Rachel Hess

Prep Method: 5035

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-A @ 1.0-1.5**	Lab Sample ID:	2002-02-0206-010
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/18/2002 22:30
Sampled:	02/11/2002 13:50	QC-Batch:	2002/02/18-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/18/2002 22:30	
Benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 22:30	
Toluene	ND	0.0050	mg/Kg	1.00	02/18/2002 22:30	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 22:30	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/18/2002 22:30	
MTBE	ND	0.0050	mg/Kg	1.00	02/18/2002 22:30	
Surrogate(s)						
Trifluorotoluene	121.7	53-125	%	1.00	02/18/2002 22:30	
4-Bromofluorobenzene-FID	92.6	58-124	%	1.00	02/18/2002 22:30	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Test Method: 8021B
8015M

Attn: Rachel Hess

Prep Method: 5035

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-A @ 3.0-3.5'**	Lab Sample ID:	2002-02-0206-011
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/18/2002 23:01
Sampled:	02/11/2002 13:55	QC-Batch:	2002/02/18-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/18/2002 23:01	
Benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 23:01	
Toluene	ND	0.0050	mg/Kg	1.00	02/18/2002 23:01	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 23:01	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/18/2002 23:01	
MTBE	ND	0.0050	mg/Kg	1.00	02/18/2002 23:01	
Surrogate(s)						
4-Bromofluorobenzene	79.7	58-124	%	1.00	02/18/2002 23:01	
4-Bromofluorobenzene-FID	105.1	58-124	%	1.00	02/18/2002 23:01	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8021B
8015M

Prep Method: 5035

Sample ID:	**PZ-A @ 5.0-5.5'**	Lab Sample ID:	2002-02-0206-012
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 19:15
Sampled:	02/11/2002 14:05	QC-Batch:	2002/02/15-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/15/2002 19:15	
Benzene	ND	0.0050	mg/Kg	1.00	02/15/2002 19:15	
Toluene	ND	0.0050	mg/Kg	1.00	02/15/2002 19:15	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/15/2002 19:15	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/15/2002 19:15	
MTBE	ND	0.0050	mg/Kg	1.00	02/15/2002 19:15	
Surrogate(s)						
4-Bromofluorobenzene	93.1	58-124	%	1.00	02/15/2002 19:15	
4-Bromofluorobenzene-FID	95.7	58-124	%	1.00	02/15/2002 19:15	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8021B
8015M

Prep Method: 5035

Sample ID:	**PZ-B @ 1.0-1.5`**	Lab Sample ID:	2002-02-0206-013
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/18/2002 23:32
Sampled:	02/12/2002 07:40	QC-Batch:	2002/02/18-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/18/2002 23:32	
Benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 23:32	
Toluene	ND	0.0050	mg/Kg	1.00	02/18/2002 23:32	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/18/2002 23:32	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/18/2002 23:32	
MTBE	ND	0.0050	mg/Kg	1.00	02/18/2002 23:32	
Surrogate(s)						
Trifluorotoluene	75.0	53-125	%	1.00	02/18/2002 23:32	
4-Bromofluorobenzene-FID	66.5	58-124	%	1.00	02/18/2002 23:32	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Test Method: 8021B
8015M

Attn: Rachel Hess

Prep Method: 5035

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-B @ 3.0-3.5`	Lab Sample ID:	2002-02-0206-014
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/19/2002 00:03
Sampled:	02/12/2002 07:45	QC-Batch:	2002/02/18-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/19/2002 00:03	
Benzene	ND	0.0050	mg/Kg	1.00	02/19/2002 00:03	
Toluene	ND	0.0050	mg/Kg	1.00	02/19/2002 00:03	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/19/2002 00:03	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/19/2002 00:03	
MTBE	ND	0.0050	mg/Kg	1.00	02/19/2002 00:03	
Surrogate(s)						
Trifluorotoluene	79.1	53-125	%	1.00	02/19/2002 00:03	
Trifluorotoluene-FID	80.5	53-125	%	1.00	02/19/2002 00:03	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8021B
8015M

Prep Method: 5035

Sample ID:	**PZ-B @ 7.0-7.5'**	Lab Sample ID:	2002-02-0206-015
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/19/2002 00:33
Sampled:	02/12/2002 08:00	QC-Batch:	2002/02/18-01.03
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	02/19/2002 00:33	
Benzene	ND	0.0050	mg/Kg	1.00	02/19/2002 00:33	
Toluene	ND	0.0050	mg/Kg	1.00	02/19/2002 00:33	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	02/19/2002 00:33	
Xylene(s)	ND	0.0050	mg/Kg	1.00	02/19/2002 00:33	
MTBE	ND	0.0050	mg/Kg	1.00	02/19/2002 00:33	
Surrogate(s)						
Trifluorotoluene	95.4	53-125	%	1.00	02/19/2002 00:33	
4-Bromofluorobenzene-FID	64.1	58-124	%	1.00	02/19/2002 00:33	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5035

Method Blank | **Soil** | **QC Batch # 2002/02/15-01.03**

MB: 2002/02/15-01.03-003 | Date Extracted: 02/15/2002 08:38

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	02/15/2002 08:38	
Benzene	ND	0.0050	mg/Kg	02/15/2002 08:38	
Toluene	ND	0.0050	mg/Kg	02/15/2002 08:38	
Ethyl benzene	ND	0.0050	mg/Kg	02/15/2002 08:38	
Xylene(s)	ND	0.0050	mg/Kg	02/15/2002 08:38	
MTBE	ND	0.0050	mg/Kg	02/15/2002 08:38	
Surrogate(s)					
Trifluorotoluene	107.6	53-125	%	02/15/2002 08:38	
4-Bromofluorobenzene-FID	111.5	58-124	%	02/15/2002 08:38	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5035

Method Blank | **Soil** | **QC Batch # 2002/02/18-01.03**

MB: 2002/02/18-01.03-003 | Date Extracted: 02/18/2002 08:31

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	02/18/2002 08:31	
Benzene	ND	0.0050	mg/Kg	02/18/2002 08:31	
Toluene	ND	0.0050	mg/Kg	02/18/2002 08:31	
Ethyl benzene	ND	0.0050	mg/Kg	02/18/2002 08:31	
Xylene(s)	ND	0.0050	mg/Kg	02/18/2002 08:31	
MTBE	ND	0.0050	mg/Kg	02/18/2002 08:31	
Surrogate(s)					
Trifluorotoluene	110.5	53-125	%	02/18/2002 08:31	
4-Bromofluorobenzene-FID	94.7	58-124	%	02/18/2002 08:31	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5035

Method Blank **Soil** **QC Batch # 2002/02/19-01.03**

MB: 2002/02/19-01.03-001 Date Extracted: 02/19/2002 07:50

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	02/19/2002 07:50	
Benzene	ND	0.0050	mg/Kg	02/19/2002 07:50	
Toluene	ND	0.0050	mg/Kg	02/19/2002 07:50	
Ethyl benzene	ND	0.0050	mg/Kg	02/19/2002 07:50	
Xylene(s)	ND	0.0050	mg/Kg	02/19/2002 07:50	
MTBE	ND	0.0050	mg/Kg	02/19/2002 07:50	
Surrogate(s)					
Trifluorotoluene	97.2	53-125	%	02/19/2002 07:50	
4-Bromofluorobenzene-FID	96.2	58-124	%	02/19/2002 07:50	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8021B Prep Method: 5035

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2002/02/15-01.03**

LCS: 2002/02/15-01.03-004 Extracted: 02/15/2002 09:09 Analyzed: 02/15/2002 09:09

LCSD: 2002/02/15-01.03-005 Extracted: 02/15/2002 09:40 Analyzed: 02/15/2002 09:40

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Benzene	0.103	0.100	0.1000	0.1000	103.0	100.0	3.0	77-123	35		
Toluene	0.100	0.0978	0.1000	0.1000	100.0	97.8	2.2	78-122	35		
Ethyl benzene	0.0991	0.0958	0.1000	0.1000	99.1	95.8	3.4	70-130	35		
Xylene(s)	0.294	0.289	0.300	0.300	98.0	96.3	1.7	75-125	35		
Surrogate(s)											
Trifluorotoluene	490	488	500	500	98.0	97.6		53-125			

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M Prep Method: 5035

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2002/02/15-01.03**

LCS: 2002/02/15-01.03-006 Extracted: 02/15/2002 10:10 Analyzed: 02/15/2002 10:10

LCSD: 2002/02/15-01.03-007 Extracted: 02/15/2002 10:41 Analyzed: 02/15/2002 10:41

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Gasoline	0.478	0.445	0.500	0.500	95.6	89.0	7.2	75-125	35		
Surrogate(s)											
4-Bromofluorobenzene	457	464	500	500	91.4	92.8		58-124	0		

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8021B Prep Method: 5035

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2002/02/18-01.03**

LCS: 2002/02/18-01.03-004 Extracted: 02/18/2002 09:02 Analyzed: 02/18/2002 09:02

LCSD: 2002/02/18-01.03-005 Extracted: 02/18/2002 09:33 Analyzed: 02/18/2002 09:33

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Benzene	0.105	0.100	0.1000	0.1000	105.0	100.0	4.9	77-123	35		
Toluene	0.102	0.0981	0.1000	0.1000	102.0	98.1	3.9	78-122	35		
Ethyl benzene	0.0990	0.0970	0.1000	0.1000	99.0	97.0	2.0	70-130	35		
Xylene(s)	0.295	0.290	0.300	0.300	98.3	96.7	1.6	75-125	35		
Surrogate(s)											
Trifluorotoluene	528	489	500	500	105.6	97.8		53-125			

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M Prep Method: 5035

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2002/02/18-01.03**

LCS: 2002/02/18-01.03-006 Extracted: 02/18/2002 10:04 Analyzed: 02/18/2002 10:04

LCSD: 2002/02/18-01.03-007 Extracted: 02/18/2002 10:35 Analyzed: 02/18/2002 10:35

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Gasoline	0.463	0.462	0.500	0.500	92.6	92.4	0.2	75-125	35		
Surrogate(s)											
4-Bromofluorobenzene	439	454	500	500	87.8	90.8		58-124			

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8021B Prep Method: 5035

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2002/02/19-01.03**

LCS: 2002/02/19-01.03-002 Extracted: 02/19/2002 08:20 Analyzed: 02/19/2002 08:20

LCSD: 2002/02/19-01.03-003 Extracted: 02/19/2002 08:51 Analyzed: 02/19/2002 08:51

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Benzene	0.0939	0.0898	0.1000	0.1000	93.9	89.8	4.5	77-123	35		
Toluene	0.0911	0.0877	0.1000	0.1000	91.1	87.7	3.8	78-122	35		
Ethyl benzene	0.0885	0.0864	0.1000	0.1000	88.5	86.4	2.4	70-130	35		
Xylene(s)	0.263	0.261	0.300	0.300	87.7	87.0	0.8	75-125	35		
Surrogate(s)											
Trifluorotoluene	437	419	500	500	87.4	83.8		53-125			

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M Prep Method: 5035

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2002/02/19-01.03**

LCS: 2002/02/19-01.03-004 Extracted: 02/19/2002 09:22 Analyzed: 02/19/2002 09:22

LCSD: 2002/02/19-01.03-005 Extracted: 02/19/2002 09:53 Analyzed: 02/19/2002 09:53

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Gasoline	0.461	0.479	0.500	0.500	92.2	95.8	3.8	75-125	35		
Surrogate(s)											
4-Bromofluorobenzene	422	450	500	500	84.4	90.0		58-124			

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC Report

Test Method: 8021B Prep Method: 5035

Matrix Spike (MS / MSD) **Soil** **QC Batch # 2002/02/18-01.03**

Sample ID: **PZ-C @ 1.0-1.5` >> MS** Lab ID: 2002-02-0206-001

MS: 2002/02/18-01.03-019 Extracted: 02/18/2002 17:25 Analyzed: 02/18/2002 17:25
Dilution: 1

MSD: 2002/02/18-01.03-020 Extracted: 02/18/2002 17:56 Analyzed: 02/18/2002 17:56
Dilution: 1

Compound	Conc. [mg/Kg]			Exp.Conc.		Recovery [%]		RPD	Ctrl.Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD	[%]	Recovery	RPD	MS	MSD
Benzene	0.0939	0.0887	ND	0.0996	0.0994	94.3	89.2	5.6	65-135	35		
Toluene	0.0905	0.0859	ND	0.0996	0.0994	90.9	86.4	5.1	65-135	35		
Ethyl benzene	0.0852	0.0806	ND	0.0996	0.0994	85.5	81.1	5.3	65-135	35		
Xylene(s)	0.247	0.234	ND	0.299	0.298	82.6	78.5	5.1	65-135	35		
Surrogate(s)												
Trifluorotoluene	461	432		500	500	92.3	86.4		53-125			

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC Report

Test Method: 8015M Prep Method: 5035

Matrix Spike (MS / MSD)	**Soil**	**QC Batch # 2002/02/18-01.03**
Sample ID: **PZ-C @ 1.0-1.5` >> MS**		Lab ID: 2002-02-0206-001
MS: 2002/02/18-01.03-021	Extracted: 02/18/2002 18:26	Analyzed: 02/18/2002 18:26
		Dilution: 1
MSD: 2002/02/18-01.03-022	Extracted: 02/18/2002 18:56	Analyzed: 02/18/2002 18:56
		Dilution: 1

Compound	Conc. [mg/Kg]			Exp.Conc.		Recovery [%]		RPD	Ctrl.Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD	[%]	Recovery	RPD	MS	MSD
Gasoline	1.26	1.27	ND	0.494	0.494	255.	257.1	0.8	65-135	35	mso	mso
Surrogate(s)												
4-Bromofluoroben	593	569		500	500	118.	113.9		58-124			

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Legend & Notes

Test Method: 8015M
8021B

Prep Method: 5035

QC Compound Flags

mso

MS/MSD spike recoveries were out of QC limits due to matrix interference. Precision and Accuracy were verified by LCS/LCSD.

Analyte Flags

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

Gas/BTEX Compounds (High Level)

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Innovative Technical Solutions, Inc	✉ 2730 Shadelands Drive Walnut Creek, CA 94598
Attn: Rachel Hess	Phone: (925) 256-8898 Fax: (925) 256-8998
00-152.15 Site2277 Seventh St	Project: Port of Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
PZ-C @ 5.5-6.0`	Soil	02/11/2002 08:00	3
PZ-D @ 5.0-5.5`	Soil	02/11/2002 09:10	6

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

Gas/BTEX Compounds (High Level)

Innovative Technical Solutions, Inc

Test Method: 8021B
8015M

Attn: Rachel Hess

Prep Method: 5030

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-C @ 5.5-6.0'	Lab Sample ID:	2002-02-0206-003
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 12:42
Sampled:	02/11/2002 08:00	QC-Batch:	2002/02/15-05.02
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	74	10	mg/Kg	1.00	02/19/2002 12:42	g
Benzene	ND	0.62	mg/Kg	1.00	02/19/2002 12:42	
Toluene	ND	0.62	mg/Kg	1.00	02/19/2002 12:42	
Ethyl benzene	ND	0.62	mg/Kg	1.00	02/19/2002 12:42	
Xylene(s)	1.3	0.62	mg/Kg	1.00	02/19/2002 12:42	
MTBE	ND	0.62	mg/Kg	1.00	02/19/2002 12:42	
Surrogate(s)						
Trifluorotoluene	109.8	53-125	%	1.00	02/19/2002 12:42	
Trifluorotoluene-FID	120.9	53-125	%	1.00	02/19/2002 12:42	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

Gas/BTEX Compounds (High Level)

Innovative Technical Solutions, Inc

Test Method: 8021B
8015M

Attn: Rachel Hess

Prep Method: 5030

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-D @ 5.0-5.5'	Lab Sample ID:	2002-02-0206-006
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 13:13
Sampled:	02/11/2002 09:10	QC-Batch:	2002/02/15-05.02
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	140	10	mg/Kg	1.00	02/19/2002 13:13	g
Benzene	ND	0.62	mg/Kg	1.00	02/19/2002 13:13	
Toluene	ND	0.62	mg/Kg	1.00	02/19/2002 13:13	
Ethyl benzene	ND	0.62	mg/Kg	1.00	02/19/2002 13:13	
Xylene(s)	ND	0.62	mg/Kg	1.00	02/19/2002 13:13	
MTBE	ND	0.62	mg/Kg	1.00	02/19/2002 13:13	
Surrogate(s)						
Trifluorotoluene	88.1	53-125	%	1.00	02/19/2002 13:13	
Trifluorotoluene-FID	92.7	53-125	%	1.00	02/19/2002 13:13	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds (High Level)

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5030

Method Blank | **Soil** | **QC Batch # 2002/02/15-05.02**

MB: 2002/02/15-05.02-001 | Date Extracted: 02/15/2002 10:09

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	10	mg/Kg	02/18/2002 10:09	
Benzene	ND	0.62	mg/Kg	02/18/2002 10:09	
Toluene	ND	0.62	mg/Kg	02/18/2002 10:09	
Ethyl benzene	ND	0.62	mg/Kg	02/18/2002 10:09	
Xylene(s)	ND	0.62	mg/Kg	02/18/2002 10:09	
MTBE	ND	0.62	mg/Kg	02/18/2002 10:09	
Surrogate(s)					
Trifluorotoluene	91.0	53-125	%	02/18/2002 10:09	
4-Bromofluorobenzene-FID	104.0	58-124	%	02/18/2002 10:09	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds (High Level)

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5030

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2002/02/15-05.02**

LCS: 2002/02/15-05.02-002 Extracted: 02/15/2002 12:12 Analyzed: 02/18/2002 12:12

LCSD: 2002/02/15-05.02-003 Extracted: 02/15/2002 12:41 Analyzed: 02/18/2002 12:41

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Gasoline	0.755	0.748	0.625	0.625	120.8	119.7	0.9	75-125	35		
Benzene	0.121	0.120	0.125	0.125	96.8	96.0	0.8	77-123	35		
Toluene	0.131	0.122	0.125	0.125	104.8	97.6	7.1	78-122	35		
Ethyl benzene	0.123	0.119	0.125	0.125	98.4	95.2	3.3	70-130	35		
Xylene(s)	0.392	0.366	0.375	0.375	104.5	97.6	6.8	75-125	35		
Surrogate(s)											
Trifluorotoluene	90.3	88.8	100	100	90.3	88.8		53-125	0		
4-Bromofluorobenzene	106	99.4	100	100	106.0	99.4		58-124	0		

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds (High Level)

Legend & Notes

Test Method: 8015M
8021B

Prep Method: 5030

Analyte Flags

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard

Submission #: 2002-02-0206

TEPH w/ Silica Gel Clean-up

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Innovative Technical Solutions, Inc	✉ 2730 Shadelands Drive Walnut Creek, CA 94598
Attn: Rachel Hess	Phone: (925) 256-8898 Fax: (925) 256-8998
00-152.15 Site2277 Seventh St	Project: Port of Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
PZ-C @ 1.0-1.5`	Soil	02/12/2002 09:40	1
PZ-C @ 3.0-3.5`	Soil	02/12/2002 09:45	2
PZ-C @ 5.5-6.0`	Soil	02/11/2002 08:00	3
PZ-D @ 1.0-1.5`	Soil	02/12/2002 10:00	4
PZ-D @ 3.0-3.5`	Soil	02/12/2002 10:10	5
PZ-D @ 5.0-5.5`	Soil	02/11/2002 09:10	6
PZ-F @ 1.0-1.5`	Soil	02/12/2002 10:25	7
PZ-F @ 3.0-3.5`	Soil	02/12/2002 10:30	8
PZ-F @ 5.0-5.5`	Soil	02/11/2002 11:15	9
PZ-A @ 1.0-1.5`	Soil	02/11/2002 13:50	10
PZ-A @ 3.0-3.5`	Soil	02/11/2002 13:55	11
PZ-A @ 5.0-5.5`	Soil	02/11/2002 14:05	12
PZ-B @ 1.0-1.5`	Soil	02/12/2002 07:40	13
PZ-B @ 3.0-3.5`	Soil	02/12/2002 07:45	14
PZ-B @ 7.0-7.5`	Soil	02/12/2002 08:00	15

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-C @ 1.0-1.5'**	Lab Sample ID:	2002-02-0206-001
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/12/2002 09:40	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	4.7	1.0	mg/Kg	1.00	02/19/2002 03:58	ndp
Motor Oil	ND	50	mg/Kg	1.00	02/19/2002 03:58	
Surrogate(s)						
o-Terphenyl	95.1	60-130	%	1.00	02/19/2002 03:58	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-C @ 3.0-3.5'	Lab Sample ID:	2002-02-0206-002
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/12/2002 09:45	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	3.1	1.0	mg/Kg	1.00	02/19/2002 04:54	ndp
Motor Oil	ND	50	mg/Kg	1.00	02/19/2002 04:54	
Surrogate(s)						
o-Terphenyl	82.5	60-130	%	1.00	02/19/2002 04:54	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-C @ 5.5-6.0'	Lab Sample ID:	2002-02-0206-003
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/11/2002 08:00	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	2300	50	mg/Kg	50.00	02/19/2002 11:58	ndp
Motor Oil	ND	2500	mg/Kg	50.00	02/19/2002 11:58	
Surrogate(s)						
o-Terphenyl	NA	60-130	%	50.00	02/19/2002 11:58	sd

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-D @ 1.0-1.5'	Lab Sample ID:	2002-02-0206-004
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/12/2002 10:00	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	3.2	1.0	mg/Kg	1.00	02/19/2002 03:58	ndp
Motor Oil	ND	50	mg/Kg	1.00	02/19/2002 03:58	
Surrogate(s)						
o-Terphenyl	97.6	60-130	%	1.00	02/19/2002 03:58	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-D @ 3.0-3.5'	Lab Sample ID:	2002-02-0206-005
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/12/2002 10:10	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	22	1.0	mg/Kg	1.00	02/19/2002 04:54	ndp
Motor Oil	62	50	mg/Kg	1.00	02/19/2002 04:54	
Surrogate(s)						
o-Terphenyl	88.6	60-130	%	1.00	02/19/2002 04:54	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-D @ 5.0-5.5'**	Lab Sample ID:	2002-02-0206-006
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/11/2002 09:10	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	7700	100	mg/Kg	100.00	02/19/2002 12:37	
Motor Oil	ND	5000	mg/Kg	100.00	02/19/2002 12:37	
Surrogate(s)						
o-Terphenyl	NA	60-130	%	100.00	02/19/2002 12:37	sd

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-F @ 1.0-1.5'**	Lab Sample ID:	2002-02-0206-007
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/12/2002 10:25	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	41	5.0	mg/Kg	5.00	02/19/2002 11:18	ndp
Motor Oil	ND	250	mg/Kg	5.00	02/19/2002 11:18	
Surrogate(s)						
o-Terphenyl	NA	60-130	%	5.00	02/19/2002 11:18	sd

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-F @ 3.0-3.5'	Lab Sample ID:	2002-02-0206-008
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/12/2002 10:30	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	2.4	1.0	mg/Kg	1.00	02/19/2002 02:15	ndp
Motor Oil	ND	50	mg/Kg	1.00	02/19/2002 02:15	
Surrogate(s)						
o-Terphenyl	79.1	60-130	%	1.00	02/19/2002 02:15	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-F @ 5.0-5.5'**	Lab Sample ID:	2002-02-0206-009
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/11/2002 11:15	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	83	1.0	mg/Kg	1.00	02/19/2002 05:34	ndp
Motor Oil	170	50	mg/Kg	1.00	02/19/2002 05:34	
Surrogate(s)						
o-Terphenyl	85.2	60-130	%	1.00	02/19/2002 05:34	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-A @ 1.0-1.5'**	Lab Sample ID:	2002-02-0206-010
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/11/2002 13:50	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	4.9	1.0	mg/Kg	1.00	02/19/2002 03:34	ndp
Motor Oil	ND	50	mg/Kg	1.00	02/19/2002 03:34	
Surrogate(s)						
o-Terphenyl	85.8	60-130	%	1.00	02/19/2002 03:34	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-A @ 3.0-3.5**	Lab Sample ID:	2002-02-0206-011
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/11/2002 13:55	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	2.2	1.0	mg/Kg	1.00	02/19/2002 02:55	ndp
Motor Oil	ND	50	mg/Kg	1.00	02/19/2002 02:55	
Surrogate(s)						
o-Terphenyl	86.8	60-130	%	1.00	02/19/2002 02:55	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-A @ 5.0-5.5`	Lab Sample ID:	2002-02-0206-012
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/11/2002 14:05	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	02/19/2002 04:14	
Motor Oil	ND	50	mg/Kg	1.00	02/19/2002 04:14	
Surrogate(s)						
o-Terphenyl	85.9	60-130	%	1.00	02/19/2002 04:14	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-B @ 1.0-1.5'	Lab Sample ID:	2002-02-0206-013
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/12/2002 07:40	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	120	1.0	mg/Kg	1.00	02/19/2002 05:34	ndp
Motor Oil	360	50	mg/Kg	1.00	02/19/2002 05:34	
Surrogate(s)						
o-Terphenyl	90.1	60-130	%	1.00	02/19/2002 05:34	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-B @ 3.0-3.5'	Lab Sample ID:	2002-02-0206-014
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/12/2002 07:45	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	2.2	1.0	mg/Kg	1.00	02/19/2002 04:14	ndp
Motor Oil	ND	50	mg/Kg	1.00	02/19/2002 04:14	
Surrogate(s)						
o-Terphenyl	80.6	60-130	%	1.00	02/19/2002 04:14	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3550/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-B @ 7.0-7.5**	Lab Sample ID:	2002-02-0206-015
Project:	00-152.15 Port of Oakland	Received:	02/12/2002 14:10
Site:	2277 Seventh St Oakland CA	Extracted:	02/15/2002 15:04
Sampled:	02/12/2002 08:00	QC-Batch:	2002/02/15-09.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	02/19/2002 03:34	
Motor Oil	ND	50	mg/Kg	1.00	02/19/2002 03:34	
Surrogate(s)						
o-Terphenyl	84.3	60-130	%	1.00	02/19/2002 03:34	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

TEPH w/ Silica Gel Clean-up

Batch QC report

Test Method: 8015M

Prep Method: 3550/8015 M

Method Blank **Soil** **QC Batch # 2002/02/15-09.10**

MB: 2002/02/15-09.10-001 Date Extracted: 02/15/2002 15:04

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Diesel	ND	1	mg/Kg	02/19/2002 00:56	
Motor Oil	ND	50	mg/Kg	02/19/2002 00:56	
Surrogate(s)					
o-Terphenyl	90.4	60-130	%	02/19/2002 00:56	

Submission #: 2002-02-0206

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

TEPH w/ Silica Gel Clean-up

Batch QC report

Test Method: 8015M Prep Method: 3550/8015M

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2002/02/15-09.10**

LCS: 2002/02/15-09.10-002 Extracted: 02/15/2002 15:04 Analyzed: 02/18/2002 18:18

LCSD: 2002/02/15-09.10-003 Extracted: 02/15/2002 15:04 Analyzed: 02/18/2002 18:58

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Diesel	39.4	38.8	41.7	41.7	94.5	93.0	1.6	60-130	25		
Surrogate(s)											
o-Terphenyl	21.4	21.1	20.0	20.0	107.0	105.5		60-130	0		

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

TEPH w/ Silica Gel Clean-up

Legend & Notes

Test Method: 8015M Prep Method: 3550/8015M

Analyte Flags

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

Analyte Flags

sd

Surrogate recovery not reportable due to required dilution.

ITSI Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Chain-Of-Custody

15

Project Name and Number: PORT OF OAKLAND / 00-152.01
Project Manager: RACHEL HESS
Site Location: 2277 SEVENTH STREET, OAKLAND

Laboratory Name: STL CHRONALAB
Address: 1220 QUARRY LANE, PLEASANTON, CA
Contact Name: SURINDER SIDHU
Phone: (925) 484-1919

Date: 02/12/2002
Page: 1 of 2

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPHG by EPA 8015	Analysis: TPHd + Motor oil w/Silica gel	Analysis: BTEX w/MTBE by EPA 8020	Special Instructions/Comments
						Preservative: NONE			
						Container Type: STAINLESS STEEL SLEEVES			
PZ-C	1.0-1.5'	02/12/02	0940	1	SOIL	X	X	X	
PZ-C	3.0-3.5'	02/12/02	0945	1	"	X	X	X	
PZ-C	5.5-6.0'	02/11/02	0800	1	"	X	X	X	
PZ-D	1.0-1.5'	02/12/02	1000	1	"	X	X	X	
PZ-D	3.0-3.5'	02/12/02	1010	1	"	X	X	X	
PZ-D	5.0-5.5'	02/11/02	0910	1	"	X	X	X	
PZ-F	1.0-1.5'	02/12/02	1025	1	"	X	X	X	
PZ-F	3.0-3.5'	02/12/02	1030	1	"	X	X	X	
PZ-F	5.0-5.5'	02/11/02	1115	1	"	X	X	X	
PZ-A	1.0-1.5'	02/11/02	1350	1	"	X	X	X	
PZ-A	3.0-3.5'	02/11/02	1355	1	"	X	X	X	

Sampled By: ROGERIO LEONG
Signature:
Special Instructions: REFER TO TS012 PORT OF OAKLAND, JEFF RUBIN FOR BILLING
Send Results to: (w/fax #) REPORT TO RACHEL HESS @ ITSI FAX # (925) 256-8998
Turnaround Time: 5 DAYS

Sampler: ROGERIO LEONG / JIM ANDERSON
Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
	02/12/02	13:05		02/14/02	13:05
	02/14/02	1405			
				2/12/02	13:0

Original – Laboratory Yellow – Field/Office

ITSI Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Chain-Of-Custody

15

Project Name and Number: PORT OF OAKLAND / 00-152.01
Project Manager: RACHEL HESS
Site Location: 2277 SEVENTH STREET, OAKLAND

Laboratory Name: STL CHRONALAB
Address: 1220 QUARRY LANE
PLEASANTON, CA
Contact Name: SUKINDER SIDHU
Phone: (925) 484-1919

Date: 02/12/2002
Page: 2 of 2

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPHg by EPA 8015	TPHd + anchor oil w/silica gel	BTEX w/MTBE by EPA 8020	Special Instructions/Comments
PZ-A	5.0-5.5'	02/11/02	1405	1	soil	X	X	X	
PZ-B	1.0-1.5'	02/12/02	0740	1	"	X	X	X	
PZ-B	3.0-3.5'	02/12/02	0745	1	"	X	X	X	
PZ-B	7.0-7.5'	02/12/02	0800	1	"	X	X	X	

Preservative: NONE
Container Type: STAINLESS STEEL SLEEVES

Sampled By: ROGERIO LEONG
Signature:
Special Instructions: REFER TO TSOIZ PORT OF OAKLAND, JEFF RUBIN FOR BILLING.

Send Results to: (w/fax #) REPORT TO RACHEL HESS @ ITST FAX # (925) 256-8998
Turnaround Time: 5 DAYS

Sampler: ROGERIO LEONG / JIM ANDERSON
Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
	02/12/02	13:10		02/12/02	1310
		1410			
			N. Khammanivong	2/12/02	1310

Original – Laboratory Yellow – Field/Office

Chain-Of-Custody

Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Project Name and Number: PORT OF OAKLAND / 00.152-15
Project Manager: RACHEL HESS
Site Location: 2225 7th Street, Oakland, CA

Laboratory Name: STL CHRONALAB
Address: 1220 QUARRY LANE, PLEASANTON, CA
Contact Name: SURINDER SIDHU
Phone: (925) 484-1919

Date: 02/13/02
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPHG by EPA 8015	Analysis: TPHd & motor oil w/ silica gel	Analysis: BTEX w/ MTBE by EPA 8020	Preservative	Container Type	Special Instructions/Comments
									None	Stainless steel sleeves	
P2-E	1.0-1.5'	02/13/02	1300	1	Soil	X	X	X			
P2-E	3.0-3.5'	02/13/02	1305	1	"	X	X	X			
P2-E	5.5-6.0'	02/13/02	1250	1	"	X	X	X			

Sampled By: ROGERIO LEONG
Signature:
Special Instructions: REFER TO TS012
Port of Oakland - Jeff Rubin for billing
Send Results to: Rachel Hess @ ITSI
(w/fax #) Fax # (925) 256-8998
Turnaround Time: 5 DAYS

Sampler: ROGERIO LEONG / JIM ANDERSON
Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
	02/13/02	17:15		2/13/02	1715

Original – Laboratory Yellow – Field/Office

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

RECEIVED
APR - 4 2002

March 26, 2002

Rachel Hess, Project Manager
Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, CA 94598

Dear Ms. Hess:

Included are the results from the additional testing of material submitted on February 19, 2002 from your Port of Oakland / 00-152.15 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michele Rivera Costales
for

Charlene Morrow
Chemist

Enclosures
ITS0326R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Extracted: 03/21/02 and 03/22/02
Date Analyzed: 03/21/02 and 03/22/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLES FOR ORGANIC LEAD SPECIATION AND MANGANESE BY METHOD 8082 MODIFIED

Results Reported as µg/g (ppm)

Sample ID Laboratory ID	TML	TMEL	DMDEL	MTEL	TEL	MMT	Surrogate (% Recovery)
MW-3 202120-01	<5	<5	<5	<5	<5	<5	100
MW-1 202120-02	<5	<5	<5	<5	56	<5	84
PZ-F 202120-03	<5	<5	<5	<5	7	<5	87
Method Blank	<5	<5	<5	<5	<5	<5	93
Method Blank	<5	<5	<5	<5	<5	<5	114

TML	Tetramethyl Lead
TMEL	Trimethylethyl Lead
DMDEL	Dimethyldiethyl Lead
MTEL	Methyltriethyl Lead
TEL	Tetraethyl Lead
MMT	Methylcyclopentadienyl Manganese Tricarbonyl

Date of Report: 03/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR TETRAMETHYL LEAD AND TETRAETHYL LEAD BY GC/ECD

Laboratory Code: 202064-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Tetramethyl lead	µg/g (ppm)	<5	<5	nm
Tetraethyl lead	µg/g (ppm)	<5	<5	nm

Laboratory Code: 202064-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Tetramethyl lead	µg/g (ppm)	50	<5	88	87	50-150	1
Tetraethyl lead	µg/g (ppm)	50	<5	71	72	50-150	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Tetramethyl lead	µg/g (ppm)	50	96	97	50-150	1
Tetraethyl lead	µg/g (ppm)	50	92	93	50-150	1

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

March 26, 2002

Rachel Hess, Project Manager
Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, CA 94598

Dear Ms. Hess:

Included are the results from the additional testing of material submitted on February 6, 2002 from your Port of Oakland / 00-152.15 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

for
Charlene Morrow
Chemist

Enclosures
ITS0326R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Extracted: 03/21/02 and 03/22/02
Date Analyzed: 03/21/02 and 03/22/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLES FOR ORGANIC LEAD SPECIATION AND MANGANESE BY METHOD 8082 MODIFIED

Results Reported as µg/g (ppm)

Sample ID Laboratory ID	TML	TMEL	DMDEL	MTEL	TEL	MMT	Surrogate (% Recovery)
CPT-20 202033-01	<5	<5	<5	<5	<5	<5	98
CPT-14 202033-02	<5	<5	<5	<5	6	<5	93
CPT-19 202033-03	<5	<5	<5	<5	<5	<5	99
WRS-1 202033-04	<5	<5	<5	<5	<5	<5	103
CPT-30 202033-05	<5	<5	<5	<5	<5	<5	95
Method Blank	<5	<5	<5	<5	<5	<5	93
Method Blank	<5	<5	<5	<5	<5	<5	114

TML	Tetramethyl Lead
TMEL	Trimethylethyl Lead
DMDEL	Dimethyldiethyl Lead
MTEL	Methyltriethyl Lead
TEL	Tetraethyl Lead
MMT	Methylcyclopentadienyl Manganese Tricarbonyl

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR TETRAMETHYL LEAD AND TETRAETHYL LEAD BY GC/ECD

Laboratory Code: 202064-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Tetramethyl lead	µg/g (ppm)	<5	<5	nm
Tetraethyl lead	µg/g (ppm)	<5	<5	nm

Laboratory Code: 202064-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Tetramethyl lead	µg/g (ppm)	50	<5	88	87	50-150	1
Tetraethyl lead	µg/g (ppm)	50	<5	71	72	50-150	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Tetramethyl lead	µg/g (ppm)	50	96	97	50-150	1
Tetraethyl lead	µg/g (ppm)	50	92	93	50-150	1

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

APPENDIX C

INTERPRETATION METHODS AND REFERENCES

GREGG

Gregg In Situ CPT Interpretations as of January 7, 1999 (Release 1.00.19)

Gregg In Situ's interpretation routine should be considered a calculator of current published CPT correlations and is subject to change to reflect the current state of practice. The interpreted values are not considered valid for all soil types. The interpretations are presented only as a guide for geotechnical use and should be carefully scrutinized for consideration in any geotechnical design. Reference to current literature is strongly recommended.

The CPT interpretations are based on values of tip, sleeve friction and pore pressure averaged over a user specified interval (typically 0.25m). Note that Qt is the recorded tip value, Qc, corrected for pore pressure effects. Since all Gregg In Situ cones have equal end area friction sleeves, pore pressure corrections to sleeve friction, Fs, are not required.

The tip correction is: $Qt = Qc + (1-a) \bullet Ud$

where: *Qt* is the corrected tip load
Qc is the recorded tip load
Ud is the recorded dynamic pore pressure
a is the Net Area Ratio for the cone (typically 0.85 for Gregg In Situ cones)

Effective vertical overburden stresses are calculated based on a hydrostatic distribution of equilibrium pore pressures below the water table or from a user defined equilibrium pore pressure profile (this can be obtained from CPT dissipation tests). The stress calculations use unit weights assigned to the Soil Behavior Type zones or from a user defined unit weight profile.

Details regarding the interpretation methods for all of the interpreted parameters is given in table 1. The appropriate references referred to in table 1 are listed in table 2.

The estimated Soil Behavior Type is based on the charts developed by Robertson and Campanella shown in figure 1.

Table 1 CPT Interpretation Methods

Interpreted Parameter	Description	Equation	Ref
Depth	mid layer depth		
AvgQt	Averaged corrected tip (Qt)	$AvgQt = \frac{1}{n}\sum_{i=1}^{n} Qt_i$	
AvgFs	Averaged sleeve friction (Fs)	$AvgFs = \frac{1}{n}\sum_{i=1}^{n} Fs_i$	
AvgRf	Averaged friction ratio (Rf)	$AvgRf = 100\% \bullet \frac{AvgFs}{AvgQt}$	
AvgUd	Averaged dynamic pore pressure (Ud)	$AvgUd = \frac{1}{n}\sum_{i=1}^{n} Ud_i$	
SBT	Soil Behavior Type as defined by Robertson and Campanella		1

U.Wt.	Unit Weight of soil determined from: 1) uniform value or 2) value assigned to each SBT zone 3) user supplied unit weight profile		
TStress	Total vertical overburden stress at mid layer depth	$TStress = \sum_{i=1}^{n} \gamma_i h_i$ where γ_i is layer unit weight h_i is layer thickness	
EStress	Effective vertical overburden stress at mid layer depth	$EStress = TStress - Ueq$	
Ueq	Equilibrium pore pressure determined from: 1) hydrostatic from water table depth 2) user supplied profile		
Cn	SPT N_{60} overburden correction factor	$Cn=(\sigma_v')^{-0.5}$ where σ_v' *is in tsf* $0.5 < C_n < 2.0$	
N_{60}	SPT N value at 60% energy calculated from Qt/N ratios assigned to each SBT zone		3
$(N1)_{60}$	SPT N_{60} value corrected for overburden pressure	$N1_{60} = Cn \bullet N_{60}$	3
$\Delta(N1)_{60}$	Equivalent Clean Sand Correction to $(N1)_{60}$	$\Delta(N1)_{60} = \frac{K_{SPT}}{1 - K_{SPT}} \bullet (N1)_{60}$ Where: K_{SPT} is defined as: 0.0 for FC < 5% 0.0167 • (FC - 5) for 5% < FC < 35% 0.5 for FC > 35% FC - Fines Content in %	7
$(N1)_{60cs}$	Equivalent Clean Sand $(N1)_{60}$	$(N1)_{60cs} = (N1)_{60} + \Delta(N1)_{60}$	7
Su	Undrained shear strength - Nkt is use selectable	$Su = \frac{Qt - \sigma_v}{N_{kt}}$	2
k	Coefficient of permeability (assigned to each SBT zone)		6
Bq	Pore pressure parameter	$Bq = \frac{\Delta u}{Qt - \sigma_v}$	2
Qtn	Normalized Qt for Soil Behavior Type classification as defined by Robertson, 1990	$Qtn = \frac{Qt - \sigma_v}{\sigma_v'}$	4
Rfn	Normalized Rf for Soil Behavior Type classification as defined by Robertson, 1990	$Rfn = 100\% \bullet \frac{f_s}{Qt - \sigma_v}$	4
SBTn	Normalized Soil Behavior Type (slightly modified from that published by Robertson, 1990. This version includes all the soil zones of the original non-normalized SBT chart - see figure 1)		4
Qc1	Normalized Qt for seismic analysis	$qc1 = qc \bullet (Pa/\sigma_v')^{0.5}$ where: Pa = atm. pressure	5
Qc1N	Dimensionless Normalized Qt1	qc1N = qc1 / Pa where: Pa = atm. pressure	

ΔQc1N1	Equivalent clean sand correction	$\Delta qc1N = \frac{K_{cpt}}{1 - K_{cpt}} \bullet qc1N$ Where: K_{CPT} is defined as: 0.0 for FC < 5% 0.0267 • (FC - 5) for 5% < FC < 35% 0.5 for FC > 35% FC - Fines Content in %	5
Qc1Ncs	Clean Sand equivalent Qc1N	$qc1Ncs = qc1N + \Delta qc1N$	5
Ic	Soil index for estimating grain characteristics	$Ic = [(3.47 - logQ)^2 + (log F + 1.22)^2]^{0.5}$	5
FC	Fines content (%)	$FC=1.75(Ic^{3.25}) - 3.7$ $FC=100$ for $Ic > 3.5$ $FC=0$ for $Ic < 1.26$ $FC = 5\%$ if $1.64 < Ic < 2.6$ AND $Rfn<0.5$	8
PHI	Friction Angle	Campanella and Robertson Durunoglu and Mitchel Janbu	1
Dr	Relative Density	Ticino Sand Hokksund Sand Schmertmann 1976 Jamiolkowski - All Sands	1
OCR	Over Consolidation Ratio		1
State Parameter			9
CRR	Cyclic Resistance Ratio		7

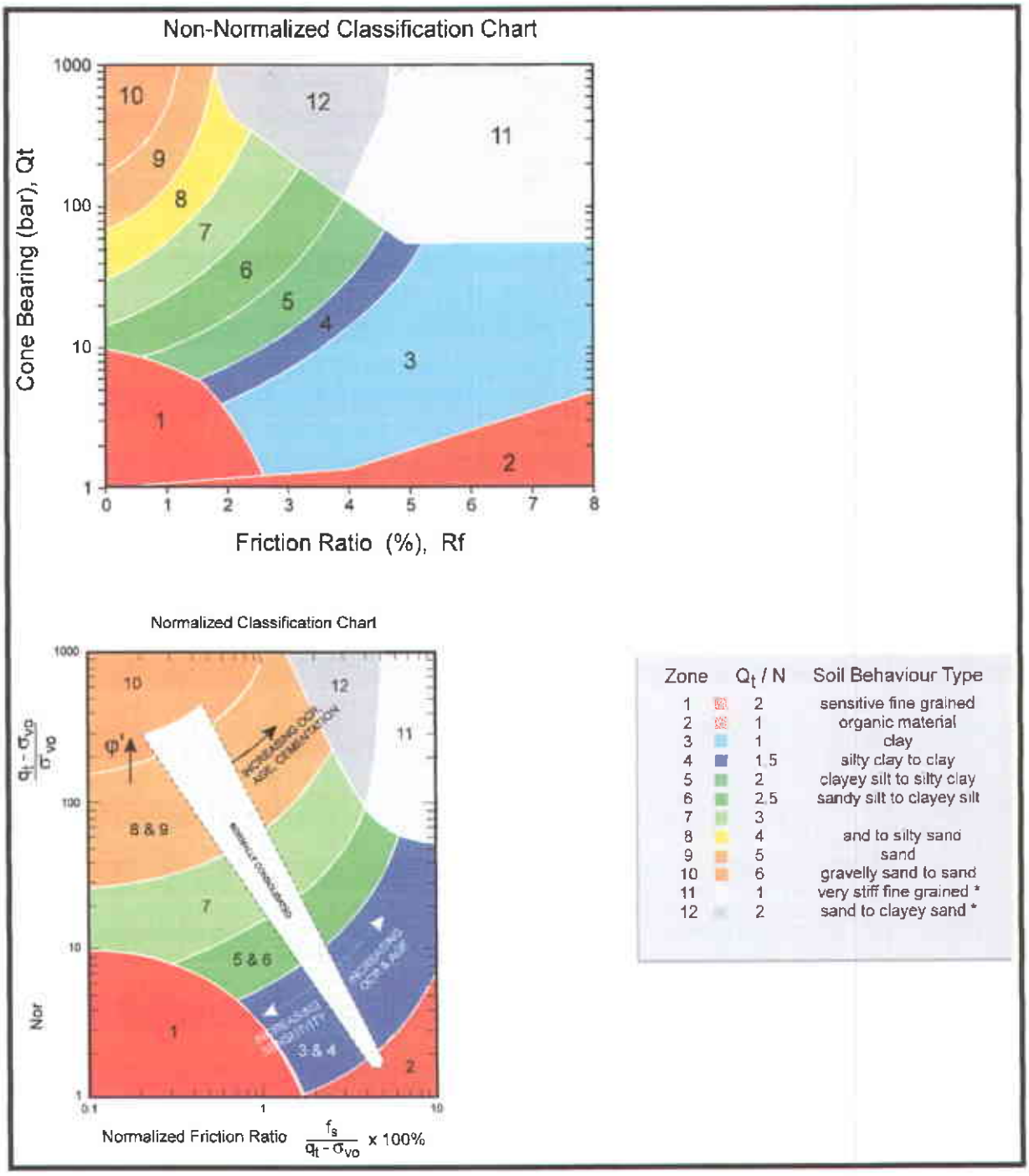


Figure 1
Non-Normalized and Normalized Soil Behavior Type
Classification Charts

GREGG

Table 2 References

No.	Reference
1	Robertson, P.K. and Campanella, R.G., 1986, "Guidelines for Use, Interpretation and Application of the CPT and CPTU", UBC, Soil Mechanics Series No. 105, Civil Eng. Dept., Vancouver, B.C., Canada
2	Robertson, P.K., Campanella, R.G., Gillespie, D. and Greig, J., 1986, "Use of Piezometer Cone Data", Proceedings of InSitu 86, ASCE Specialty Conference, Blacksburg, Virginia.
3	Robertson, P.K. and Campanella, R.G., 1989, "Guidelines for Geotechnical Design Using CPT and CPTU", UBC, Soil Mechanics Series No. 120, Civil Eng. Dept., Vancouver, B.C., Canada
4	Robertson, P.K., 1990, "Soil Classification Using the Cone Penetration Test", Canadian Geotechnical Journal, Volume 27.
5	Robertson, P.K. and Fear, C.E., 1995, "Liquefaction of Sands and its Evaluation", Keynote Lecture, First International Conference on Earthquake Geotechnical Engineering, Tokyo, Japan.
6	Gregg In Situ Internal Report
7	Robertson, P.K. and Wride, C.E., 1997, "Cyclic Liquefaction and its Evaluation Based on SPT and CPT", NCEER Workshop Paper, January 22, 1997
8	Wride, C.E. and Robertson, P.K., 1997, "Phase II Data Review Report (Massey and Kidd Sites, Fraser River Delta)", Volume 1 - Data Report (June 1997), University of Alberta.
9	Plewes, H.D., Davies, M.P. and Jefferies, M.G., 1992, "CPT Based Screening Procedure for Evaluating Liquefaction Susceptibility", 45th Canadian Geotechnical Conference, Toronto, Ontario, October 1992.

APPENDIX D

DATA DISKETTE

GREGG

LOCATION 2277 7TH STREET

SURFACE ELEVATION _____

DRILLING METHOD 8" Hollow Stem Auger

SAMPLING METHOD Cal. Mod. Split Spoon

BORING DEPTH 15.5' ± 0.2'

DATE BEGAN 1340 | 11 FEB 2002

DATE FINISHED 15 | 11 FEB 2002

LOGGED BY J. ANDERSON

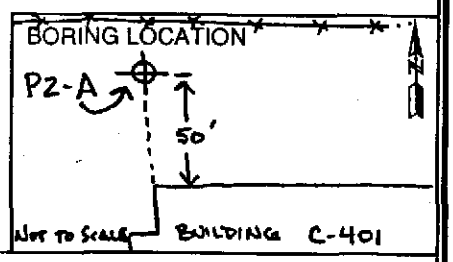
EDITED BY _____

CHECKED BY _____

BORING NO. PZ-A

SHEET 1 OF 1

BORING LOCATION



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) Background/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0							AC	ASPHALT
			0.2	13/20	E.		GW	WELL GRADED GRAVEL WITH CLAY AND SAND (GW), OLIVE BROWN (2.5Y4/3), MOIST, MEDIUM DENSE, 45-55% FINE TO COARSE GRAVEL TO 2.5" (?), ANGULAR, 35-45% FINE TO COARSE SAND, ANGULAR TO SUBANGULAR, 5-15% CLAY, MEDIUM PLASTICITY.
							SC	@ ~1.5' CLAYEY SAND (SC), LIGHT OLIVE BROWN (2.5Y5/4), MOIST, MEDIUM DENSE, 55-65% FINE TO MEDIUM SAND, ANGULAR, 35-45% CLAY (MINOR SILT), MEDIUM PLASTICITY.
			0.1	4/8/10	E			TRACE MINOR FINE GRAVEL TO 3/8" (<1%) ANGULAR
								ZONES RICH IN SAND/CLAY INTERMIXED @ 4.3 - 4.4'
							SP	POORLY GRADED SAND WITH CLAY (SP), 85-95% F-M SAND, 5-15% CLAY.
5.0				4/7/9	G.T.		SC	@ 4.4' AS ABOVE: CLAYEY SAND (SC), CLAY IN NODULES AND INTERMIXED WITH SAND %. @ 5.5' CLAY % DECREASING: 70-80% FINE TO MEDIUM SAND, 20-30% CLAY
			0.1					
		▽		4/5/6	E.		SC	@ 7: @ ~7' WET, CLAY STILL PRESENT IN NODULES AND INTERMIXED WITH SAND %.
			0.1	4/5/5				
							SC	@ 8.9' OLIVE GRAY (5Y5/2)
			0.0				SC	~~@ 9' LIGHT OLIVE BROWN (2.5Y5/4)~~ JWC
				3/7/N.D.			SC	@ 9.2' DARK OLIVE GRAY (5Y3/2).
10.0			0.0				SP	@ 10.1' CLAY DECREASES: POORLY GRADED SAND (SP), DARK GRAY (5Y4/1), 85-95% F-M SAND, 5-15% FINES
				4/13/5			CH	@ 10.9' CLAY % INCREASING: SANDY FAT CLAY (CH), MOTTLED DARK GREENISH GRAY, VERY DARK GRAY & LIGHT GREENISH GRAY (10BG4/1, N3/, 10Y7/1), MOIST TO WET, 50-60% FAT CLAY, HIGH PLASTICITY, 10-20% SILT, 20-30% F-M SAND.
			0.0					@ 12' TRACE <1% PEAT
				4/4/5	G.T.		SC	@ 12.1' CLAYEY SAND (SC), DARK GREENISH GRAY (GGY3/1), 70-80% F-M SAND, 20-30% CLAY → POSSIBLE SLUFF @ 12.5' CLAY INCREASING - FAT CLAY (CH), 95-100% CLAY, HIGH PLASTICITY, 0-5% FINE SAND. BLACK (N2.5/), SOFT,
			0.0				CH	
							SC	@ 13.0' CLAYEY SAND (SC), MOTTLED DARK GREENISH GRAY, BLACK (10Y3/1, N2.5/), 70-80% F-M SAND, ANGULAR, 20-30% CLAY.
				4/7/7			SP	POORLY GRADED SAND LENS, 85-95% F-M SAND, 5-15% FINES
15.0							SC	CLAYEY SAND (SC) AS ABOVE AT 13'

(?) SIZE DETERMINED BY SAMPLER [2.5"]

E = ENVIRONMENTAL SAMPLE TAKEN

G.T. = GEOTECHNICAL SAMPLE TAKEN

ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

PROJECT NO. 00-152.15

LOCATION 2277 7TH STREET

SURFACE ELEVATION _____

DRILLING METHOD 8" HOLLOW STEM AUGER

SAMPLING METHOD CAL. MOD. SPLIT SPOON

BORING DEPTH 15'

DATE BEGAN 0725/0825/12 FEB 2002 GWC

DATE FINISHED 0910 12 FEB 2002

LOGGED BY J. ANDERSON

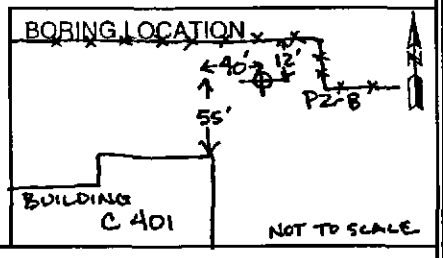
EDITED BY _____

CHECKED BY _____

BORING NO. PZ-B

SHEET 1 OF 1

BORING LOCATION



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) B-zone/stem/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0						AC		ASPHALT
			0			GW/GC		WELL GRADED GRAVEL WITH CLAY & SAND (GW/GC) OLIVE BROWN (2.5Y4/4), MOIST, MEDIUM DENSE, 55-65% FINE TO COARSE GRAVEL TO 1.75", SUBANGULAR TO SUBROUNDED, 20-30% FINE TO COARSE SAND, ANGULAR, 10-20% CLAY, MEDIUM TO HIGH PLASTICITY, (BASE ROCK).
			2.6	42 48 46	E.	SC		@0.8' CLAYEY SAND WITH GRAVEL (SC) GREENISH BLACK (10Y2.5/1), MOIST, DENSE, 40-50% FINE TO COARSE SAND, ANGULAR TO SUBROUNDED, 15-25% FINE GRAVEL, SUBANGULAR TO SUBROUNDED, 20-30% CLAY, MEDIUM TO HIGH PLASTICITY.
						GC		@1.8' GRAVEL PERCENTAGE INCREASING: CLAYEY GRAVEL WITH SAND (GC), 2.0' 40-50% FINE TO COARSE GRAVEL TO 1.75" SUBANGULAR TO SUBROUNDED, 25-35% FINE TO COARSE SAND, ANGULAR TO SUBROUNDED, 20-30% CLAY.
						CH		@2.6'
			0.8	7 8 9	E.	SC		@3' CLAYEY SAND (SC), PALE OLIVE (5Y6/3), MOIST, LOOSE, 60-70% FINE TO MED. SAND, ANGULAR, 25-35% CLAY, MEDIUM PLASTICITY, 5-15% SILT, ZONES OF CLAY WITHIN SAMPLE.
						SP		@3.5' CLAY/SILT DECREASING - POORLY GRADED SAND (SP), 90-95% FINE TO MEDIUM SAND, 5-10% SILT AND CLAY.
						SC/MH		@4' SILT/CLAY INCREASING - INTERMIXED CLAYEY SAND AND SANDY ELASTIC SILT (SC/MH), PALE OLIVE (5Y6/3) AND DARK GRAY (5Y4/1), MOIST, LOOSE/SOFT, (SC) IS 70-80% F-M SAND, 10-20% CLAY, 5-10% SILT, (MH) IS 50-60% SILT, 20-30% CLAY, 20-30% FINE SAND, MEDIUM PLASTICITY.
5.0						CH		@4.5' SANDY FAT CLAY (CH), MOTTLED OLIVE GRAY, BLACK AND OLIVE (5Y4/2, 5Y2.5/1 & 5Y 4/4), MOIST, MEDIUM STIFF TO STIFF, 50-60% FAT CLAY, MEDIUM TO HIGH PLASTICITY, 15-25% SILT, 25-35% FINE TO MEDIUM SAND, ANGULAR, WITHIN SAME ZONES RICH IN CLAY, SILT AND SAND PRESENT.
			0.7	5 7 7	G.T.			
								@6' SAND % INCREASING 45-55% CLAY, 15-25 SILT, 35-45% FINE TO MEDIUM SAND
			0.3	6 6 7	E.			
						CH		@7.3-7.4' BLACK (5Y2.5/1)
								@7.4' MOTTLED AS ABOVE.
								@8.5-8.9' BLACK (5Y2.5/1)
								@8.9' MOTTLED AS ABOVE.
			17.2	5 8 11				@9.0' GRAVELLY FAT CLAY WITH SAND (CH) DARK GREENISH GRAY (10Y3/1), WET, MED. STIFF, 40-50% FAT CLAY, M-H PLASTICITY, 30-40% F-C GRAVEL TO 2.5", ANGULAR TO SUBROUNDED, 20-30% FINE TO COARSE SAND, ANGULAR TO SUB-ANGULAR, MODERATE TO STRONG HYDROCARBON ODOR.
10.0			13.0	13 28				OBSTRUCTION IN DRILLING AT 9.5-10' (ROCK) SAMPLER ONLY DRIVEN TO 10". SAMPLE RECOVERY ~5", COVERED WITH PRODUCT.
						GC		@10' CLAYEY GRAVEL WITH SAND (GC) DARK GREENISH GRAY (10Y3/1), WET DENSE, 45-55% FINE TO COARSE GRAVEL TO 2.5" (?) ANGULAR TO SUBANGULAR, 30-40% FINE TO COARSE SAND, ANGULAR, 15-25% CLAY, MEDIUM TO HIGH PLASTICITY, MEDIUM TO STRONG HYDROCARBON ODOR.
				50 N.D.				
				N.D.				
			15.3	22 50				(12-15') ✓ UPON SAMPLE RETRIVAL SAMPLER REMAINED IN THE BOREHOLE. NO SAMPLE RECOVERY - 12 TO 15' LOGGED FROM AUGER FLIGHTS UPON REMOVAL. CLAY % INCREASES WITH DEPTH, COLOR SAME, ODOR DECREASES. 35-45% F-C GRAVEL, 25-35% FINE - COARSE SAND, 30-40% CLAY.
15.0								BOTTOM OF BOREHOLE @ 15.0' (SAMPLER LOST INTO BOTTOM OF BORING).

E. = ENVIRONMENTAL SAMPLE TAKEN.
G.T. = GEOTECHNICAL SAMPLE TAKEN.

ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

PROJECT NO. 00-152.15

PZ-C

LOCATION: PORT OF OAKLAND

BORING DEPTH: 15.5'

BORING NO. ~~PZ-20~~ (initialed: gua)

SURFACE ELEVATION:

DATE BEGAN: ~~0830~~ 0730 (initialed: gua) 11 FEB 2002

SHEET 1 OF 1

DRILLING METHOD: 8" Hollow Stem Auger

DATE FINISHED: ~~0900~~ 0840 (initialed: gua) 11 FEB 2002

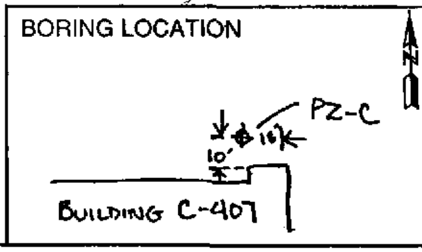
SAMPLING METHOD: CAL. MOD. SPLIT SPOON

LOGGED BY: J. ANDERSON

EDITED BY:

CHECKED BY:

BORING LOCATION



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) ~~[illegible]~~/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0								ASPHALT. @6" DARK GREENISH GRAY (10Y4/1), POORLY GRADED SAND (SP), MOIST, LOOSE, ~~70-80%~~ ~~75~~ 75-85% FINE TO MEDIUM SAND, 0-5% COARSE GRAIN SAND, 5-10% FINE GRAVEL, 0-5% FINE GRAVEL SIZED CLAY NODULES, GRAVEL TO 10MM, SAND & GRAVEL ANGULAR TO SUBANGULAR, SAND IS 55-65% QUARTZ, 10-20% FELDSPAR & 25-35% LITHIC & MAFIC.
			0.0	(18) ■				
				11 (30)			70-80	@1' WELL GRADED SAND WITH GRAVEL (SW), GREENISH BLACK (5GY2.5/1), ~~70~~ 75-85% FINE TO COARSE SAND (80-90% F-M SAND, 10-20% C SAND), 15-25% FINE TO COARSE GRAVEL (90-100% F GRAVEL, 0-10% C GRAVEL), 0-5% FINES, SAND ANGULAR TO SUBROUNDED, GRAVEL SUBANGULAR TO SUBROUNDED.
			N.D. (gua)	21 (29)				
			0.2	25				GRAVEL DECREASING
				10 (15) ■				POORLY GRADED SAND (SP), DARK GREENISH GRAY (10Y3/1), 95-100% FINE TO MEDIUM SAND (70-80% M SAND, 20-30% F SAND), ANGULAR, 60-70% QUARTZ, 5-15% FELDSPAR, 20-30% MAFIC & LITHIC, TRACE <2% FINE ANGULAR GRAVEL TO 15MM.
				12 (19)				
				19				@4.5' SLIGHT HYDROCARBON ODOR, NO TRACE GRAVEL.
5.0				4				@5.0' (70-80% F SAND, 20-30% M SAND), STRONG HYDROCARBON ODOR. GRAIN SIZE INCREASING
			8.9	5				
				8				@5.8' GREENISH GRAY (5GY5/1), (60-70% M SAND, 30-40% F SAND).
		▼		7				@6.3' WET
			40.6	10				@6.6' STRONG HYDROCARBON ODOR, CORE BOX STAINED FROM PRODUCT, TRACE <1% SEA SHELLS, SATURATED
				15				@7.5' BOX SAMPLE HAS 34 PPM READING. BOX HAS NO STAINING BELOW 7.5'.
				6				
				7				
			13.0	10				@8.7' TRACE <3% SEA SHELLS
				5				
				7				
10.0			7.1	9				
				2				
			6.2	3				
				3				FAT CLAY (CH), DARK GREENISH GRAY (10Y4/1), WET, SOFT, ~~85-95%~~ 95-100% FAT CLAY, ~~5-15%~~ 0-5% SILT, TRACE <1% FINE SAND, NO HYDROCARBON ODOR, HIGH PLASTICITY, HIGH DRY STRENGTH
				4				
				4				
				4				
			2.7	N.R.				TIP OF SHOE HAD GREENISH BLACK (5GY2.5/1) FAT CLAY (CH)
				N.R.				
				N.R.				
15.0								BOTTOM OF BOREHOLE AT 15.5'

ITSI Innovative Technical Solutions, Inc.

N.D. - NOT DETECTED ABOVE BACKGROUND
N.R. - NOT RECORDED
(15) - RESAMPLE ON 12 FEB. 2002

PROJECT: PORT OF OAKLAND

PROJECT NO. 00-152.15

LOCATION 2277 7th Street

SURFACE ELEVATION N/A

DRILLING METHOD 8" Hollow Stem Auger

SAMPLING METHOD California Mod. Split Spoon

BORING DEPTH 15.5 Feet

DATE BEGAN 0850 / 11 Feb 2002

DATE FINISHED 11 Feb 2002

LOGGED BY R. Leong

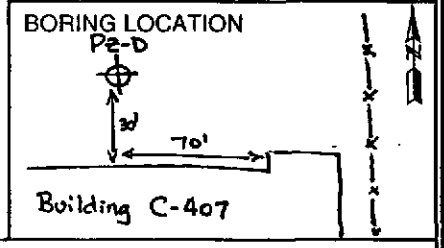
EDITED BY

CHECKED BY

BORING NO. Pz-D

SHEET 1 OF 1

BORING LOCATION



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) B-zone/stem/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0								Asphalt = 6 inches
			0.6	(18) 12/(24) 32/25 42		SP		Poorly graded clayey sand (SP), brownish yellow (10YR 6/6), sand is predominantly fine grained (75-80%), some coarse sand is subangular to subrounded (10-15%), clay is highly plastic (15-5%), moist, loose, and no hydrocarbon odor (base rock)
			0.9	42(13) 50(11)		SP		Poorly graded sand with gravel (SP), very dark gray (5Y 3/1), sand is mostly very fine to medium (60-70%), some coarse subangular to subrounded sand (20-15%), few predominantly fine gravel up to 1.5 inch size (20-10), Trace clay in nodules (0-5%), moist, loose, no hydrocarbon odor
			2.0	N.D.(14)		SW		Rock in borehole, sampler driven 9 inches Well graded sand with gravel (SW), olive gray (5Y 5/2), sand is fine to medium grained (75-85%), gravel is fine and subangular up to 1.5" size (20-10%) trace clay (0-5%) moist, loose, slight hydrocarbon odor
5.0			32.9	22/28 31		GW		Well graded gravel with sand (GW), very dark gray (5Y 3/1), gravel is fine, subangular to angular (60-70%) up to 1.5" size, sand is fine to medium grained (40-30%), moist, medium dense, no hydrocarbon odor.
			121.8	13/22 31		SP		Poorly graded sand (SP), light olive brown (2.5Y 5/4), sand is medium grained (95-100%), trace clay nodules (0-5%), moist to wet, loose, strong hydrocarbon odor (core sampler box has oil staining)
			71.1	7/8/10		SW		Well graded sand (SW) very dark gray (5Y 3/1), sand is very fine to medium grained (80-70%) gravel is fine, subrounded up to 1/4" size (15-5%), trace clay (0-5%), moist to wet, loose, strong hydrocarbon odor
			16.8	6/6/2		SP		Poorly graded sand (sp), dark gray (2.5Y 4/1), sand is medium grained (95-100%) trace clay (5-0%), wet, loose, very strong hydrocarbon odor (oil staining visible in core sampler box)
10.0				4/5/3				- Moderate hydrocarbon odor - Trace of fine subangular gravel (<1%) up to 1.5" size
			12.2	4/3/3		CH		Fat clay (CH), (95-100%) dark greenish gray (10GY 4/1), trace silt (0-5%), highly plastic, high dry strength, wet, soft, no hydrocarbon odor
			2.2					
15.0								

N.D. = Not driven

( ) = Resample on 12 Feb. 2002

ITSI Innovative Technical Solutions, Inc.

PROJECT Port of Oakland

PROJECT NO. 00-152.15

LOCATION 2225 7TH STREET

SURFACE ELEVATION

DRILLING METHOD 8" HOLLOW STEM AUGER

SAMPLING METHOD DIRECT PUSH

BORING DEPTH 15'

DATE BEGAN 1230 | 13 FEB2002

DATE FINISHED 13FEB2002

LOGGED BY J. ANDERSON

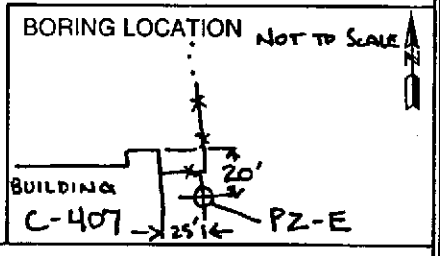
EDITED BY

CHECKED BY

BORING NO. PZ-E

SHEET 1 OF 1

BORING LOCATION NOT TO SCALE



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) Based/Sterm/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0				DIRECT PUSH	E.		AC	ASPHALT
							SP	POORLY GRADED SAND WITH CLAY (SP), DARK GRAY (5Y4/1), LOOSE, MOIST, 85-95% FINE TO MEDIUM SAND, ANGULAR TO SUBANGULAR, 5-15% CLAY, TRACE <5% FINE GRAVEL AT CONTACT WITH ASPHALT. @ 1' CLAY % DECREASES - (SP), DARK OLIVE GRAY (5Y3/2), 95-100% FINE TO MEDIUM SAND, 0-5% FINES.
			1.0	D. P.	E.		SP SC SP SC SP	@3' SANDY CLAY/CLAYEY SAND NODULES TO 1/2" WITHIN POORLY GRADED SAND 5-15% SEA SHELLS 3-4', @ 4' OLIVE GRAY (5Y5/2).
			0.7	D. P.			SP	
5.0							SP	@5' STRONG HYDROCARBON ODOR
				D. P.	E.		SP	@6-7' 5-15% SEA SHELLS @6.8' WET
		▽	151.0					@7' SANDY CLAY/CLAYEY SAND NODULES NO LONGER PRESENT
			99.6	D. P.			SP	
			32.4	D. P.			SP	
10.0				D. P.			SP CH	CLAY INCREASING/SAND DECREASING FAT CLAY (CH), DARK GREENISH GRAY (10GY4/1), SOFT, WET, 90-100% CLAY, 0-5% SILT, 0-5% FINE SAND, HIGH PLASTICITY, LOW TOUGHNESS SLIGHT HYDROCARBON ODOR.
			0.5	D. P.	GT			HYDROCARBON ODOR NO LONGER PRESENT
				D. P.				@13' BLACK (N2.5/), HAND LENS VIEW REVEALS TINY FIBERS (PEAT)
				D. P.				SAND % INCREASING
15.0			0.0				SC	@14.8' CLAYEY SAND (SC) DARK GREENISH GRAY (10Y4/1), MEDIUM DENSE, WET, 70-80% FINE TO MEDIUM SAND, ANGULAR, 20-30% CLAY. BOTTOM OF BOREHOLE AT 15'

E = ENVIRONMENTAL SAMPLE TAKEN
GT = GEOTECHNICAL SAMPLE TAKEN

ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

PROJECT NO. 00-152.15

LOCATION 2277 7TH STREET

SURFACE ELEVATION _____

DRILLING METHOD 8" HOLLOW STEM AUGER

SAMPLING METHOD CAL. MOD. SPLIT SPOON

BORING DEPTH 15.5'

DATE BEGAN ~~1050~~ 1100 11 FEB 2002

DATE FINISHED 11 FEB 2002

LOGGED BY J. ANDERSON

EDITED BY _____

CHECKED BY _____

BORING NO. PZ-F

SHEET 1 OF 1

BORING LOCATION
BUILDING C
20'
162'
PZ-F
NOT TO SCALE

DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) B-zone/stem/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0							AC	ASPHALT
			2.1	(13)	S.S.S.	GW	GW	WELL GRADED GRAVEL WITH SAND (GW), LIGHT OLIVE BROWN (2.5Y 5/4), MOIST, LOOSE, 45-55% FINE TO COARSE GRAVEL TO 3" SUBANGULAR TO SUBROUNDED, 35-45% FINE - MEDIUM, 0-5% COARSE SAND, SAND ANGULAR, 5-10% SILT, MAJORITY OF GRAVEL IS 1" TO 2".
				12 (22) 28 (9)		SW	SW	@ 0.8' WELL GRADED SAND WITH GRAVEL (SW), GREENISH BLACK (10Y 2.5/1), MOIST, LOOSE, 60-70% FINE TO COARSE SAND (85-95% FINE TO MEDIUM SAND), 5-15% COARSE, 10-20% FINE TO COARSE GRAVEL (95% FINE) TO 1.5", GRAVEL ANGULAR TO SUBROUNDED, SAND ANGULAR TO SUBROUNDED, 5-10% FINES.
			1.0	19	S.S.	qwa	SP	@ 2.3' POORLY GRADED SAND (SP), VERY DARK GRAY (5Y 3/1), MOIST, LOOSE, 85-95% FINE TO MEDIUM SAND, 0-5% COARSE SAND, 0-5% FINE GRAVEL, 0-5% FINES, SAND IN ANGULAR TO SUBROUNDED, GRAVEL SUBANGULAR TO SUBROUNDED.
				7 (3) 8 (4) 10 (5)	S.S.S.		CH	@ 3' (.1' THICK CLAY LENS) FAT CLAY (CH), DARK OLIVE GRAY (5Y 3/2), MOIST, SOFT, HIGH PLASTICITY, 90-100% CLAY, 0-5% SILT, 0-5% FINE SAND,
			0.9				SP	@ 3.1' POORLY GRADED SAND (SP), OLIVE GRAY (5Y 5/2), MOIST, LOOSE, 100% FINE TO MEDIUM SAND (70-80% FINE SAND, 20-30% MEDIUM SAND), ANGULAR, 60-70% QUARTZ, 5-10% FELDSPAR, 25-35% LITHIC & MAFIC.
5.0				(N) 38 (3)				@ 4.8-5.2' (CONTACT) 3 ATTEMPTS AT THIS DEPTH
				6 12 13	S.S.S.		CH	SANDY FAT CLAY WITH GRAVEL (CH), MOTTLED VERY DARK GRAY, DARK GREENISH GRAY & DARK OLIVE GRAY (N3/, 5GY 4/1 & 5Y 3/2), MEDIUM STIFF, MOIST, 65-75% HIGH PLASTICITY, 65-75% FAT CLAY, 5-15% SILT, 15-25% (10-20% SAND (FINE), 10-20% FINE TO 60-70% COARSE GRAVEL TO 2.5" SAND AND GRAVEL ANGULAR, TRACE <1% WOOD FRAGMENTS, SLIGHT HYDROCARBON ODOR, GRAVEL IS META-MORPHIC (GNEISSIC).
			3.0	N.D.[35]				@ 6.8 GRAVEL NO LONGER PRESENT / SAND AND CLAY CONTENTS VARY
				4 5 6			SC/CH	BETWEEN CLAYEY SAND / SANDY FAT CLAY (SC/CH), DARK GREENISH GRAY (10Y 4/1), WET, MEDIUM DENSE / SOFT MEDIUM STIFF, 40-60% FINE TO MEDIUM SAND, 95-55% FAT CLAY, 5-15% SILT, SAND ANGULAR, HIGH PLASTICITY, STRONG HYDROCARBON ODOR.
			41.2	4 5 7			SC	CLAY CONTENT DECREASING @ 7.5' CLAYEY SAND (SC), 65-75% FINE SAND, 0-5% MEDIUM SAND, ANGULAR, 25-35% CLAY, MEDIUM TO HIGH PLASTICITY, STRONG HYDROCARBON ODOR.
								@ 8' 70-80% F-M SAND & SILT, 15-25% CLAY & SILT, STRONG HYDROCARBON ODOR.
			23.0	8 2 6			CH	@ 8.5 CLAY INCREASING, SANDY FAT CLAY (CH), GREENISH GRAY (5GY 6/1), 55-65%, WET, SOFT, 60-70% FAT CLAY, 0-10% SILT, 15-25% FINE SAND
							SC	HIGH PLASTICITY
							SC	@ 8.8-8.9' CLAYEY SAND (SC) 70-80% FINE SAND, ANGULAR, 20-30% SILT & CLAY, MEDIUM PLASTICITY, DARK GREENISH GRAY (10Y 4/1), MEDIUM DENSE, STRONG HYDROCARBON ODOR.
10.0			2.6				CH	@ 8.9-9.0 (CH) SANDY FAT CLAY, MOTTLED VERY DARK GRAY, BLA WITH BLACK AND LIGHT GREENISH GRAY SPOTS (N3/, N2.5/ & 10Y 7/1), STIFF, MOIST, 60-70% CLAY, HIGH PLASTICITY, 20-30% FINE SAND, <1% MEDIUM TO COARSE SAND, 10-20% SILT.
			NO RECOVERY	NO MORE SAMPLES				@ 10' SILT & SAND DECREASING, MOTTLED BLACK AND DARK GREENISH GRAY (N2.5/ & 10GY 5/1) 70-80% CLAY, HIGH PLASTICITY, 10-20% FINE SAND, 0-10% SILT NO HYDROCARBON ODOR AT 10.5'
					GRAB			GRAB SAMPLE FROM SIDE OF AUGERS REVEALS SANDY FAT CLAY (CH), DARK GREENISH GRAY (10Y 4/1)
15.0								

(2) BLOW COUNTS 2ND ATTEMPT 4.5-6.0
(3) " " 3RD " " - "
(13) BLOW COUNTS FOR RESAMPLE 12 FEB 2002

Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

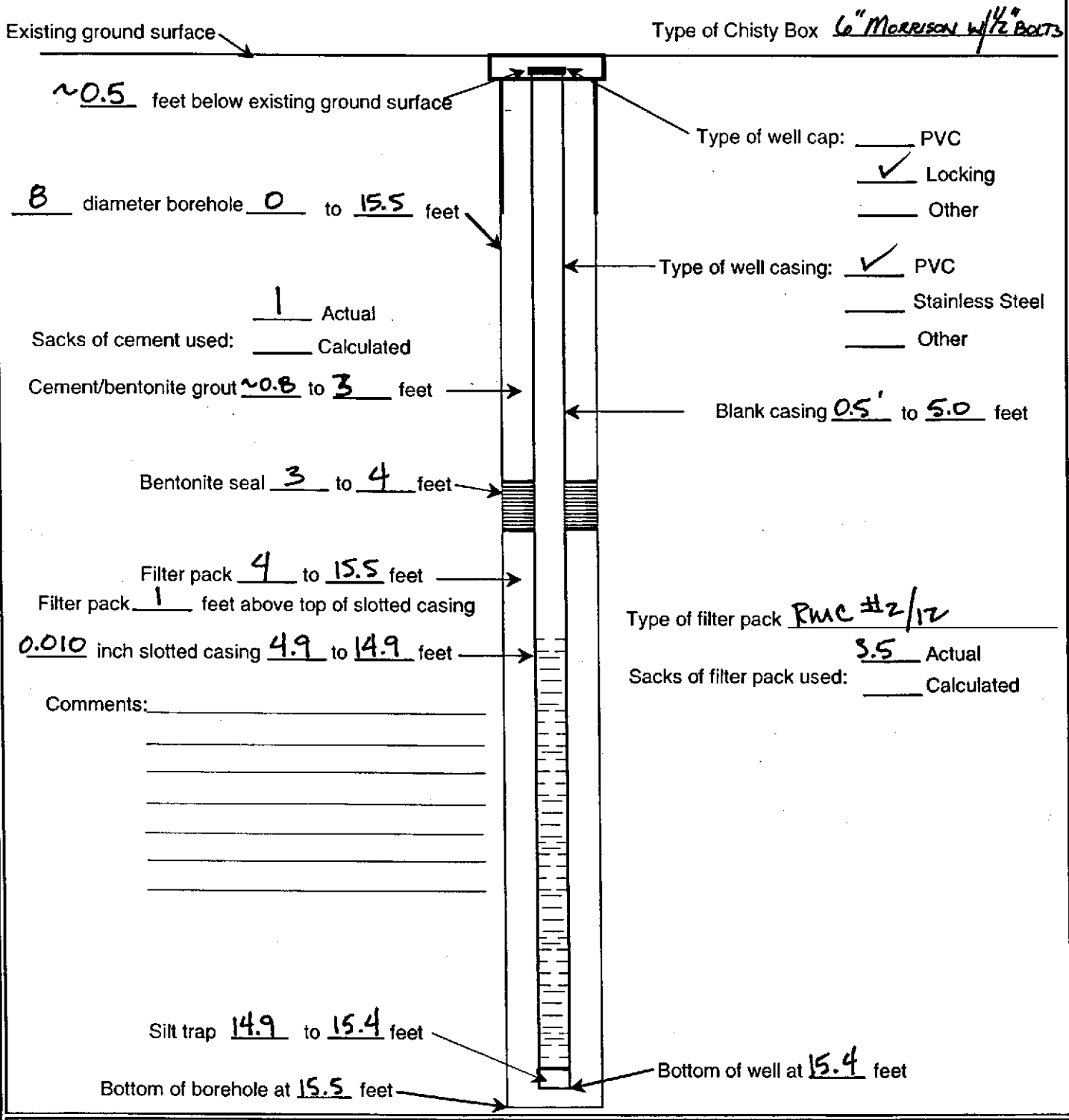
PROJECT NO. 00-152.15

LOCATION 2277 7TH STREET BORING DEPTH 15.5' **BORING NO. PZ-A**

SURFACE ELEVATION _____ DATE BEGAN 11 FEB 2002 LOGGED BY J. ANDERSON

DRILLING METHOD 8" HOLLOW STEM AUGER DATE FINISHED 11 FEB 2002

BELOW GROUND COMPLETION



ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

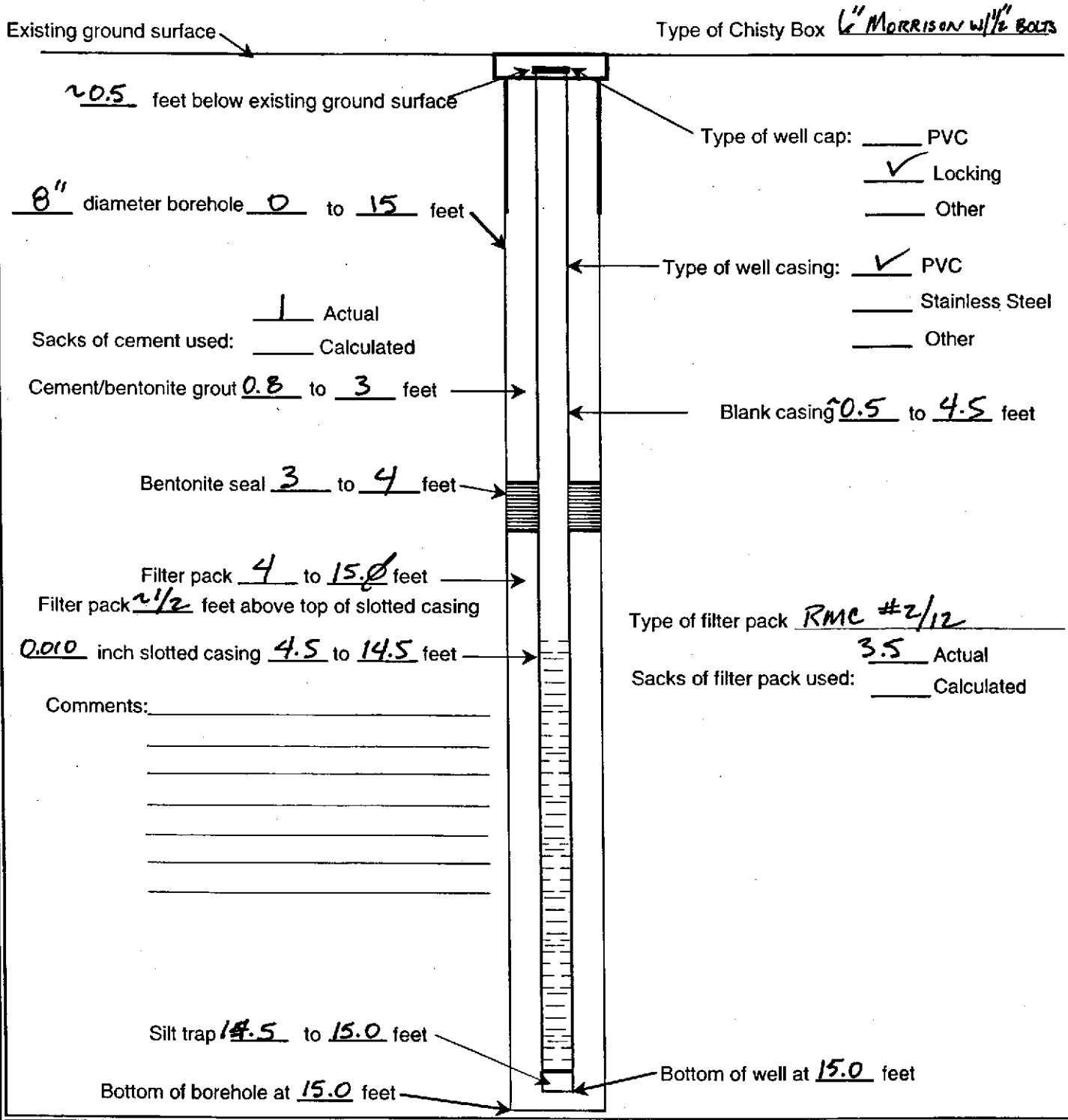
PROJECT NO. 00-152.15

LOCATION 2277 7TH STREET BORING DEPTH 15' **BORING NO. PZ-B**

SURFACE ELEVATION _____ DATE BEGAN 0725 12 FEB 2002 LOGGED BY J. ANDERSON

DRILLING METHOD 8" Hollow Stem Auger DATE FINISHED 0910 12 FEB 2002

BELOW GROUND COMPLETION



ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

PROJECT NO. 00-152.15

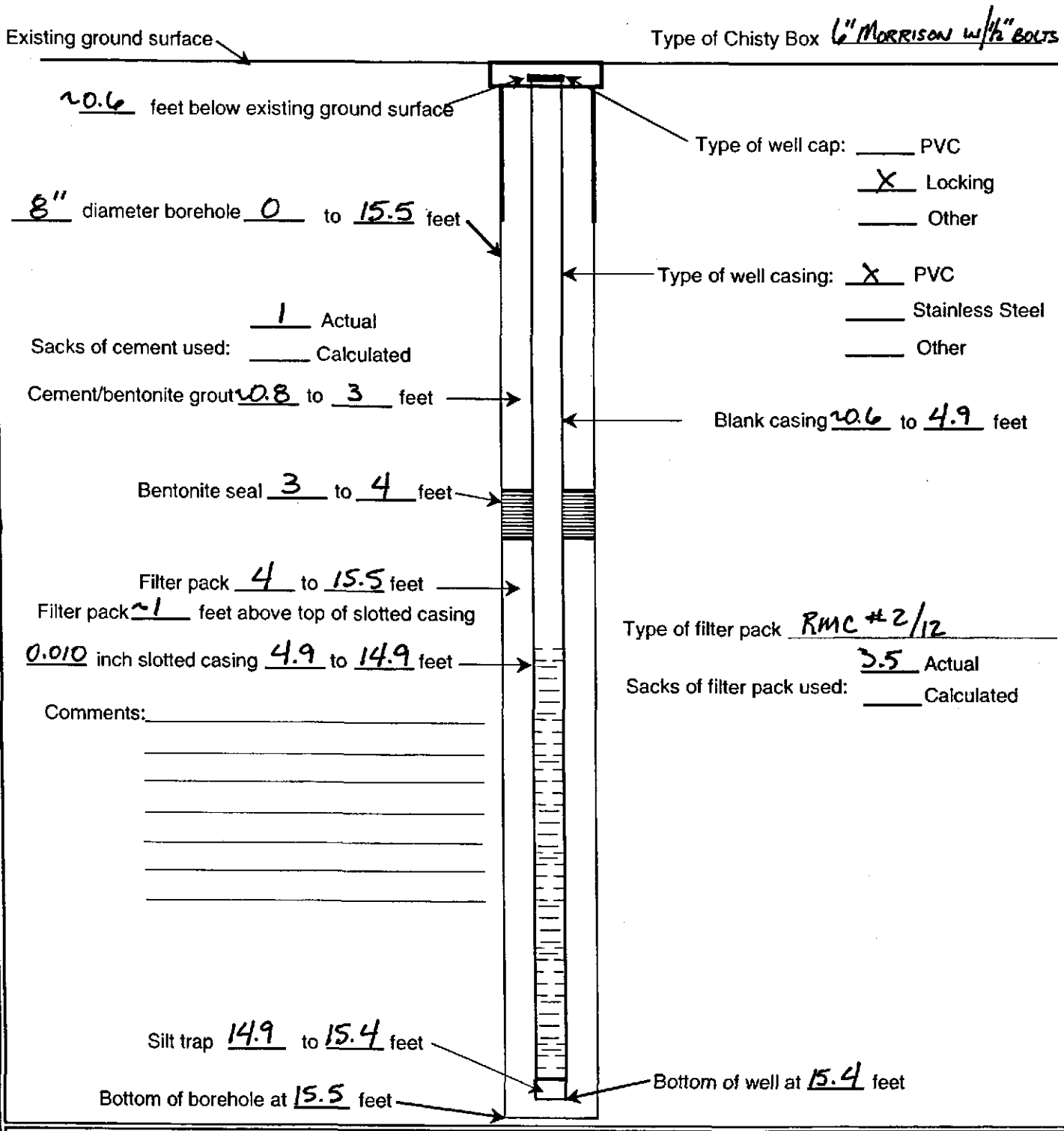
LOCATION 2225 7TH STREET BORING DEPTH 15.5' **BORING NO. PZ-C**

SURFACE ELEVATION _____ DATE BEGAN 0730 11FEB2002

DRILLING METHOD 8" HOLLOW STEM AUGER DATE FINISHED ~~0900~~ 0840 11 FEB 2002 LOGGED BY J. ANDERSON

gwa

BELOW GROUND COMPLETION



ITSI **Innovative Technical Solutions, Inc.**

PROJECT PORT OF OAKLAND

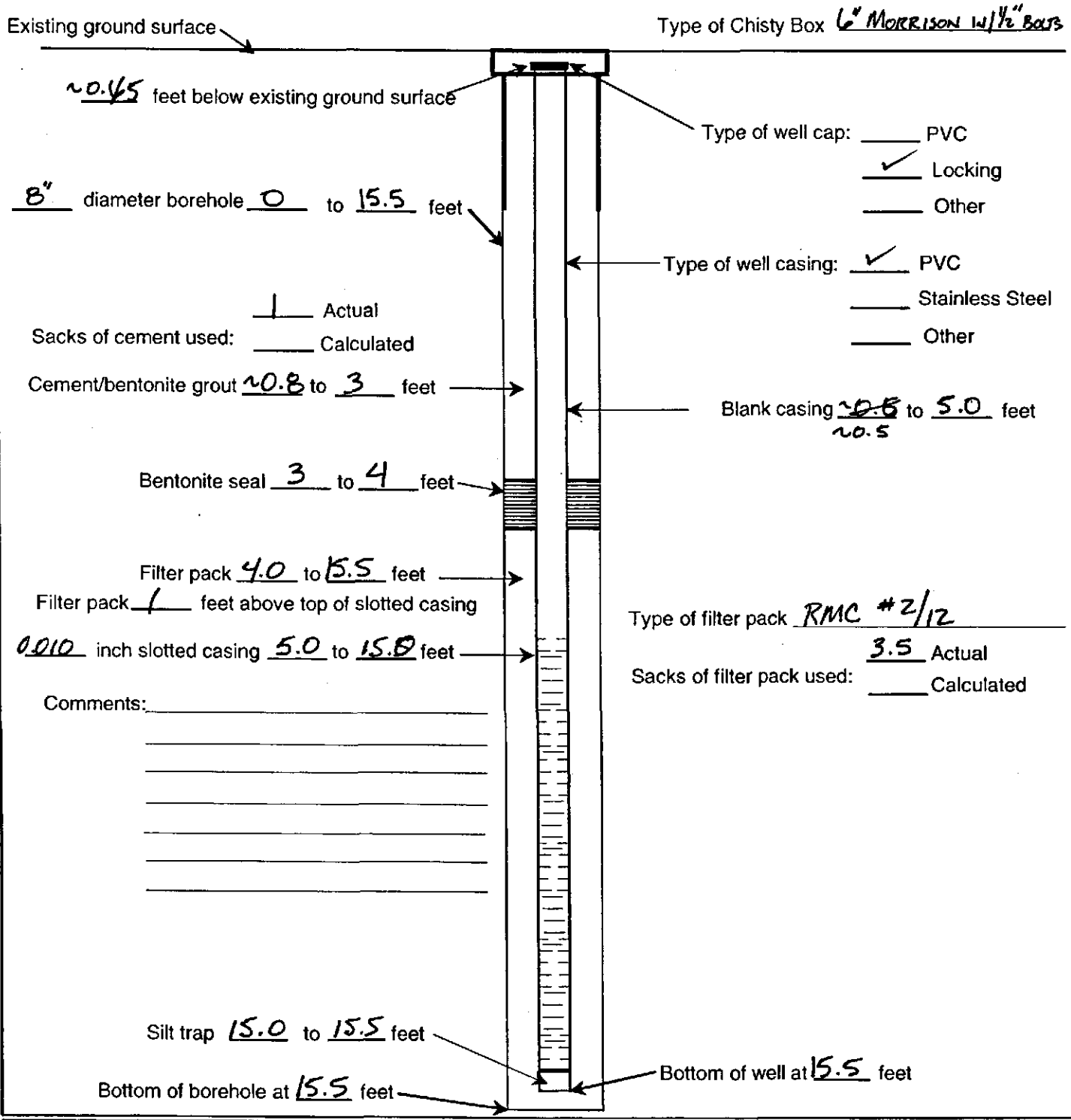
PROJECT NO. 00-152.15

LOCATION 2225 7TH STREET BORING DEPTH 15.5' **BORING NO.** PZ-D

SURFACE ELEVATION _____ DATE BEGAN 0845 11FEB2002 LOGGED BY R. LEONG

DRILLING METHOD 8" HOLLOW STEM AUGER DATE FINISHED 1015 11FEB2002

BELOW GROUND COMPLETION



Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

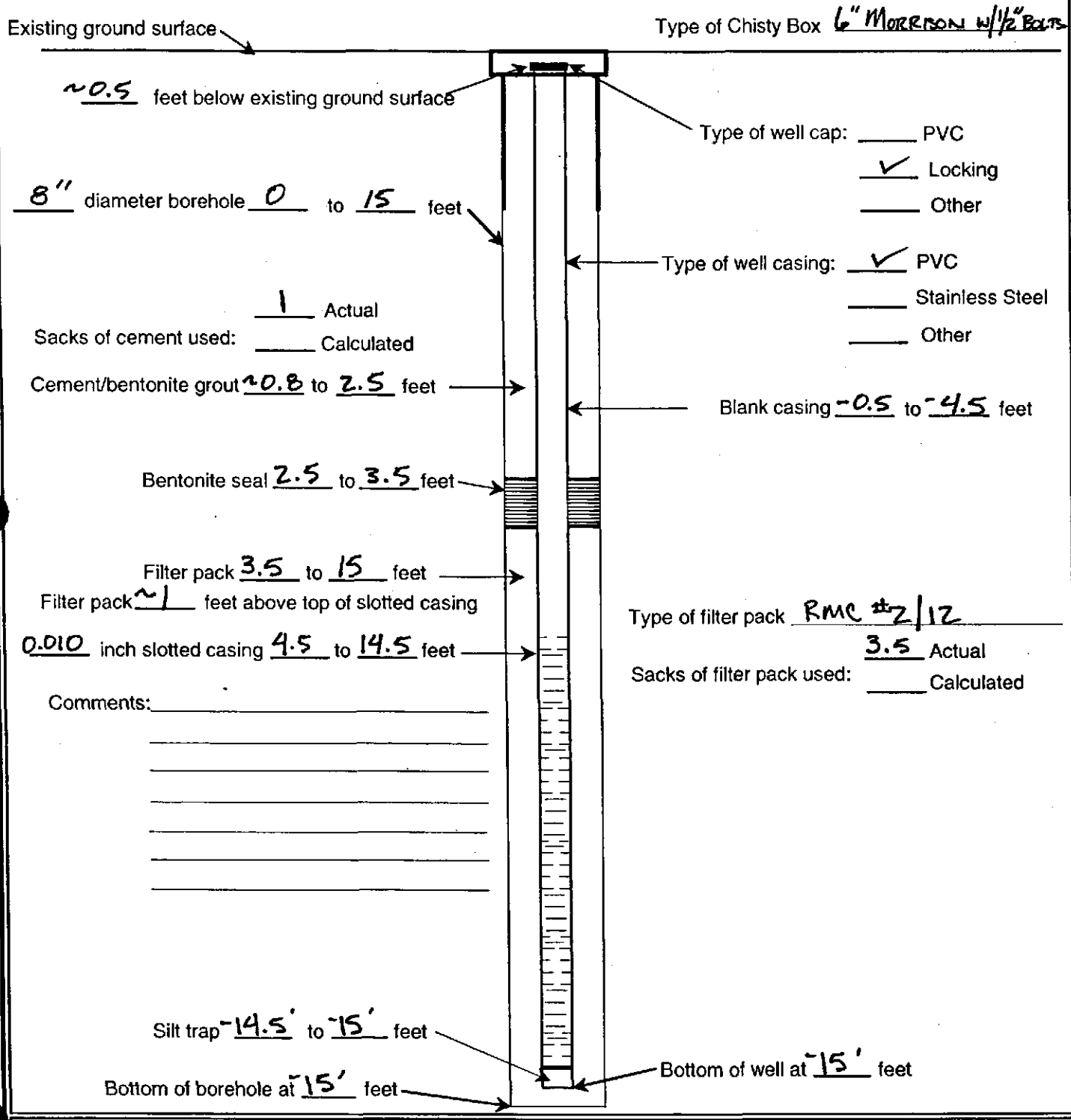
PROJECT NO. 00-152.15

LOCATION 2225 7TH STREET BORING DEPTH 15' **BORING NO.** PZ-E

SURFACE ELEVATION _____ DATE BEGAN 1230/13 FEB 2002 LOGGED BY J. ANDERSON

DRILLING METHOD 8" HOLLOW STEM AUGER DATE FINISHED 13 FEB 2002

BELOW GROUND COMPLETION



ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

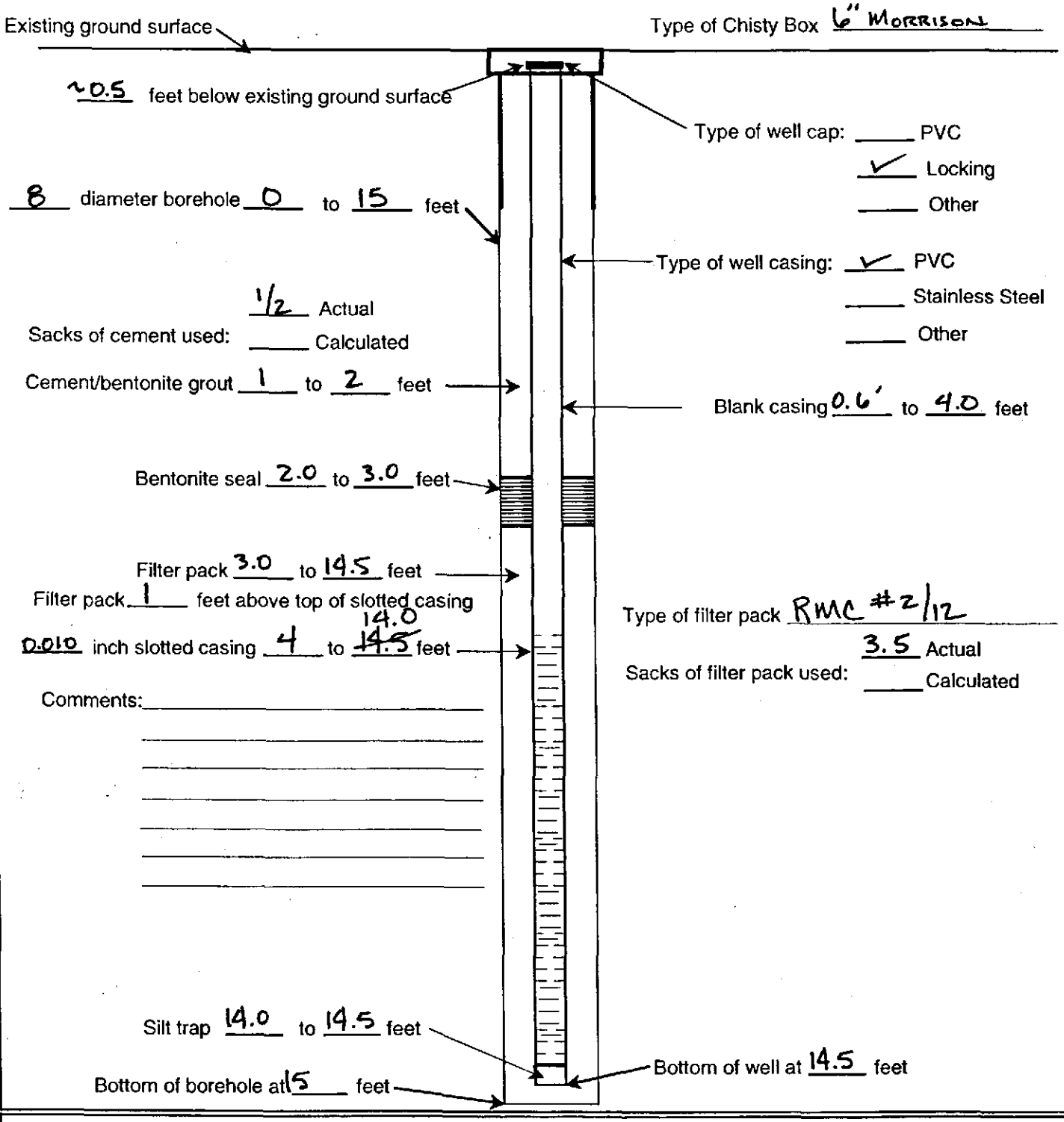
PROJECT NO. 00-152.15

LOCATION 2277 7TH STREET | BORING DEPTH 15' | **BORING NO. PZ-F**

SURFACE ELEVATION _____ | DATE BEGAN 11 FEB 2002 | LOGGED BY J. ANDERSON

DRILLING METHOD 8" HOLLOW STEM AUGER | DATE FINISHED 11 FEB 2002

BELOW GROUND COMPLETION



Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

PROJECT NO. 00-152.15

ITSI Innovative Technical Solutions, Inc.

PIEZOMETER DEVELOPMENT AND SAMPLING FORM

Project Name: PORT OF OAKLAND Project No.: 00-152.15

Well No.: PZ-A Tested By: J. ANDERSON Date: 19 FEB 2002

Measuring Point Description: TOP OF CASING

Total Well Depth (ft.): 15.4 / N.T. (BELOW GROUND SURFACE)

Water Level Measurement Method: WATER LEVEL METER

Sample Method: DISPOSABLE BAILER

Development Method(s): SURGE / BAIL

Time Sampled: 1100

Time Start Develop: 0835

Sample Depth (ft): 8 - 11'

Time End Develop: 0950

Field Filtering: N.A.

Initial/Static Water Level (ft.): 7.41'

Field Preservation: HCl / 4°C

Final Water Level (ft.): 13.1' ↑ RISING

Comments:

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2	4	6	=	Casing Volume (gal)
	15.4	-	7.41	=	7.99	x	0.16	0.64	1.44	=	12.78

Time	0905	0909	0911	0914	0917	0937	0945	0948		
Depth to water	7.41'			12.35'				13.1'		
Volume purged (gals)	1/2	~~2.5~~ 2	~~3.5~~ 1	1	1/2	1	1/2	1		
Σ volume purged (gals)	1/2	2.5	3.5	4.5	5.0	6.0	6.5	7.5		
Σ casing volumes	0.4	1.96	2.74	3.52	3.91	4.69	5.09	5.89		
Purge rate (gpm)	~1/2	~.6	~.6	.5	~.4	~.2	~.15	~.17		
Temperature (F/C°)	16.1	16.9	17.2	17.4	17.2	17.7	17.5	17.5		
pH	7.71	7.69	7.74	7.80	7.91	7.90	7.90	7.84		
Specific conductivity (µmhos/cm)	1.95	1.89	1.92	1.85	1.81	1.74	1.73	1.83		
Dissolved oxygen (mg/L)	4.13	2.78	2.24	0.38	2.16	0.94	3.66	1.94		
Turbidity or Color	DARK GRAY/ BROWN	→	→	→	→	→	→	→		
Odor?										
De-watered?				STARTING TO						

Innovative Technical Solutions, Inc.

PIEZOMETER DEVELOPMENT AND SAMPLING FORM

Project Name: 1 2277 7TH STREET Project No.: 00-152.15

Well No.: PZ-B Tested By: J. ANDERSON Date: 19 FEB 2002

Measuring Point Description:	TOP OF CASING	Total Well Depth (ft.): (BELOW GROUND SURFACE)	15.2 / 15.2 ← AFTER DEVELOPMENT
Water Level Measurement Method:	WATER LEVEL METER	Sample Method:	DISPOSABLE BAILER
Development Method(s):	SURGE/PURGE/BAIL	Time Sampled:	0900
Time Start Develop:	0800 (SURGE 0740)	Sample Depth (ft):	~9'-12'
Time End Develop:	0820	Field Filtering:	N.A.
Initial/Static Water Level (ft.):	9.23'	Field Preservation:	HCl / 4°C
Final Water Level (ft.):	9.09'	Comments:	

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2	4	6	=	Casing Volume (gal)
	15.2 ~~14.9~~ gwa		9.23		~~5.67~~ 5.97 gwa		0.16	0.64	1.44		9.55 ~~9.07~~ gwa

Time	0804										
Depth to water	9.23'						9.09'				
Volume purged (gals)	1/2	1 1/2	1.5	3.0	2.5		1.5				
Σ volume purged (gals)	1/2	2	3.5	6.5	8.5		10				
Σ casing volumes	1/2	~2	~3.5	~6.5	~8.5		>10				
Purge rate (gpm)											
Temperature (F°/C°)	16.2	16.9	16.7	17.1	16.9		16.9				
pH	7.29	7.38	7.40	7.49	7.50		7.51				
Specific conductivity (µmhos/cm)	13.2	13.4	13.1	14.0	14.3		14.6				
Dissolved oxygen (mg/L)	2.46	3.87	4.05	4.69	5.21		3.82				
Turbidity or Color	DARK GRAY	>1000 →	→	→			→				
Odor?	DIESEL ODOR										
De-watered?							T.D. 15.2'				

Innovative Technical Solutions, Inc.

PIEZOMETER DEVELOPMENT AND SAMPLING FORM

Project Name: ~~Jwc~~ PZ-C 2225 7TH STREET Project No.: CO-152.15

Well No.: PZ-C Tested By: J. ANDERSON Date: 19 FEB 2002

Measuring Point Description:	TOP OF CASING	Total Well Depth (ft.):	15.5' / 15.5'
Water Level Measurement Method:	WATER LEVEL METER	Sample Method:	DISPOSABLE BAILER
Development Method(s):	SURGE/BAIL	Time Sampled:	1400
Time Start Develop:	1245 SURGING	Sample Depth (ft):	6.7' - 9.7'
Time End Develop:	1330 PURGING	Field Filtering:	N.A.
Initial/Static Water Level (ft.):	6.21'	Field Preservation:	HCl / 4°C
Final Water Level (ft.):	6.67'	Comments:	DUP-A TAKEN HERE @ 1440 FICTIOUS TIME →

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2	4	6	=	Casing Volume (gal)
	15.5		6.21		9.29		0.16	0.64	1.44		14.86

Time	1311 ~~1214~~	1314 1214	1317	1319	1320	1322	1324	1325	1327	
Depth to water	6.21'								~~6.71~~ 6.67	
Volume purged (gals)	1	2.5	2.5	2	1.5	1.5	2	1.5	1.5	
Σ volume purged (gals)	1	3.5	5	7	8.5	10	12	13.5	15+	
Σ casing volumes	0.67	2.36	3.36	4.71	5.72	6.73	8.08	9.08	~~10.0~~ 10.1	
Purge rate (gpm)	~1	~1.2	~.8	~.9	~.9	~.9	~.9	~1.0	~.9	
Temperature (F°/C°)	19.5	14.8	14.8	14.9	14.7	14.7	14.8	15.1	14.9	
pH	7.25	7.20	7.16	7.10	7.09	—	7.06	7.06	7.06	
Specific conductivity (µmhos/cm)	4.79	4.68	4.54	4.38	4.16	—	4.09	4.35	3.94	
Dissolved oxygen (mg/L)	1.19	2.05	10.77↓	3.60↓	4.81↓	—	5.03↓	5.96↓	5.59↓	
Turbidity or Color	DARK OLIVE >1000	→							→	
Odor?	DIESEL SHEEN ON WATER								→	
De-watered?										

Innovative Technical Solutions, Inc.

PIEZOMETER DEVELOPMENT AND SAMPLING FORM

Project Name: 2225 7TH STREET Project No.: 00-152.15

Well No.: PZ-D Tested By: J. ANDERSON Date: 19 FEB 2002

Measuring Point Description:	TOP OF CASING	Total Well Depth (ft.):	15.5'/15.6'
Water Level Measurement Method:	WATER LEVEL METER	Sample Method:	DISPOSABLE BAILER
Development Method(s):	SURGE & BAIL	Time Sampled:	1130
Time Start Develop:	1005 (SURGING)	Sample Depth (ft):	7'-10'
Time End Develop:	1043	Field Filtering:	N.A.
Initial/Static Water Level (ft.):	5.95'	Field Preservation:	HCl / 4°C
Final Water Level (ft.):	7.02'	Comments:	

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		
	15.5		5.95		9.55		0.16	0.64	1.44		15.28

Time	1027 1022	1029	1032	1034	1036	1038	1040			
Depth to water	5.95'						7.02			
Volume purged (gals)	1	3	3	2	2	2	3			
Σ volume purged (gals)	1	4	7	9	11	13	16			
Σ casing volumes	0.65	2.62	4.58	5.89	7.20	8.51	~~10.5~~ 9wa.	10.5		
Purge rate (gpm)	~1	~2	~1.4	~1.3	~1.2	~1.2	~1.2			
Temperature (C°)	15.3	15.8	15.2	15.0	15.8	15.5	15.0			
pH	6.84	6.95	6.89	6.82	7.00	6.97	6.92			
Specific conductivity (µmhos/cm)	4.09	4.29	3.26	2.89	4.05	3.69	2.75			
Dissolved oxygen (mg/L)	3.02	3.42	3.51	4.35	HLA	2.56	4.48			
Turbidity or Color	DARK GREEN >1000	→	→	→	→	→	→			
Odor?	DIESEL SHEEN ON WATER	→	→	→	→	→	→			
De-watered?										

Innovative Technical Solutions, Inc.

PIEZOMETER DEVELOPMENT AND SAMPLING FORM

Project Name: ~~PZ-1~~ Project No.: 00-152.15

Well No.: PZ-E Tested By: J. ANDERSON Date: 19 FEB 2002

Measuring Point Description:	TOP OF CASING	Total Well Depth (ft.):	15.3' / 15.3' AFTER DEVELOPMENT (BELOW GROUND SURFACE)
Water Level Measurement Method:	WATER LEVEL METER	Sample Method:	DISPOSABLE BAILER
Development Method(s):	SURGE / BAIL	Time Sampled:	1515
Time Start Develop:	1355 SURGING	Sample Depth (ft):	8-11'
Time End Develop:	1500	Field Filtering:	N.A.
Initial/Static Water Level (ft.):	6.02	Field Preservation:	HCl / 4°C
Final Water Level (ft.):	7.90 @ 1515	Comments:	

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2	4	6	=	Casing Volume (gal)
	15.3		6.02		9.28		0.16	0.64	1.44		14.85

Time	1420	1423	1425	1427	1430	1438	1441	1448	1450	1457
Depth to water	6.02									7.90
Volume purged (gals)	1	2	2	2	1	1	2	2	1	1
Σ volume purged (gals)	1	3	5	7	8	9	11	13	14	15
Σ casing volumes	.67	2.02	3.37	4.71	5.39	6.06	7.41	8.75	9.43	10.1
Purge rate (gpm)	~1	~1	~1	~1	~.8	~.5	~.5	~.5	~.5	~.4
Temperature (F°/C°)	15.0	15.5	15.8	16.3	16.3	15.8	16.0	15.9	16.0	15.8
pH	7.12	6.97	6.95	7.04	7.12	7.07	7.09	7.05	7.00	6.97
Specific conductivity (µmhos/cm)	4.52	5.09	5.04	5.16	5.05	4.77	4.77	4.60	4.66	4.57
Dissolved oxygen (mg/L)	1.17	1.27	0.83	2.69	4.41	6.28	5.77	7.26	10.38	7.33
Turbidity or Color	DARK OLIVE >1000	→								→
Odor?	DIESEL SHEEN	ON WATER	→							→
De-watered?					LET RECHARGE					

ITSI Innovative Technical Solutions, Inc.

PIEZOMETER DEVELOPMENT AND SAMPLING FORM

Project Name: 2277 7TH STREET Project No.: 00-152-15

Well No.: PZ-F Tested By: J. ANDERSON Date: 19 FEB 2002

Measuring Point Description: TOP OF CASING

Total Well Depth (ft.): 14.7 / 14.74 AFTER DEVELOP ← BELOW GROUND SURFACE

Water Level Measurement Method: WATER LEVEL METER

Sample Method: DISPOSABLE BAILER

Development Method(s): SURGE / BAIL

Time Sampled: 1305

Time Start Develop: 1115

Sample Depth (ft): ~8-11'

Time End Develop: 1215

Field Filtering: N.A.

Initial/Static Water Level (ft.): 7.72

Field Preservation: HCl / 4°C

Final Water Level (ft.): NOT MEASURED (PRODUCT PRESENT)

Comments: MINOR FLOATING PRODUCT

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		
	14.7'		7.72		6.98		0.16	0.64	1.44		11.17

Time	1146	1149	1151	1155	1159	1202	1205	1208	1210	1213
Depth to water	7.72'									
Volume purged (gals)	1	3	.5	1.5	1.5	1	.5	1	1	1
Σ volume purged (gals)	1	4	45	6	7.5	8.5	9	10	11	12
Σ casing volumes	.89	3.58	4.03	5.37	6.71	7.61	8.06	8.95	9.85	10.74
Purge rate (gpm)	~.9	~1.3	~.9	~0.7	~0.6	~0.5	~0.5	~0.5	~0.5	~0.4
Temperature (F°/C°)	15.0	15.9	16.1	16.2	16.2	16.2	16.1	16.3	16.4	16.1
pH	7.53	7.47	7.47	7.51	7.38	7.38	7.31	7.39	7.36	7.31
Specific conductivity (µmhos/cm)	2.47	2.43	2.20	2.05	1.91	1.13	1.85	1.90	1.87	1.81
Dissolved oxygen (mg/L)	2.69	3.08	1.95	3.91	3.02	5.63	3.42	4.07 ↓	5.65 ↓	3.26 ↓
Turbidity or Color	>1000 DARK OLIVE →	→	→	→	→	→	→	→	→	→
Odor?	DIESEL ODOR PRODUCT ON SAMPLE →	→	→	→	→	→	→	→	→	→
De-watered?			LOSING WATER							

Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Chain-Of-Custody

Project Name and Number: PORT OF OAKLAND/00-152.15
Project Manager: RACHEL HESS
Site Location: 2225 & 2277 7TH STREET

Laboratory Name: STL CHROMALAB
Address: 1220 QUARRY LANE
PLEASANTON, CA
Contact Name: SURINDER SIDHU
Phone: (925) 484-1919

Date: 19 FEB 2002
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPH GAS 8015	BTEX + MTBE 8020	TPH DIESEL/MOTOR OIL W/SILICA GEL CLEANUP	Special Instructions/Comments
						Preservative: HCl / 4°C		4°C	
						Container Type: VOA	AMBER LITER		
PZ-B	N.A.	19FEB2002	0900	5	H_2O	3	2		
PZ-A	N.A.		1100	5	H_2O	3	2		
PZ-D	N.A.		1130	5	H_2O	3	2		
PZ-F	N.A.		1305	5	H_2O	3	2		
PZ-C	N.A.		1400	5	H_2O	3	2		
DUP-A	N.A.		1440	5	H_2O	3	2		
PZ-E	N.A.		1515	5	H_2O	3	2		
TRIP BLANK	N.A.	19FEB2002	1530	3	H_2O	3			NOT USED

Sampled By: JAMES ANDERSON
Signature:
Special Instructions: EVERY SAMPLE EXCEPT PZ-A SMELLED OF PRODUCT AND A HYDROCARBON SHEEN WAS NOTICED.
Send Results to: RACHEL HESS
(w/fax #) (925) 256-8998
Turnaround Time: 5 DAYS

Sampler: JAMES ANDERSON
Courier/Airbill No.: SELF DELIVERED

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
/ITSI	19FEB2002	1825	Denise Harrington	2/19/02	1825

Original – Laboratory Yellow – Field/Office

Chain-Of-Custody

Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Project Name and Number: PORT OF OAKLAND / 00.152-15
Project Manager: RACHEL HESS
Site Location: 2225 7th Street, Oakland, CA

Laboratory Name: STL CHRONALAB
Address: 1220 QUARRY LANE, PLEASANTON, CA
Contact Name: SURINDER SIDHU
Phone: (925) 484-1919

Date: 02/13/02
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPHg by EPA 8015	Analysis: TPHd & motor oil w/ silica gel	Analysis: BTEX w/ MTBE by EPA 8020	Preservative	Container Type	Special Instructions/Comments
PZ-E	1.0-1.5'	02/13/02	1300	1	Soil	X	X	X	None	Stainless Steel sleeves	
PZ-E	3.0-3.5'	02/13/02	1305	1	"	X	X	X			
PZ-E	5.5-6.0'	02/13/02	1250	1	"	X	X	X			

Sampled By: ROGERIO LEONG
Signature:
Special Instructions: REFER TO TS012 Port of Oakland - Jeff Rubin for billing
Send Results to: Rachel Hess @ JTSI
(w/fax #) Fax # (925) 256-8998
Turnaround Time: 5 DAYS

Sampler: ROGERIO LEONG / JIM ANDERSON

Relinquished By/Affiliation:	Date:	Time:
	02/13/02	17:15

Courier/Airbill No.:

Received By/Affiliation:	Date:	Time:
M Harrington	2/13/02	1715

Original – Laboratory Yellow – Field/Office

Chain-Of-Custody

Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

15

Project Name and Number: PORT OF OAKLAND / 00-152.01
Project Manager: RACHEL HESS
Site Location: 2277 SEVENTH STREET, OAKLAND

Laboratory Name: STL CHRONALAB
Address: 1220 QUARRY LANE
PLEASANTON, CA
Contact Name: SURINDER SIDHU
Phone: (925) 484-1919

Date: 02/12/2002
Page: 1 of 2

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPHG by EPA 8015 w/silica gel	Analysis: TPHd & Motor oil	Analysis: BTEX w/MTBE by EPA 8020	Preservative: NONE	Container Type: STAINLESS STEEL SLEEVES	Special Instructions/Comments
PZ-C	1.0'-1.5'	02/12/02	0940	1	Soil	X	X	X			
PZ-C	3.0'-3.5'	02/12/02	0945	1	"	X	X	X			
PZ-C	5.5'-6.0'	02/11/02	0800	1	"	X	X	X			
PZ-D	1.0'-1.5'	02/12/02	1000	1	"	X	X	X			
PZ-D	3.0'-3.5'	02/12/02	1010	1	"	X	X	X			
PZ-D	5.0'-5.5'	02/11/02	0910	1	"	X	X	X			
PZ-F	1.0'-1.5'	02/12/02	1025	1	"	X	X	X			
PZ-F	3.0'-3.5'	02/12/02	1030	1	"	X	X	X			
PZ-F	5.0'-5.5'	02/11/02	1115	1	"	X	X	X			
PZ-A	1.0'-1.5'	02/11/02	1350	1	"	X	X	X			
PZ-A	3.0'-3.5'	02/11/02	1355	1	"	X	X	X			

Sampled By: ROGERIO LEONG
Signature:
Special Instructions: REFER TO TS012 PORT OF OAKLAND, JEFF RUBIN FOR BILLING
Send Results to: (w/fax #) REPORT TO RACHEL HESS @ ITSI FAX # (925) 256-8998
Turnaround Time: 5 DAYS

Sampler: ROGERIO LEONG / JIM ANDERSON

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
	02/12/02	13:05		02/12/02	13:05
	02/12/02	1405			
				2/12/02	13:05

Courier/Airbill No.:

Original – Laboratory Yellow – Field/Office

Chain-Of-Custody

Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

15

Project Name and Number: PORT OF OAKLAND / 00-152 OT
Project Manager: RACHEL HESS
Site Location: 2277 SEVENTH STREET, OAKLAND

Laboratory Name: STL CHROMALAB
Address: 1220 QUARRY LANE
PLEASANTON, CA
Contact Name: SUKINDER SIDHU
Phone: (925) 484-1919

Date: 02/12/2002
Page: 2 of 2

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPHg by EPA 8015	Analysis: TPHd w/ silica gel	Analysis: oil w/ silica gel	Analysis: BTEX w/ MTBE by EPA 8020	Special Instructions/Comments
PZ-A	5.0-5.5'	02/11/02	1405	1	soil	X	X	X		
PZ-B	1.0-1.5'	02/12/02	0740	1	"	X	X	X		
PZ-B	3.0-3.5'	02/12/02	0745	1	"	X	X	X		
PZ-B	7.0-7.5'	02/12/02	0800	1	"	X	X	X		

Preservative: NONE
Container Type: STAINLESS STEEL SLEEVES

Sampled By: ROGERIO LEONG
Signature:
Special Instructions: REFER TO TS012 PORT OF OAKLAND, JEFF RUBIN FOR BILLING.

Send Results to: (w/fax #) REPORT TO RACHEL HESS @ ITST FAX # (925) 256-8998

Turnaround Time: 5 DAYS

Sampler: ROGERIO LEONG / JIM ANDERSON

Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
	02/12/02	13:10			
	2/12/02	1410			
			N. Khammanivong	2/12/02	13:10

Original – Laboratory Yellow – Field/Office

202033 CM 2/6/02 02

Chain-Of-Custody

Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Project Name and Number: PORT OF OAKLAND / 00-152.15
Project Manager: RACHEL HESS
Site Location: PORT OF OAKLAND 2277 & 2225 7TH ST.

Laboratory Name: FRIEDMAN & BRUYA, INC.
Address: 3012 16TH AVE. WEST Contact Name: CHARLENE MORROW
SEATTLE, WA. 98119 Phone: (206) 285-8282

Date: 28 JANUARY 2002
Page: 1 of 1

Sample I.D.		Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: BTEX - PAH's	DIESEL, MOTOR OIL ASTM D-2887 STD. FUEL SCAN	PIANO	8260 VOCs w/ MTBE	6010 METALS Ca, Cu, Pb, Ni & Zn	Preservative: NONE	Container Type: VOA	Special Instructions/Comments
CPT-20	01	~6'	28 JAN 02	1645	2	PROD.	✓	✓	✓	✓	✓			* RUN METALS ONLY IF SUFFICIENT MATRIX AVAIL. *
CPT-14	02	~6'	29 JAN 02	1605	1	PROD.	✓	✓	✓	✓	✓			
CPT-19	03	~6'	30 JAN 02	1615	3	PROD.	✓	✓	✓	✓	✓			
GWRS-1	04	~1'	31 JAN 02	1415	3	PROD.	✓	✓	✓	✓	✓			
CPT-30	05	~6'	1 FEB 02	1205	1	PROD.	✓	✓	✓	✓	✓			*

Sampled By: JAMES ANDERSON
Signature:
Special Instructions: * RUN METALS ONLY IF SUFFICIENT MATRIX AVAILABLE
Send Results to: RACHEL HESS (w/fax #) (925) 256-8998
Turnaround Time: STANDARD

Sampler: JAMES ANDERSON

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
ITSI	5 Feb 02	1030	Eric Young FedEx	2/6/02	10:10

Courier/Airbill No.: 8318 2534 6213

Original – Laboratory Yellow – Field/Office

FROM : FAX NO. : 2062835044 Feb. 22 2002 10:51AM P3

— 202120

KJ 2.19.02 D02

Chain-Of-Custody

ITSI Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Project Name and Number: PORT OF OAKLAND / 00-152.15
Project Manager: RACHEL HESS
Site Location: 2225 & 2277 7TH STREET

Laboratory Name: FRIEDMAN & BRUYA, INC.
Address: 3012 16TH AVE. WEST Contact Name:
SEATTLE, WA. 98119 Phone: (206) 285-8282

Date: 8 FEB 2002
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: 8270 - PAH's, DESG, Motor Oil, ASTM D-2887, STD. Fuel Scan, 8260 VOC's + MTBE, PIANO, 6010 METALS: Cr, Cu, Pb, Ni & Zn	Preservative	Container Type	Special Instructions/Comments
MW-3	~6.5'	8 FEB 2002	1030	4	Prod.	✓ ✓ ✓ ✓ ✓	None None None None None	VOA VOA VOA VOA VOA	
MW-1	~6.5'	8 FEB 2002	1115	4	Prod.	✓ ✓ ✓ ✓ ✓	None None None None None	VOA VOA VOA VOA VOA	
PE-F	~6.0'	15 FEB 2002	1020	1	Prod.	✓ ✓ ✓ ✓ ✓	None None None None None	VOA VOA VOA VOA VOA	

Sampled By: JAMES ANDERSON
Signature:
Special Instructions:

Send Results to: RACHEL HESS (w/fax #)
EMAIL

Sampler:

Relinquished By/Affiliation:	Date:	Time:
/ITSI	8 FEB 2002	1600
/ITSI	15 FEB 2002	1500
/ITSI	18 FEB 2002	1550
	18 FEB 2002	1600

Courier/Airbill No.:

Received By/Affiliation:	Date:	Time:
/ITSI	13 Feb 2002	1602
/ITSI	15 Feb 2002	1505
/ITSI	18 FEB 2002	1550
	2/18	9A

Chain-Of-Custody

Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Project Name and Number: PORT OF OAKLAND/00-152.15
Project Manager: RACHEL HESS
Site Location: 2225 & 2277 7TH STREET

Laboratory Name: COOPER TESTING LABORATORY
Address: 1360-D INDUSTRIAL AVE. Contact Name:
PETALUMA, CA. Phone: (707) 765-2589

Date: 11 FEB 2002
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: SIEVE AND HYDROMETER	Analysis: ATTERBERG LIMITS	Analysis: SIEVE AND HYDROMETER	Analysis: ATTERBERG LIMITS	Special Instructions/Comments
						Preservative: NONE	NONE	NONE	NONE	
						Container Type: S.S.	S.S.	8oz. GLASS	8oz. GLASS	
PZ-D	7'	11FEB2002	0915	1	SOIL	✓	✓			
PZ-A	6'	11FEB2002	1410	1	SOIL			✓	✓	
PZ-A	12.5'	11FEB2002	1420	1	SOIL			✓	✓	
PZ-B	5.5'	12FEB2002	0755	1	SOIL			✓	✓	
PZ-E	11.5'	13FEB2002	1300	1	SOIL			✓	✓	

NOT USED

Sampled By: JAMES ANDERSON
Signature:
Special Instructions:

Send Results to: RACHEL HESS
(w/fax #) (925) 256-8998

Turnaround Time: STANDARD TURNAROUND

Sampler: JAMES ANDERSON

Relinquished By/Affiliation:	Date:	Time:
(ITSI)	20FEB2002	1045

Courier/Airbill No.: SELF DELIVERED

Received By/Affiliation:	Date:	Time:
(Cooper testing lab Petaluma)	2/20/02	10:45a

Original – Laboratory Yellow – Field/Office

ITSI Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, CA 94598
(925) 946-3100 (925) 256-8998 (fax)

Chain-Of-Custody

Project Name and Number: Port of Oakland / 00-157.15
Project Manager: Rachel Hess
Site Location: 2225 & 2277 7th St., Oakland

Laboratory Name: Friedman & Bruya, Inc.
Address: 3012 16th Ave. West
Seattle, WA 98119
Contact Name:
Phone: (206) 285-8282

Date: 3-26-02
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: 8270 - PAHs, Diesel, Motor Oil	ASTM D-2887	STM Fuel Scan	8260 VOCs + MTBE	PIANO	6010 Metals Ca, Cu, Pb, Ni, Zn	Organic Lead	Special Instructions/Comments
Preservative:						NA	NA	NA	NA	NA	NA	NA	
Container Type:						VOA	VOA	VOA	VOA	VOA	VOA	VOA	
MFC-18		3-26-02	1:45	3	Drum Water	X	X	X	X	X	X		Samples are a mixture of product & water
MFC-19		3-26-02	2:00	4	↓	X	X	X	X	X	X		
MW1-[C-401]		3-26-02	2:30	3	↓	X	X	X	X	X	X		

Sampled By: Tim Watchers
Signature: T. Watchers
Special Instructions:

Send Results to: Rachel Hess
(w/fax #) (925) 256-8998
Turnaround Time: 5 days

Sampler: Tim Watchers
Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
Tim Watchers / ITSI	4/1/02	1200			

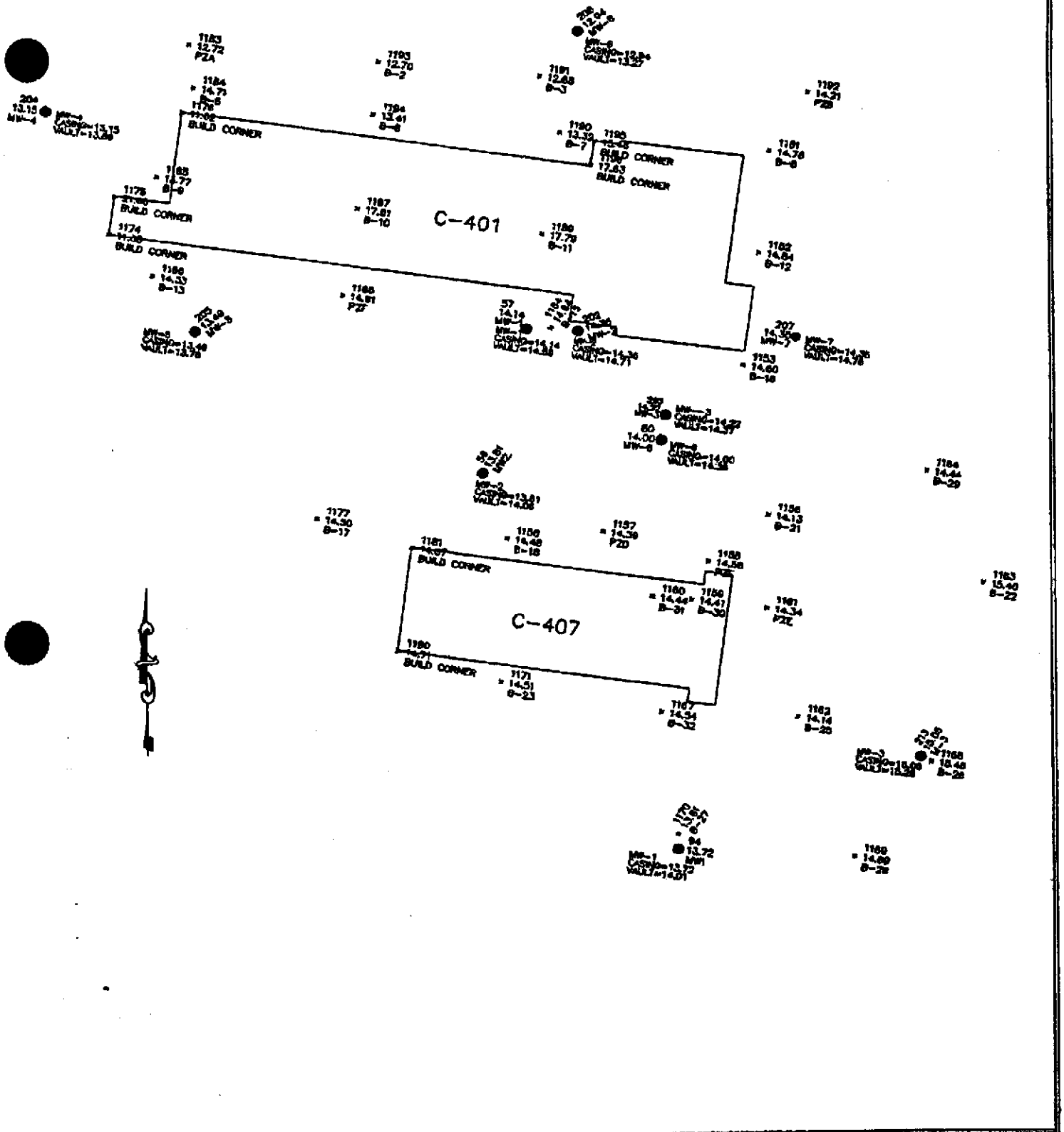
Original – Laborat... Yellow – Field/Office

Survey Locations for Borings, Peizometers, and Buildings C-401 and C-407
2225 and 2277 7th Street, Oakland, CA
February 2002

Point number	Northing	Easting	Elevation	PLS Description	ITSI Designation
1161	2120247.23	6038275.46	14.34	PZE (CPT20)	PZE (CPT20)
1152	2120521.16	6038271.54	14.84	B-12	CPT-12
1185	2120581.87	6037832.59	13.77	B-9	CPT-9
1174	2120537.87	6037797.18	11.38	BUILD CORNER	BUILD CORNER
1175	2120566.72	6037801.22	21.66	BUILD CORNER	BUILD CORNER
205	2120462.63	6037860.21	13.49	MW-5	MW-5
1166	2120505.86	6037829.05	14.33	B-13	CPT-13
94	2120062.48	6038209.74	13.72	MW1	MW1
1170	2120074.21	6038209.97	13.81	B-27	CPT-27
1154	2120464.39	6038119.76	14.64	B-15	CPT-15
1158	2120302.92	6038086.57	14.48	B-18	CPT-18
1189	2120537.01	6038113.69	17.79	B-11	CPT-11
1177	2120318.83	6037947.91	14.5	B-17	CPT-17
1180	2120216.52	6038005.77	14.71	BUILD CORNER	BUILD CORNER
1181	2120295.75	6038016.79	14.57	BUILD CORNER	BUILD CORNER
1165	2120490.25	6037967.32	14.61	PZF (CPT14)	PZF (CPT14)
1187	2120556.94	6037978.82	17.81	B-10	CPT-10
56	2120353.31	6038069.4	13.81	MW2.	MW2.
57	2120463.58	6038101.72	14.14	MW-1	MW-1
1156	2120319.46	6038277.06	14.13	B-21	CPT-21
1160	2120257.12	6038192.6	14.44	B-31	CPT-31
1171	2120193	6038081.27	14.51	B-23	CPT-23
1157	2120307.95	6038157.31	14.39	PZD (CPT19)	PZD (CPT19)
1167	2120169.1	6038198.41	14.54	B-32	CPT-32
1155	2120283.93	6038233.42	14.58	PZC (CPT 20)	PZC (CPT 20)
1159	2120254.7	6038220.9	14.41	B-30	CPT-30
203	2120397.18	6038203.13	14.22	MW-3	MW-3
60	2120377.81	6038199.99	14	MW-6	MW-6
202	2120461.77	6038139.73	14.36	MW-2	MW-2
1153	2120434.59	6038259.74	14.6	B-16	CPT-16
207	2120455.87	6038297.89	14.35	MW-7	MW-7
204	2120632.1	6037750.69	13.15	MW-4	MW-4
1183	2120683.28	6037857.47	12.72	PZA (CPT 1)	PZA (CPT 1)
1176	2120630.97	6037851.83	11.62	BUILD CORNER	BUILD CORNER
1184	2120650.12	6037860.29	14.71	B-5	CPT-5
208	2120692.32	6038140.98	12.94	MW-8	MW-8
1190	2120614.68	6038127.15	13.32	B-7	CPT-7
1193	2120669.54	6037994.62	12.7	B-2	CPT-2
1194	2120628.81	6037990.58	13.41	B-6	CPT-6
1191	2120657.92	6038112.74	12.68	B-3	CPT-3
1195	2120608.05	6038152.93	15.46	BUILD CORNER	BUILD CORNER
1196	2120589.28	6038150.07	17.63	BUILD CORNER	BUILD CORNER
1151	2120599.03	6038279.78	14.76	B-8	CPT-8
1192	2120643.97	6038307.91	14.21	PZB (CPT 4)	PZB (CPT 4)
1169	2120055.73	6038337.31	14.89	B-28	CPT-28
1162	2120164.45	6038297.04	14.14	B-25	CPT-25
213	2120132.8	6038386.28	15.05	M-3	M-3
1168	2120128.69	6038393.96	15.45	B-26	CPT-26

Survey Locations for Borings, Peizometers, and Buildings C-401 and C-407
2225 and 2277 7th Street, Oakland, CA
February 2002

Point number	Northing	Easting	Elevation	PLS Description	ITSI Designation
1163	2120265.54	6038433.85	15.4	B-22	CPT-22
1164	2120352.74	6038392.68	14.44	B-29	CPT-29
55	2120557.61	6037755.54	-72.92	CB.2X2.-3.0TO.FL	CB.2X2.-3.0TO.FL
120	2120672.51	6038176.98	-72.22	NAIL.WASH	NAIL.WASH
1101	2120491.45	6037703.8	14.09	NAIL W	NAIL W
1102	2120394.91	6038273.91	13.94	START	START
1103	2120621.28	6038302.3	14.13	NAIL W OLD	NAIL W OLD
1104	2120115.29	6038102.44	13.89	NAIL W	NAIL W
1105	2120347.83	6037685.17	13.96	NAIL W	NAIL W
1106	2120693.46	6037826.4	12.68	NAIL W	NAIL W
1172	2120523.77	6037738.63	13.92	NAIL W OLD	NAIL W OLD
1173	2120347.83	6037685.17	13.96	NAIL W	NAIL W
1182	2120621.36	6038302.28	14.14	NAIL W 103	NAIL W 103



PLS SURVEYS, INC.
LAND & HYDROGRAPHIC SURVEYORS
2220 Livingston Street, Suite 202
Oakland, California 94606-5203
510.261.0900 FAX 510.261.3303
e-mail: plssurv@pacbell.net

7TH STREET
PORT OF OAKLAND

SCALE	1" = 100'
DATE	02/27/02
BY	JET
JOB NO.	02-001

Survey Locations for Environmental Soil/Grab Groundwater Borings by Others
2225 2277 7th Street, Oakland, CA

POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
57	2120517.44	6038285.55	14.41	MFC 10
52	2120461.68	6037776.17	14.24	MFC 11
51	2120442.50	6037950.61	13.84	MFC 13
53	2120426.30	6038062.04	13.98	MFC 14
54	2120417.24	6038131.19	14.12	MFC 15
56	2120415.16	6038253.69	14.20	MFC 16
55	2120383.21	6038276.75	14.22	MFC 17
91	2120603.98	6037813.62	13.63	MFC1
58	2120499.18	6037915.01	14.60	MFC12
86	2120623.67	6038062.33	13.29	MFC2
68	2120605.11	6038409.66	14.84	MFC21
84	2120568.87	6038499.25	15.30	MFC22
69	2120497.93	6038596.50	15.33	MFC23
59	2120532.26	6038332.66	15.32	MFC24
49	2120452.95	6038494.59	14.77	MFC25
67	2120380.87	6038635.61	15.38	MFC26
60	2120409.59	6038353.48	13.84	MFC27
61	2120396.92	6038401.85	14.33	MFC28
50	2120361.05	6038532.73	15.81	MFC29
85	2120628.08	6038212.64	14.70	MFC3
62	2120343.68	6038366.13	14.17	MFC30
63	2120301.53	6038395.88	14.67	MFC31
70	2120245.29	6038606.03	14.40	MFC32
48	2120245.64	6038429.04	15.35	MFC33
71	2120198.05	6038531.81	15.11	MFC34
64	2120192.04	6038351.92	14.44	MFC35
72	2120117.37	6038568.05	14.31	MFC36
65	2120114.20	6038307.08	14.11	MFC37
80	2120102.85	6038387.09	15.35	MFC38
77	2120104.90	6038484.82	15.58	MFC39
90	2120583.84	6037918.24	17.67	MFC4
81	2120080.30	6038350.07	14.84	MFC40
82	2120024.11	6038378.43	15.59	MFC41
78	2120012.05	6038455.82	15.75	MFC42
73	2120006.03	6038534.58	14.26	MFC43
83	2119961.88	6038381.37	15.65	MFC44
79	2119935.71	6038417.39	15.68	MFC45
76	2120130.15	6038455.85	19.87	MFC46
89	2120578.20	6038054.33	17.68	MFC5
88	2120510.92	6038087.11	17.67	MFC6

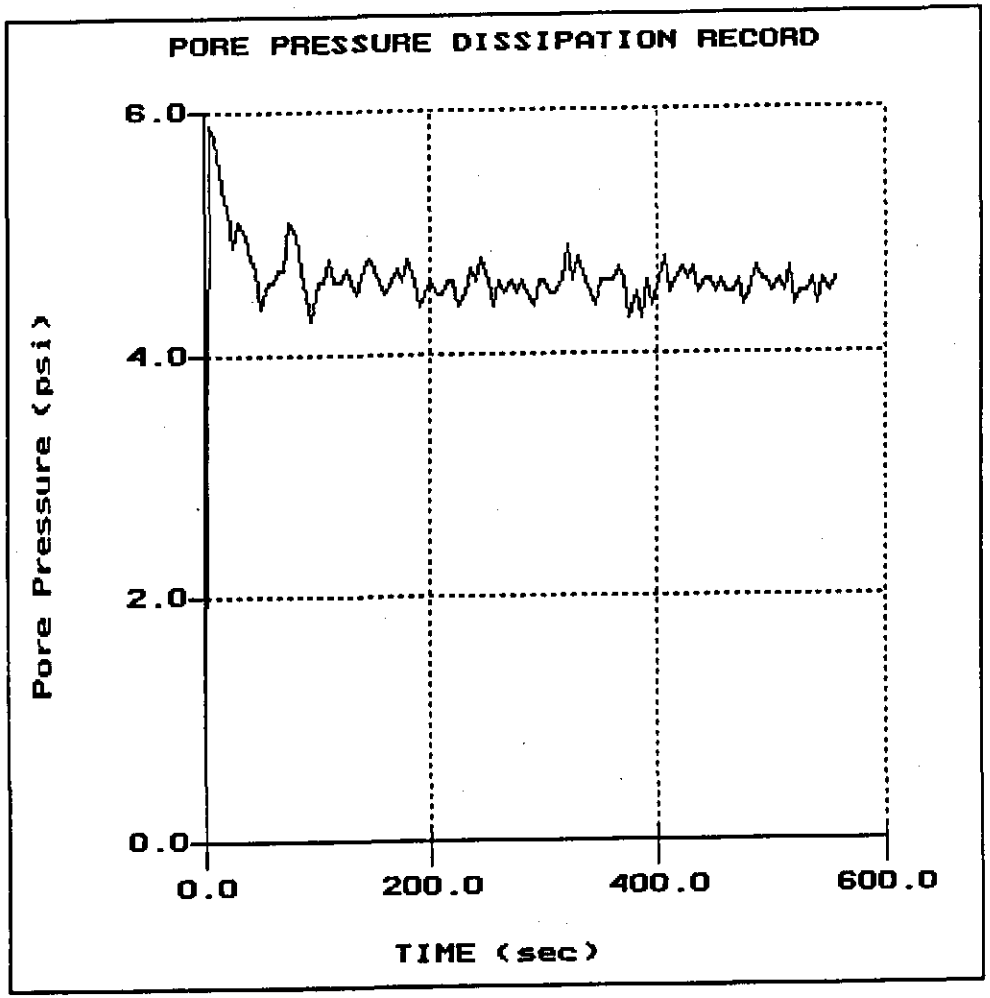
Survey Locations for Environmental Soil/Grab Groundwater Borings by Others
2225 2277 7th Street, Oakland, CA

POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
87	2120518.85	6038132.80	17.66	MFC7
11	2120659.64	6037991.68	12.89	NAIL W
92	2120631.06	6037851.97	14.80	PAV
93	2120623.48	6037910.68	14.92	PAV
94	2120623.20	6037913.37	13.84	PAV
95	2120611.58	6037994.88	13.70	PAV
96	2120600.80	6038071.51	13.70	PAV
97	2120592.91	6038126.91	13.63	PAV
98	2120462.68	6038173.88	14.58	MFC9
99	2120495.28	6038178.58	14.87	MFC8
101	2120348.27	6038236.53	13.75	MFC19
102	2120285.68	6038494.15	19.92	MFC20
103	2120339.81	6038163.15	13.99	MFC18
CONTROL: HORIZONTAL CONTROL IS BASED ON THE CALIFORNIA				
	COORDINATE SYSTEM NAD '83, ZONE III. VERTICAL			
	BENCHMARK IS POINT "BART VENT", HELD WITH AN			
	ELEVATION OF 17.20' PORT OF OAKLAND DATUM.			

ITSI

Site:19
Sounding:CPT-18

Field Rep:20 TON A AD056
Date:01:30:102 13:22

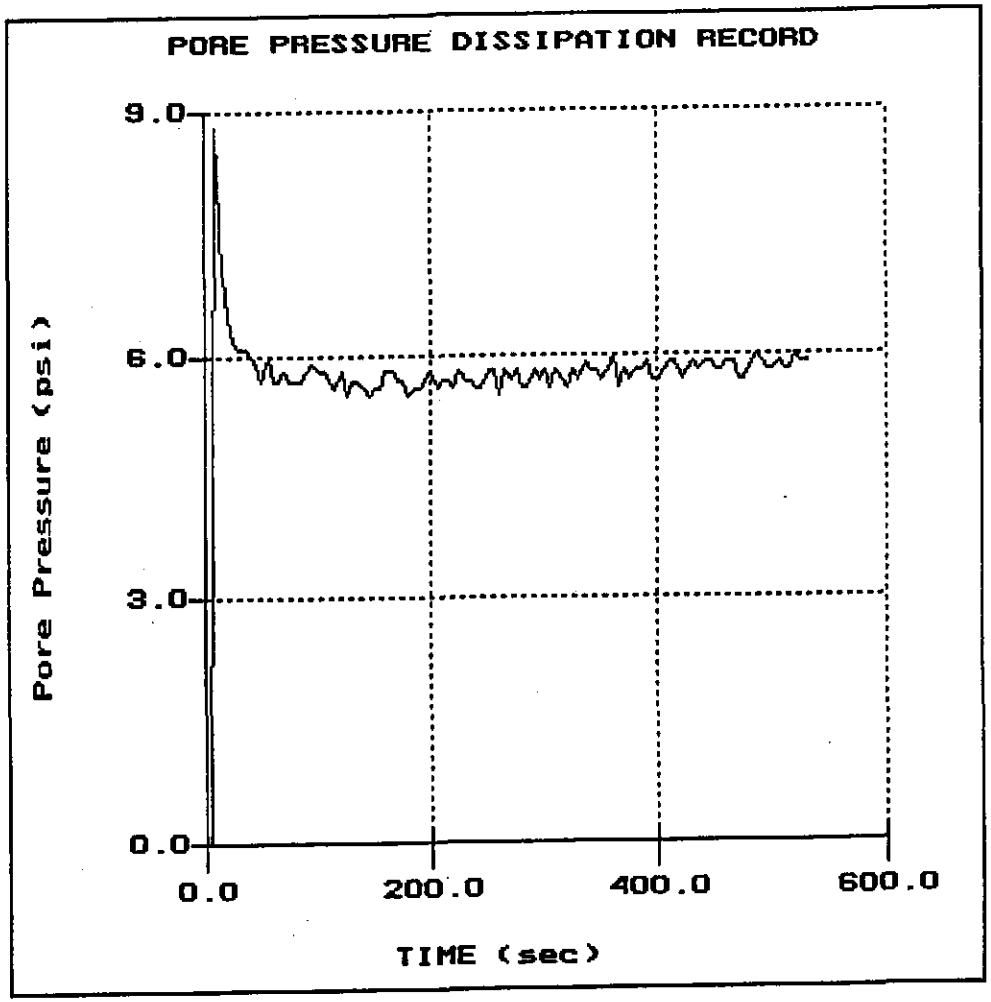


File: 009C18.PPD
Depth (m): 5.65
(ft): 18.54
Duration : 555.0s
U-min: 0.60 0.0s
U-max: 5.90 5.0s

ITSI

Site:20
Sounding:CPT-19

Field Rep:20 TON A AD056
Date:01:30:102 13:58

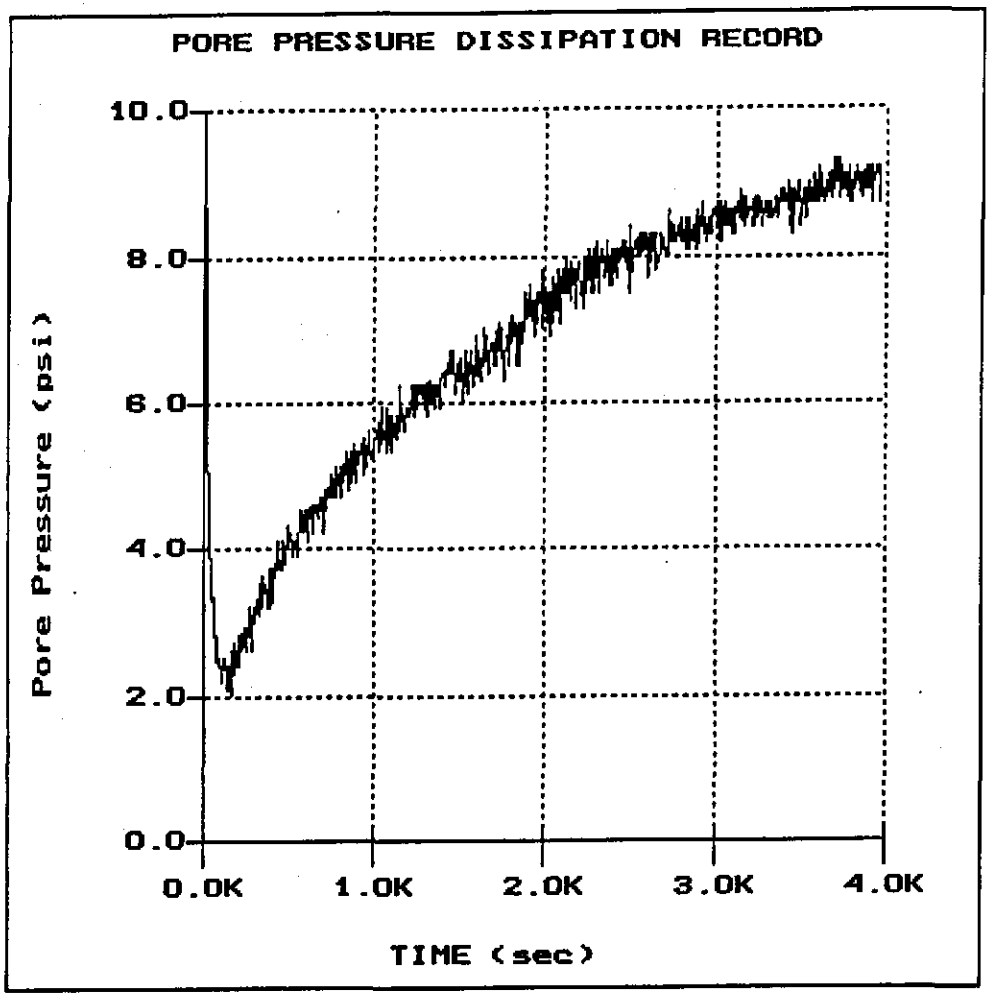


File: 009C19.PPD
Depth (m): 6.10
(ft): 20.01
Duration : 530.0s
U-min: -1.10 0.0s
U-max: 8.80 10.0s

ITSI

Site:03
Sounding:CPT-20

Field Rep:20 TON A AD088
Date:01:28:102 13:28



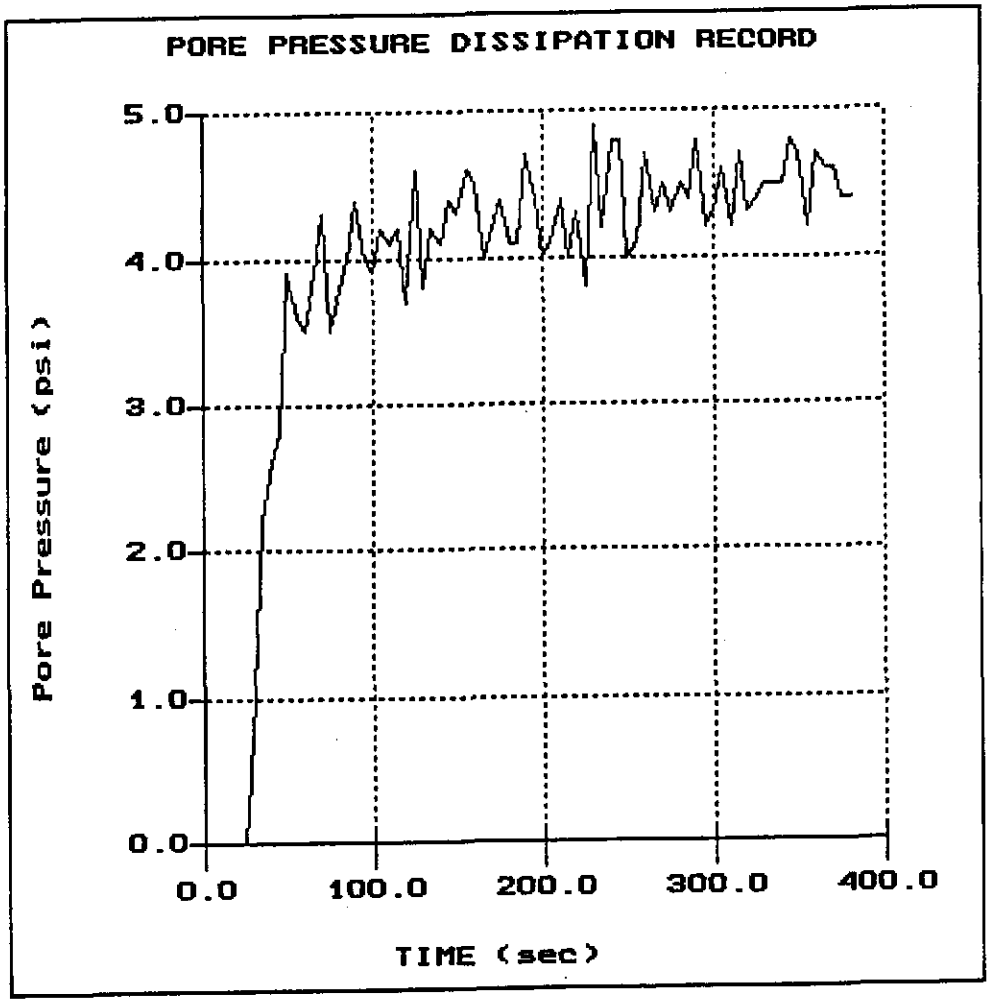
File: 009C20.PPD
Depth (m): 6.35
(ft): 20.83
Duration : 3955.0s
U-min: 2.00 165.0s
U-max: 9.40 5.0s

ITSI

Site:21
Sounding:CPT-21

Field Rep:20 TON A ADOS6
Date:01:30:102 14:37

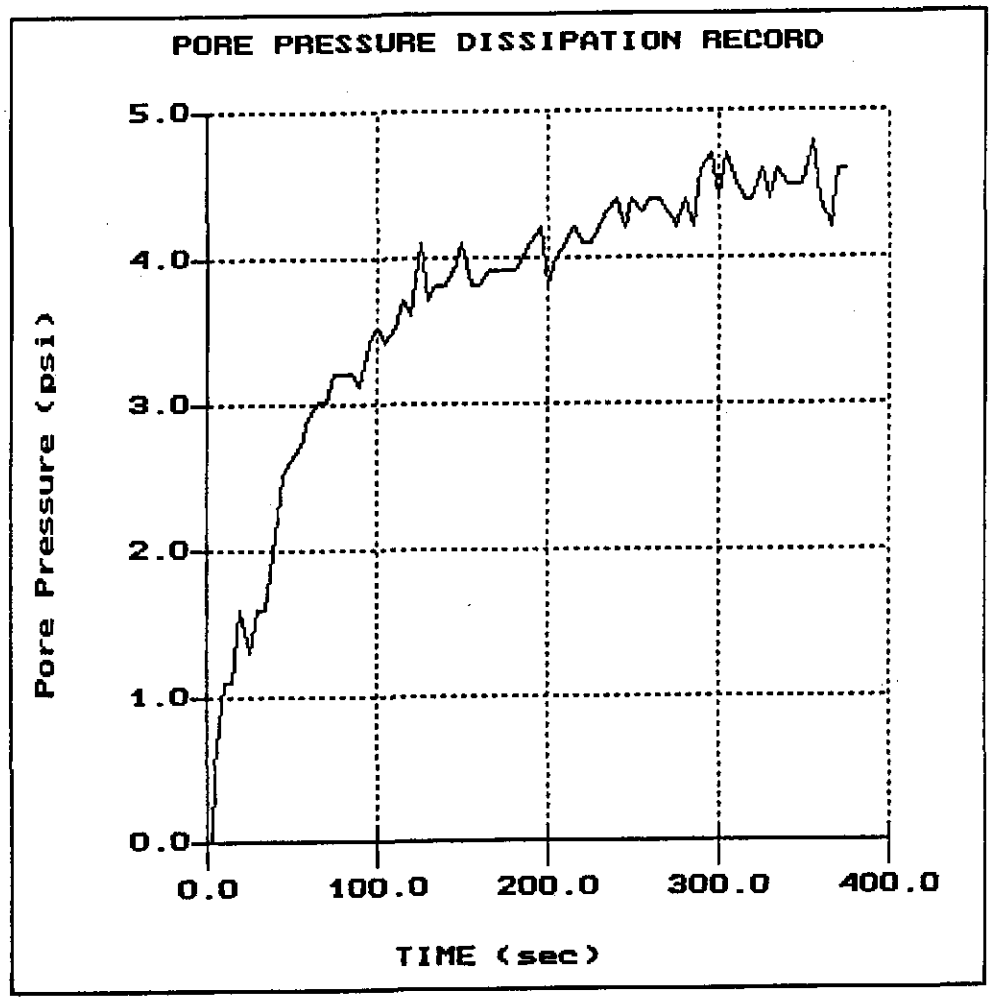
File: 009C21.PPD
Depth (m): 5.65
(ft): 18.54
Duration : 380.0s
U-min: -3.90 0.0s
U-max: 4.90 230.0s



ITSI

Site:24
Sounding:CPT-22

Field Rep:20 TON A AD056
Date:01:31:102 09:09

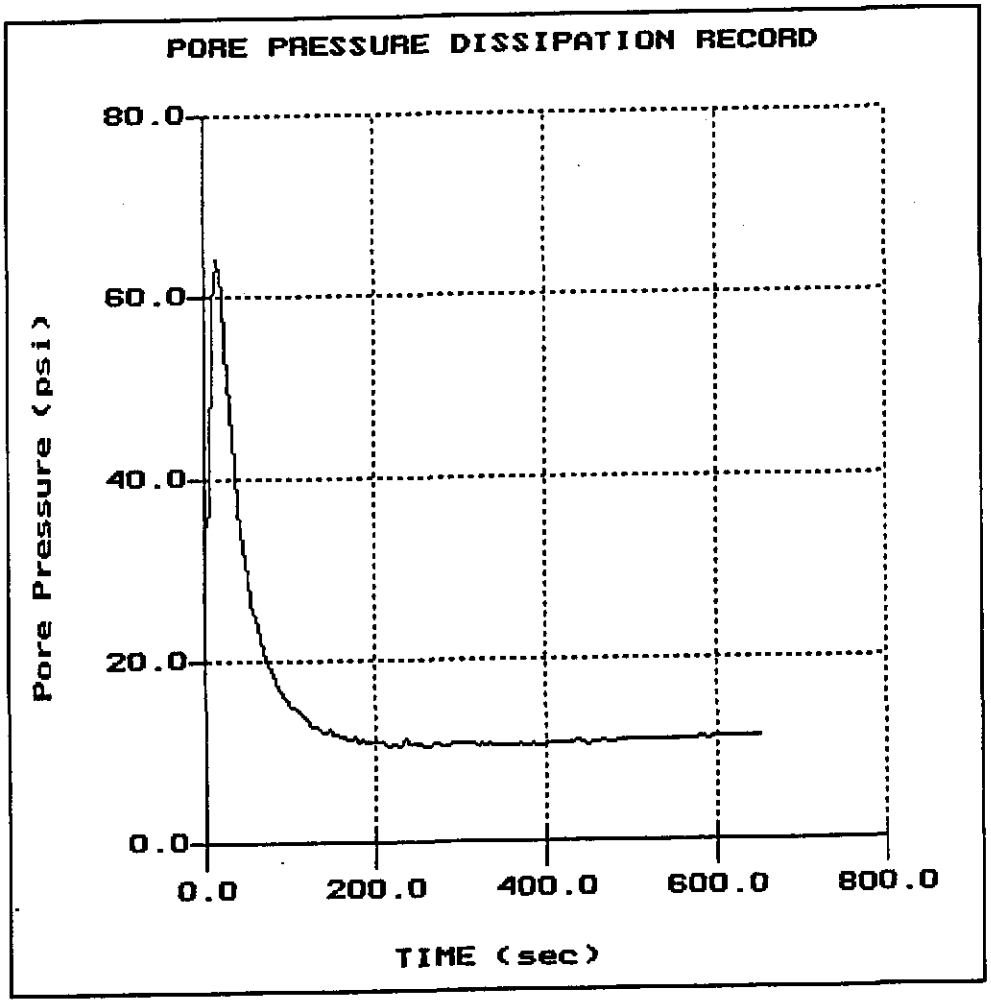


File: 009C22.PPD
Depth (m): 5.90
(ft): 19.36
Duration : 375.0s
U-min: -1.40 0.0s
U-max: 4.80 355.0s

ITSI

Site:25
Sounding:CPT-24

Field Rep:20 TON A AD056
Date:01:31:102 09:42

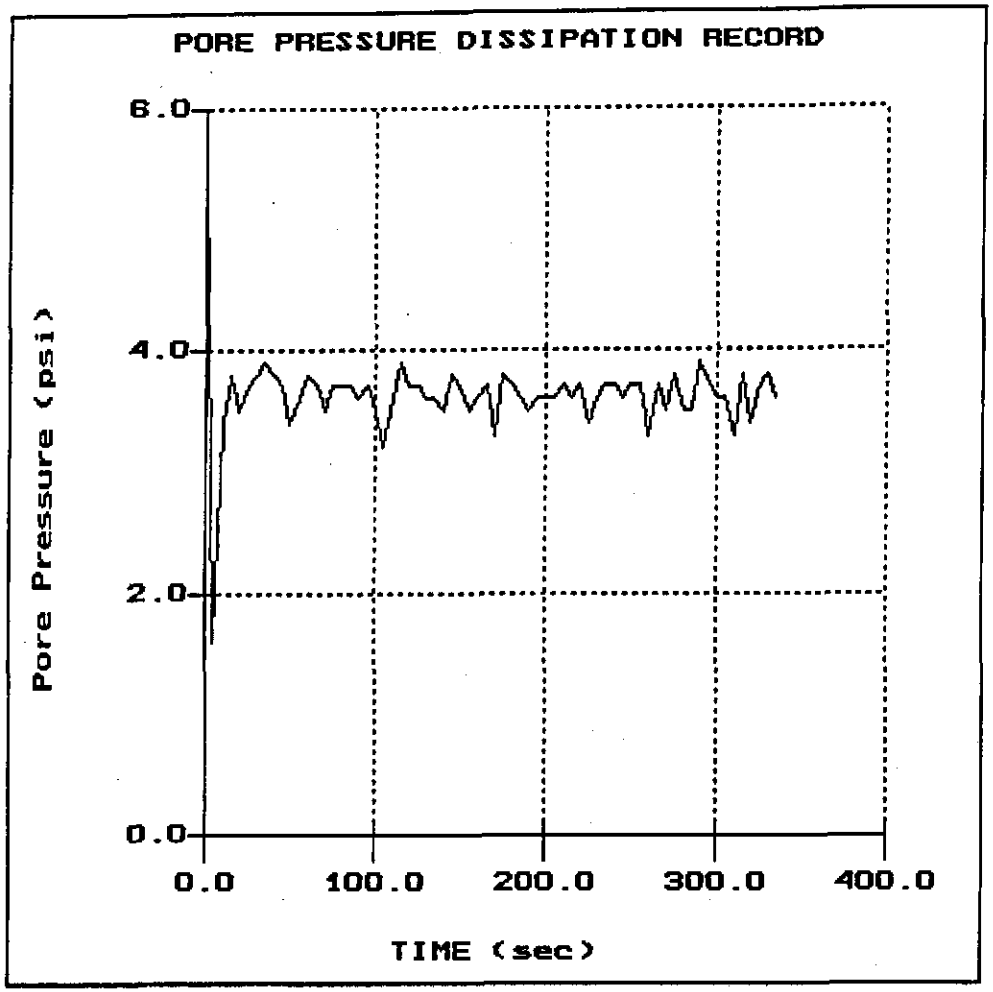


File: 009C24.PPD
Depth (m): 6.10
(ft): 20.01
Duration : 650.0s
U-min: 10.50 390.0s
U-max: 64.10 15.0s

ITSI

Site:27
Sounding:CPT-25

Field Rep:20 TON A AD056
Date:01:31:102 10:59

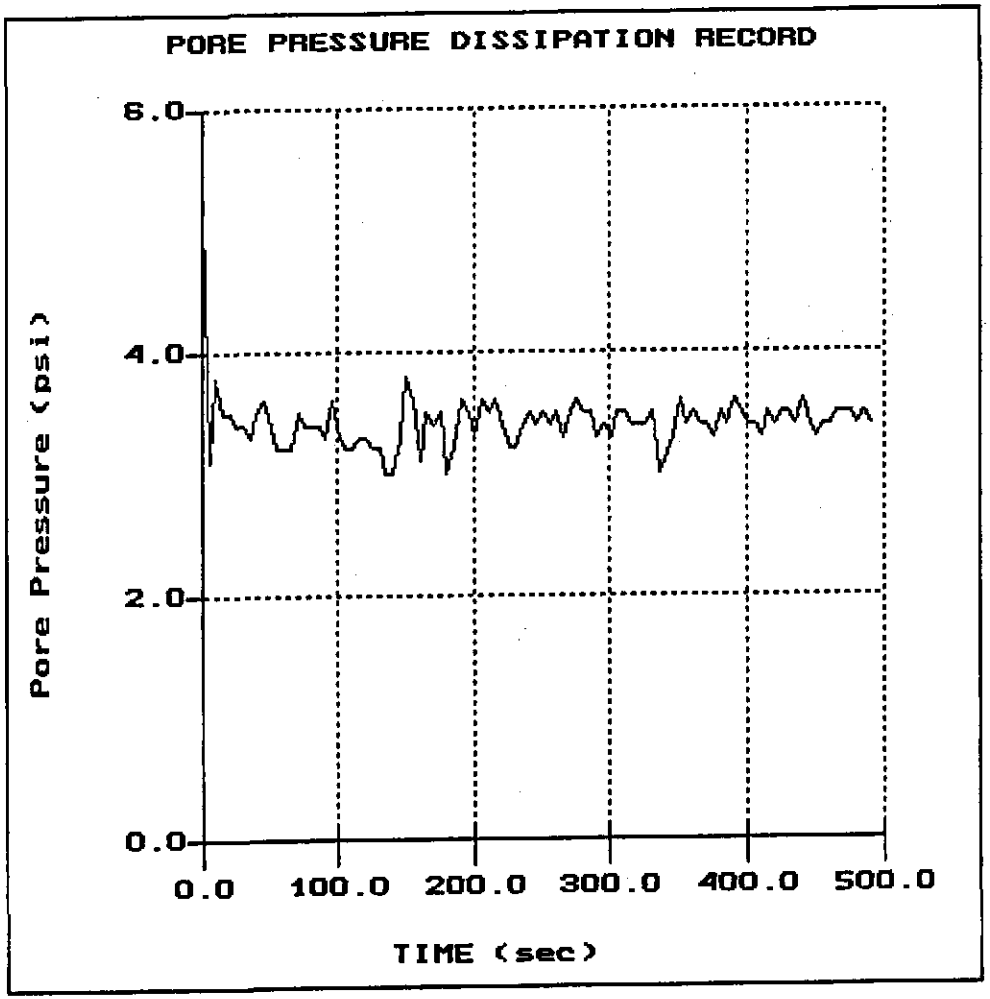


File: 009C25.PPD
Depth (m): 4.90
(ft): 16.08
Duration : 335.0s
U-min: 1.60 5.0s
U-max: 5.60 0.0s

ITSI

Site:26
Sounding:CPT-26

Field Rep:20 TON A AD056
Date:01:31:102 10:14

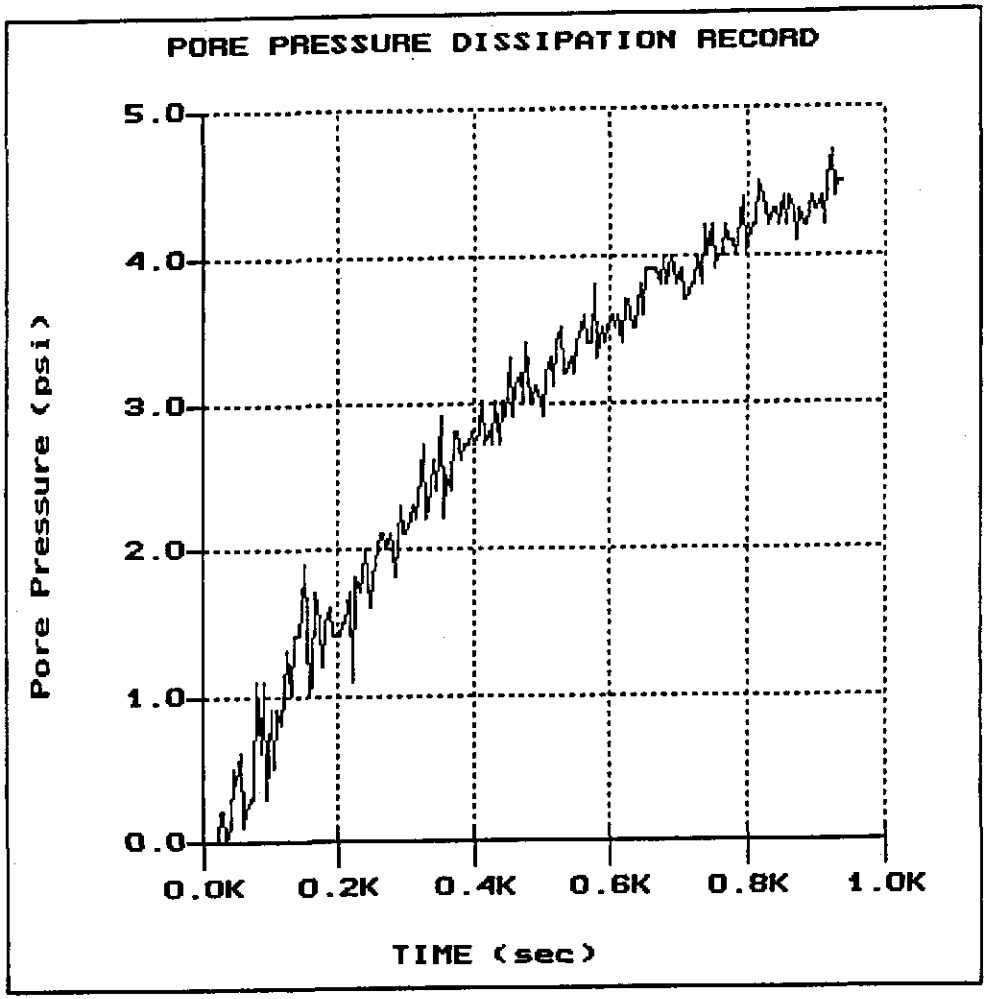


File: 009C26.PPD
Depth (m): 5.35
(ft): 17.55
Duration : 490.0s
U-min: 3.00 335.0s
U-max: 5.20 0.0s

ITSI

Site: 16
Sounding: CPT-27

Field Rep: 20 TON A AD056
Date: 01:30:102 09:03

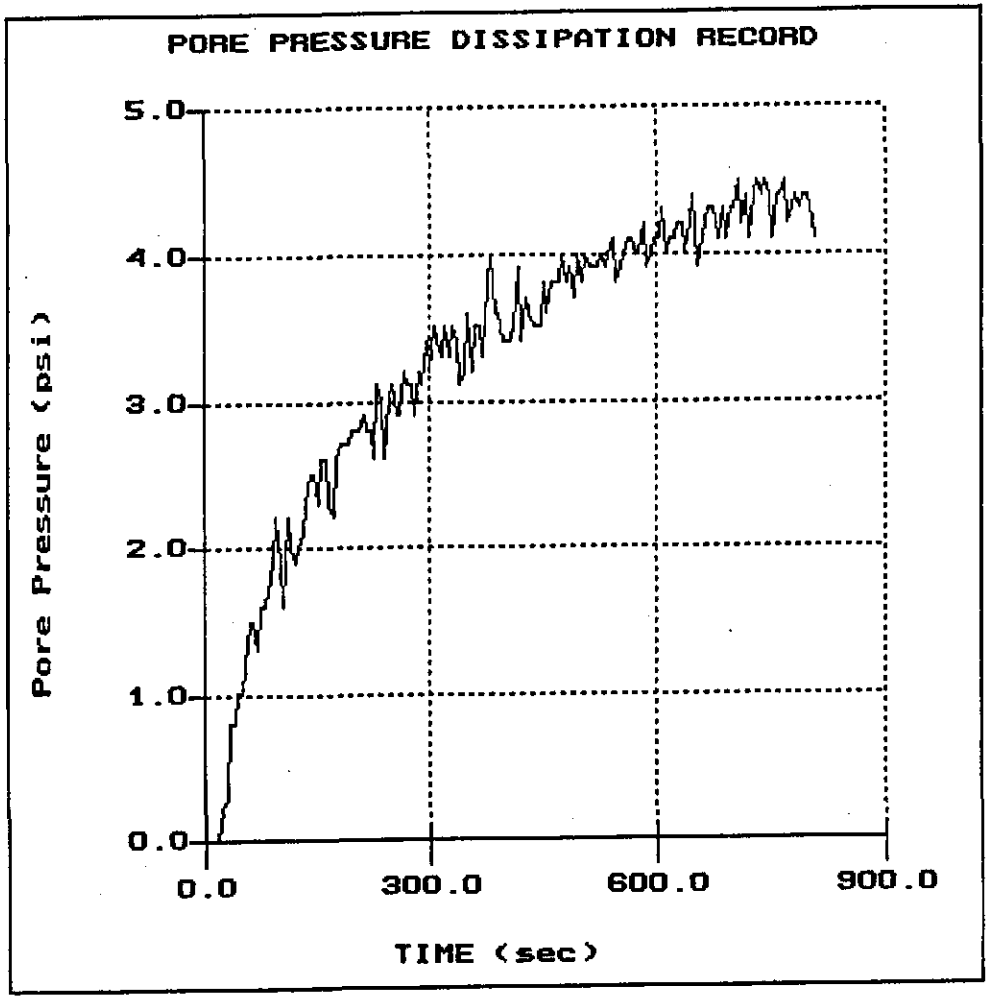


File: 009C27.PPD
Depth (m): 5.65
(ft): 18.54
Duration : 935.0s
U-min: -6.50 0.0s
U-max: 4.70 920.0s

ITSI

Site:28
Sounding:CPT-28

Field Rep:20 TON A ADOS6
Date:01:31:102 11:25



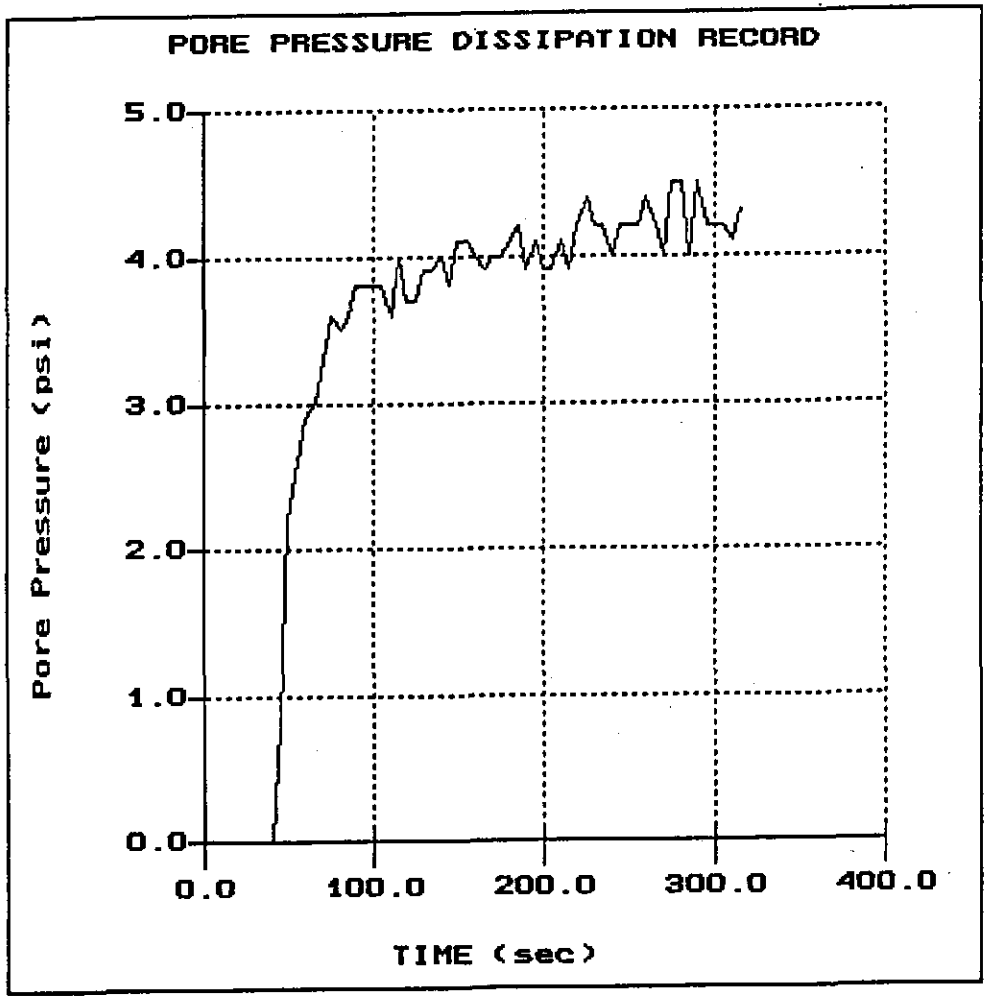
File: 009C28.PPD
Depth (m): 5.55
(ft): 18.21
Duration : 805.0s
U-min: -3.10 0.0s
U-max: 4.50 765.0s

ITSI

Site:23
Sounding:CPT-29

Field Rep:20 TON A AD056
Date:01:31:102 08:37

File: 009C29.PPD
Depth (m): 6.10
(ft): 20.01
Duration : 315.0s
U-min: -7.60 0.0s
U-max: 4.50 290.0s

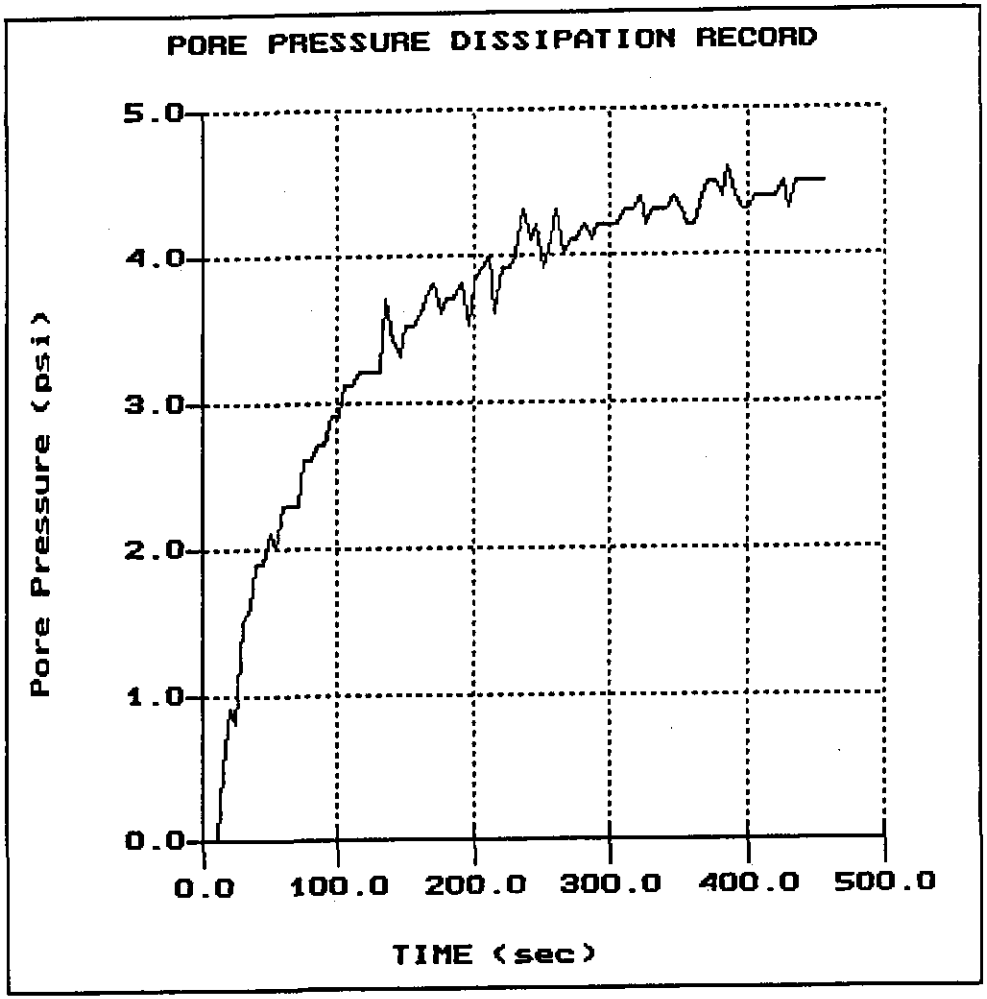


ITSI

Site:30
Sounding:CPT-30

Field Rep:20 TON A AD056
Date:02:01:102 09:55

File: 009C30.PPD
Depth (m): 5.60
(ft): 18.37
Duration : 455.0s
U-min: -3.50 0.0s
U-max: 4.60 385.0s

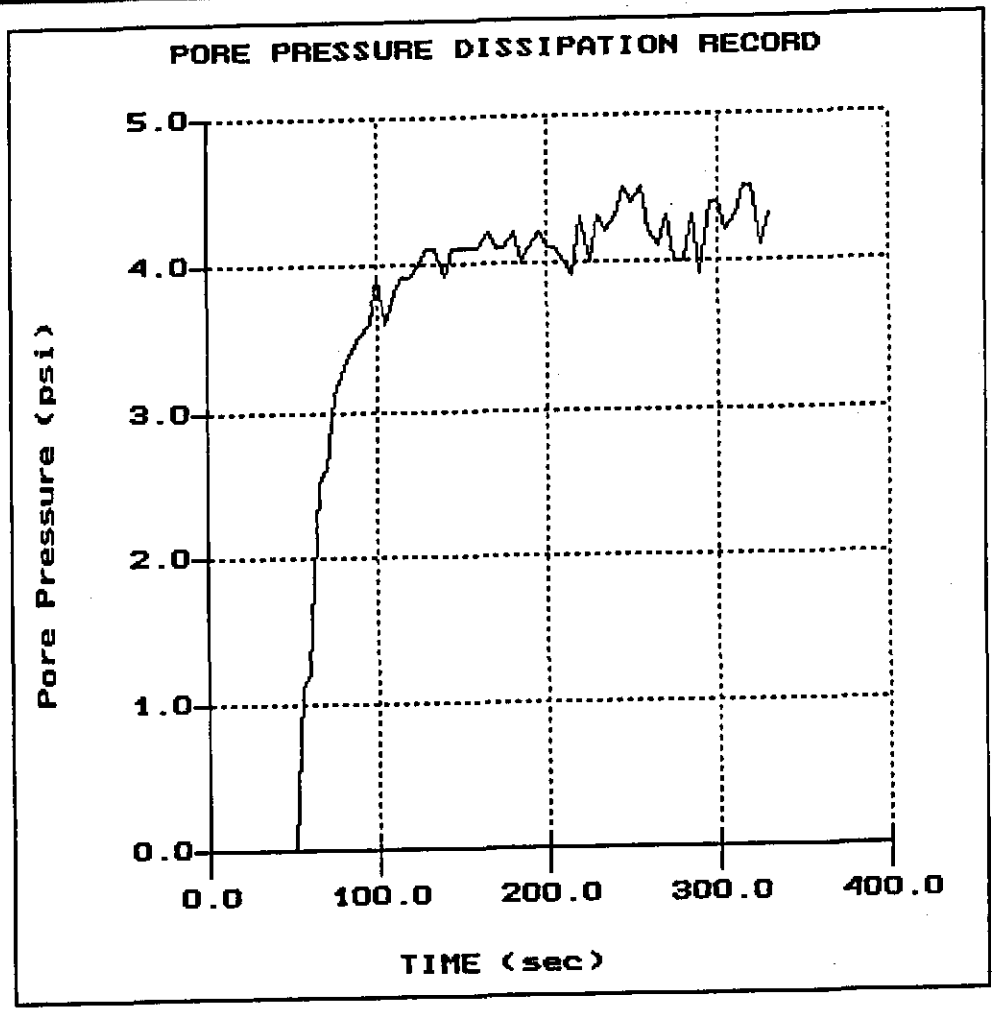


ITSI

Site:29
Sounding:CPT-31

Field Rep:20 TON A AD056
Date:02:01:102 09:22

File: 009C31.PPD
Depth (m): 5.60
(ft): 18.37
Duration : 330.0s
U-min: -8.40 0.0s
U-max: 4.50 320.0s

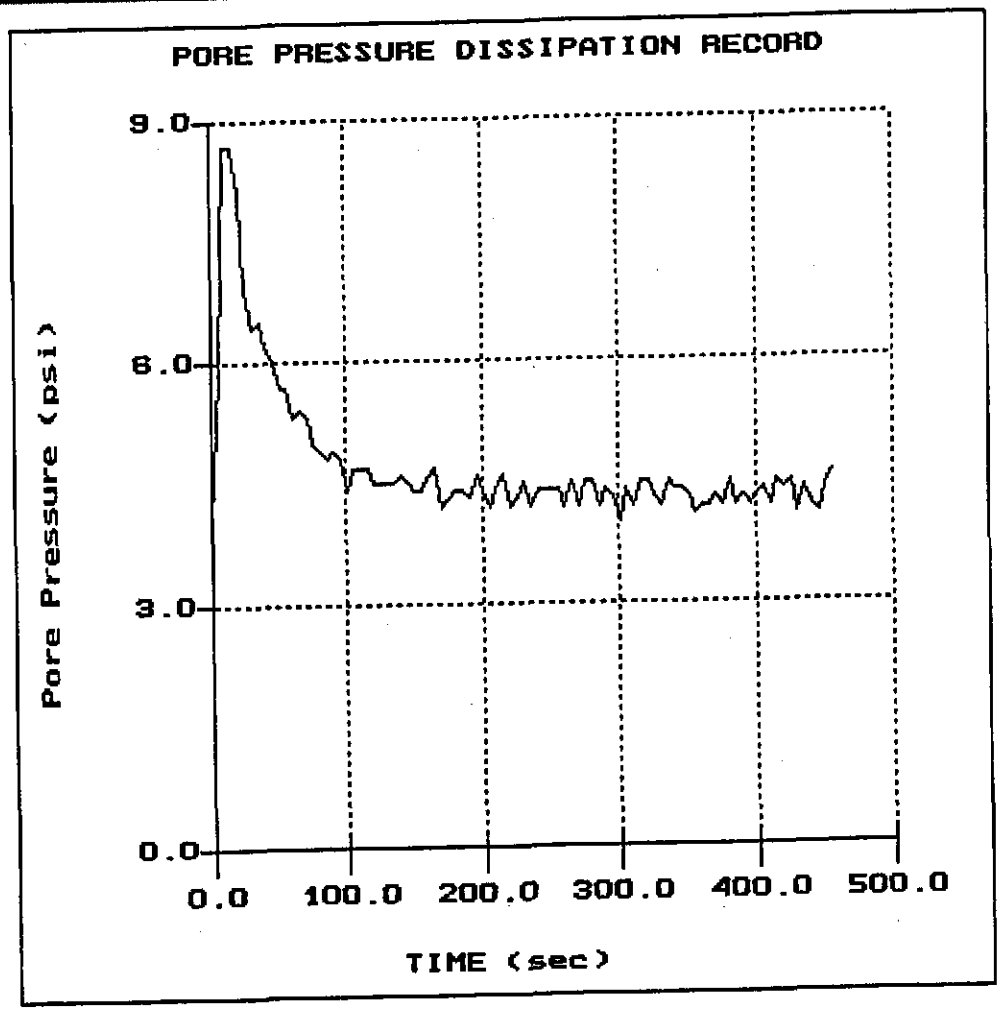


ITSI

Site:31
Sounding:CPT-32

Field Rep:20 TON A AD056
Date:02:01:102 10:37

File: 009C32.PPD
Depth (m): 5.40
(ft): 17.72
Duration : 455.0s
U-min: 4.00 300.0s
U-max: 8.70 15.0s



APPENDIX C

CONE PENETRATION TEST AND PEIZOMETER INSTALLATION PRODUCT SAMPLE ANALYTICAL RESULTS

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

February 13, 2002

Rachel Hess, Project Manager
Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, CA 94598

Dear Ms. Hess:

Included are the results from the testing of material submitted on February 6, 2002 from your Port of Oakland / 00-152.15 project. The product samples submitted for forensic evaluation arrived in good condition. Upon their arrival, the samples CPT-20, CPT-14, CPT-19, CJRS-1, and CPT-30 were assigned our laboratory project number 202033 and were placed in a refrigerator maintained at 4°C until removed for sample processing.

The samples CPT-20, CPT-14, CPT-19, CJRS-1, and CPT-30 were diluted and analyzed using a gas chromatograph with a flame ionization detector (GC/FID) and an electron capture detector (ECD). The data generated yielded information on the boiling range and general chemical composition of the material present. The GC/FID and GC/ECD traces are enclosed. A GC/FID trace of a standard consisting of normal alkanes is also provided for reference purposes.

In addition to the GC/FID/ECD analysis, the samples CPT-20, CPT-14, CPT-19, CJRS-1, and CPT-30 were analyzed for paraffin, isoparaffin, aromatic, naphthene, and olefin (PIANO) constituents using a GC fitted with a mass spectrometer (MS); volatile organic compounds using GC/MS; polycyclic aromatic compounds (PAHs) using GC/MS; and total metals using inductively coupled plasma (ICP). The results of this testing, including the associated quality assurance and charts depicting the relative abundance of polycyclic aromatic hydrocarbons in the samples, are also enclosed.

Please contact us if additional consultation is needed by our firm in the interpretation of the analytical results provided. We appreciate this opportunity to be of service to you and hope you will call if you should have any questions. We will hold your samples for 30 days before disposal unless directed otherwise.

Sincerely,

FRIEDMAN & BRUYA, INC.

Kurt Johnson, Chemist

Enclosures
ITS0213R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/07/02
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
CPT-20	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The material present may include kerosene, diesel and similar fuels. The medium boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from *n*-C_9 to *n*-C_{24} showing a maximum near *n*-C_{15}. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 270°C. Within this range, the dominant peaks present are indicative of isoprenoids including norpristane, pristane, and phytane. A secondary pattern of peaks characteristic of the normal alkanes was also present. The relative abundance of the isoprenoids and normal alkanes indicates that the majority of fuel has undergone substantial biological degradation. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/07/02
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
CPT-14	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The patterns displayed by these peaks are indicative of a middle distillate such as diesel fuel #2 or similar fuels. The medium boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from *n*-C_9 to *n*-C_{24} showing a maximum near *n*-C_{15}. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 270°C. Within this range, the dominant peaks present are indicative of isoprenoids including norpristane, pristane, and phytane. A discernible pattern of peaks characteristic of the normal alkanes was not present. The abundance of isoprenoids in conjunction with the apparent absence of normal alkanes indicates that the fuel present has undergone substantial biological degradation. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/07/02
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
CPT-19	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The patterns displayed by these peaks are indicative of a middle distillate such as diesel fuel #2 or similar fuels. The medium boiling compounds appear as a regular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from n-C_9 to n-C_{24} showing a maximum near n-C_{15}. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 270°C. Within this range, peaks are present which are indicative of normal alkanes as well as isoprenoids including norpristane, pristane, and phytane. The relative abundance of normal alkanes and isoprenoids indicates that the majority of material present has not undergone substantial biological degradation. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/12/02
Date Analyzed: 02/12/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
CJRS-1	The GC trace using the flame ionization detector (FID) showed the presence of medium to high boiling compounds. The material present may include diesel fuel, lubricating oil, or similar materials. The medium to high boiling compounds appear as an irregular pattern of peaks on top of of two broad humps. This material elutes from *n*-C_{13} to *n*-C_{34} showing a maximum near *n*-C_{24}. This correlates with a temperature range of approximately 240°C to 480°C with a maximum near 390°C. Within this range, dominant peaks are present which are indicative of normal alkanes. A secondary pattern of peaks characteristic of the isoprenoids including norpristane, pristane and phytane is also present. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/07/02
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
CPT-30	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The material present may include kerosene, diesel and similar fuels. The medium boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from n-C_9 to n-C_{24} showing a maximum near n-C_{15}. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 270°C. Within this range, dominant peaks are present which are indicative of normal alkanes as well as isoprenoids including norpristane, pristane and phytane. The relative abundance of the normal alkanes and isoprenoids indicates that a mixture of degraded and relatively undegraded fuel is likely present in the sample. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-01
Client ID CPT-20

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	<0.01
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	<0.01
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	<0.01
Cyclopentane	<0.01
2-Methylpentane	<0.01
DIPE	<0.01
3-Methylpentane	<0.01
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-01
Client ID CPT-20

Compound	Weight Percent
n-Hexane	0.07
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	<0.01
2,4-Dimethylpentane	<0.01
Methylcyclopentane	<0.01
2,2,3-Trimethylbutane	<0.01
Benzene	<0.01
1-Methylcyclopentene	<0.01
TAME	<0.01
3,3-Dimethylpentane	<0.01
Cyclohexane	0.01
2-Methylhexane	<0.01
2,3-Dimethylpentane	<0.01
1,1-Dimethylcyclopentane	<0.01
3-Methylhexane	<0.01
c-1,3-Dimethylcyclopentane	<0.01
3-Ethylpentane	<0.01
Isooctane	<0.01
t-1,2-Dimethylcyclopentane	<0.01
1-Heptene	<0.01
n-Heptane	0.02
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	<0.01
2,5-Dimethylhexane	<0.01
Methylcyclohexane	0.06
2,4-Dimethylhexane	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-01
Client ID CPT-20

Compound	Weight Percent
Ethylcyclopentane	0.02
t-1,c-2,4-Trimethylcyclopentane	0.02
t-1,c-2,3-Trimethylcyclopentane	0.02
2,3,4-Trimethylpentane	<0.01
Toluene	<0.01
2,3-Dimethylhexane	<0.01
2-Methylheptane	0.02
3-Methylheptane	0.03
4-Methylheptane	<0.01
3-Ethylhexane	0.02
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	<0.01
t-1,2-Dimethylcyclohexane	0.05
n-Octane	0.05
1-Ethyl-1-methylcyclopentane	<0.01
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	0.03
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	<0.01
3,5-Dimethylheptane	<0.01
n-Propylcyclopentane	<0.01
Ethylbenzene	0.02
2,3-Dimethylheptane	0.03
3,4-Dimethylheptane	<0.01
2-Methyloctane	0.05
m-Xylene	0.05
p-Xylene	0.03
3-Methyloctane	0.03
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	0.03

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-01
Client ID CPT-20

Compound	Weight Percent
n-Nonane	0.14
Isobutylcyclopentane	0.03
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	0.02
3,3-Dimethyloctane	<0.01
n-Butylcyclopentane	0.03
n-Propylbenzene	0.04
2,3-Dimethyloctane	0.02
1-Methyl-3-ethylbenzene	0.05
1-Methyl-4-ethylbenzene	0.03
2-Methylnonane	0.06
3-Ethyloctane	0.03
3-Methylnonane	0.05
1,3,5-Trimethylbenzene	0.05
1-Methyl-2-ethylbenzene	0.07
1,2,4-Trimethylbenzene	0.14
tert-Butylbenzene	<0.01
n-Decane	0.50
Isobutylbenzene	0.04
Isopropylcyclohexane	0.05
sec-Butylbenzene	0.06
1-Methyl-3-isopropylbenzene	0.06
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	0.08
1,2,3-Trimethylbenzene	0.19
Indan	<0.01
1-Methyl-3-n-propylbenzene	0.11
1-Methyl-4-n-propylbenzene	0.06
n-Butylbenzene	0.07
1,3-Dimethyl-5-ethylbenzene	0.21
1,2-Diethylbenzene	0.04
1-Methyl-2-n-propylbenzene	0.06

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-01
Client ID CPT-20

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	0.10
1,2-Dimethyl-4-ethylbenzene	0.11
1,3-Dimethyl-2-ethylbenzene	0.06
1,2-Dimethyl-3-ethylbenzene	0.02
n-Undecane	0.97
1,2,4,5-Tetramethylbenzene	0.11
2-Methylbutylbenzene	0.04
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	0.11
Methylindan	0.11
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	0.67
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	0.69
n-Hexylbenzene	0.47
2-Methylnaphthalene	1.04
n-Tridecane	0.60
1-Methylnaphthalene	0.75
n-Tetradecane	0.45
n-Pentadecane	0.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 *MODIFIED*
Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 202033-01
Client ID CPT-20

	Weight Percent
Total Identified Compounds	9.69
Oxygenated Compounds	0.00
Hydrocarbon Compounds	9.69
Unidentified Compounds	90.31
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	<0.01	<0.01		<0.01	<0.01	<0.01
C6	0.07	<0.01	<0.01	0.01	<0.01	0.08
C7	0.02	<0.01	<0.01	0.07	<0.01	0.09
C8	0.05	0.07	0.16	0.12	<0.01	0.40
C9	0.14	0.10	0.60	0.11	<0.01	0.95
C10	0.50	0.15	1.99	<0.01		2.63
C11	0.97		1.93			2.91
C12	0.67		0.47			1.13
C13	0.60					0.60
C14	0.45					0.45
C15	0.44					0.44
Total	3.91	0.32	5.15	0.31	<0.01	9.69

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-02
Client ID CPT-14

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	<0.01
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	<0.01
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	<0.01
Cyclopentane	<0.01
2-Methylpentane	<0.01
DIPE	<0.01
3-Methylpentane	<0.01
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-02
Client ID CPT-14

Compound	Weight Percent
n-Hexane	0.14
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	<0.01
2,4-Dimethylpentane	<0.01
Methylcyclopentane	0.04
2,2,3-Trimethylbutane	<0.01
Benzene	<0.01
1-Methylcyclopentene	<0.01
TAME	<0.01
3,3-Dimethylpentane	<0.01
Cyclohexane	<0.01
2-Methylhexane	<0.01
2,3-Dimethylpentane	0.01
1,1-Dimethylcyclopentane	<0.01
3-Methylhexane	0.02
c-1,3-Dimethylcyclopentane	0.01
3-Ethylpentane	<0.01
Isooctane	0.03
t-1,2-Dimethylcyclopentane	0.01
1-Heptene	<0.01
n-Heptane	0.02
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	<0.01
2,5-Dimethylhexane	0.02
Methylcyclohexane	0.02
2,4-Dimethylhexane	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-02
Client ID CPT-14

Compound	Weight Percent
Ethylcyclopentane	<0.01
t-1,c-2,4-Trimethylcyclopentane	<0.01
t-1,c-2,3-Trimethylcyclopentane	<0.01
2,3,4-Trimethylpentane	0.01
Toluene	<0.01
2,3-Dimethylhexane	0.02
2-Methylheptane	0.02
3-Methylheptane	0.02
4-Methylheptane	0.01
3-Ethylhexane	<0.01
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	<0.01
t-1,2-Dimethylcyclohexane	0.03
n-Octane	0.03
1-Ethyl-1-methylcyclopentane	<0.01
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	0.01
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	<0.01
3,5-Dimethylheptane	<0.01
n-Propylcyclopentane	<0.01
Ethylbenzene	<0.01
2,3-Dimethylheptane	<0.01
3,4-Dimethylheptane	<0.01
2-Methyloctane	<0.01
m-Xylene	<0.01
p-Xylene	<0.01
3-Methyloctane	0.02
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-02
Client ID CPT-14

Compound	Weight Percent
n-Nonane	<0.01
Isobutylcyclopentane	<0.01
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	0.02
3,3-Dimethyloctane	<0.01
n-Butylcyclopentane	0.01
n-Propylbenzene	0.04
2,3-Dimethyloctane	0.01
1-Methyl-3-ethylbenzene	<0.01
1-Methyl-4-ethylbenzene	<0.01
2-Methylnonane	0.04
3-Ethyloctane	0.03
3-Methylnonane	0.05
1,3,5-Trimethylbenzene	<0.01
1-Methyl-2-ethylbenzene	<0.01
1,2,4-Trimethylbenzene	<0.01
tert-Butylbenzene	<0.01
n-Decane	<0.01
Isobutylbenzene	<0.01
Isopropylcyclohexane	<0.01
sec-Butylbenzene	<0.01
1-Methyl-3-isopropylbenzene	<0.01
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	<0.01
1,2,3-Trimethylbenzene	<0.01
Indan	<0.01
1-Methyl-3-n-propylbenzene	<0.01
1-Methyl-4-n-propylbenzene	<0.01
n-Butylbenzene	0.19
1,3-Dimethyl-5-ethylbenzene	0.04
1,2-Diethylbenzene	0.04
1-Methyl-2-n-propylbenzene	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-02
Client ID CPT-14

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	<0.01
1,2-Dimethyl-4-ethylbenzene	0.15
1,3-Dimethyl-2-ethylbenzene	0.22
1,2-Dimethyl-3-ethylbenzene	<0.01
n-Undecane	0.24
1,2,4,5-Tetramethylbenzene	<0.01
2-Methylbutylbenzene	<0.01
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	0.10
Methylindan	0.10
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	0.20
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	<0.01
n-Hexylbenzene	0.14
2-Methylnaphthalene	0.36
n-Tridecane	0.22
1-Methylnaphthalene	0.67
n-Tetradecane	0.32
n-Pentadecane	0.45

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/07/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 202033-02
Client ID CPT-14

	Weight Percent
Total Identified Compounds	4.13
Oxygenated Compounds	0.00
Hydrocarbon Compounds	4.13
Unidentified Compounds	95.87
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	<0.01	<0.01		<0.01	<0.01	<0.01
C6	0.14	<0.01	<0.01	0.04	<0.01	0.18
C7	0.02	0.03	<0.01	0.04	<0.01	0.10
C8	0.03	0.13	<0.01	0.04	<0.01	0.20
C9	<0.01	0.02	0.05	0.01	<0.01	0.09
C10	<0.01	0.13	0.74	<0.01		0.87
C11	0.24		1.13			1.37
C12	0.20		0.14			0.34
C13	0.22					0.22
C14	0.32					0.32
C15	0.45					0.45
Total	1.61	0.32	2.06	0.14	<0.01	4.13

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-03
Client ID CPT-19

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	<0.01
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	<0.01
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	<0.01
Cyclopentane	<0.01
2-Methylpentane	<0.01
DIPE	<0.01
3-Methylpentane	<0.01
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-03
Client ID CPT-19

Compound	Weight Percent
n-Hexane	0.06
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	<0.01
2,4-Dimethylpentane	<0.01
Methylcyclopentane	0.01
2,2,3-Trimethylbutane	<0.01
Benzene	<0.01
1-Methylcyclopentene	<0.01
TAME	<0.01
3,3-Dimethylpentane	<0.01
Cyclohexane	<0.01
2-Methylhexane	<0.01
2,3-Dimethylpentane	<0.01
1,1-Dimethylcyclopentane	<0.01
3-Methylhexane	<0.01
c-1,3-Dimethylcyclopentane	<0.01
3-Ethylpentane	<0.01
Isooctane	<0.01
t-1,2-Dimethylcyclopentane	<0.01
1-Heptene	<0.01
n-Heptane	0.02
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	<0.01
2,5-Dimethylhexane	<0.01
Methylcyclohexane	0.04
2,4-Dimethylhexane	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-03
Client ID CPT-19

Compound	Weight Percent
Ethylcyclopentane	<0.01
t-1,c-2,4-Trimethylcyclopentane	0.01
t-1,c-2,3-Trimethylcyclopentane	0.01
2,3,4-Trimethylpentane	<0.01
Toluene	<0.01
2,3-Dimethylhexane	<0.01
2-Methylheptane	0.02
3-Methylheptane	0.01
4-Methylheptane	<0.01
3-Ethylhexane	<0.01
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	<0.01
t-1,2-Dimethylcyclohexane	0.04
n-Octane	0.05
1-Ethyl-1-methylcyclopentane	<0.01
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	0.02
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	0.01
3,5-Dimethylheptane	<0.01
n-Propylcyclopentane	<0.01
Ethylbenzene	0.02
2,3-Dimethylheptane	0.02
3,4-Dimethylheptane	<0.01
2-Methyloctane	0.01
m-Xylene	0.02
p-Xylene	<0.01
3-Methyloctane	0.03
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-03
Client ID CPT-19

Compound	Weight Percent
n-Nonane	0.14
Isobutylcyclopentane	<0.01
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	0.02
3,3-Dimethyloctane	<0.01
n-Butylcyclopentane	0.03
n-Propylbenzene	0.04
2,3-Dimethyloctane	0.02
1-Methyl-3-ethylbenzene	<0.01
1-Methyl-4-ethylbenzene	0.03
2-Methylnonane	0.04
3-Ethyloctane	0.02
3-Methylnonane	0.04
1,3,5-Trimethylbenzene	<0.01
1-Methyl-2-ethylbenzene	0.04
1,2,4-Trimethylbenzene	0.10
tert-Butylbenzene	<0.01
n-Decane	0.32
Isobutylbenzene	<0.01
Isopropylcyclohexane	0.02
sec-Butylbenzene	0.02
1-Methyl-3-isopropylbenzene	<0.01
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	0.04
1,2,3-Trimethylbenzene	0.09
Indan	<0.01
1-Methyl-3-n-propylbenzene	<0.01
1-Methyl-4-n-propylbenzene	0.01
n-Butylbenzene	0.09
1,3-Dimethyl-5-ethylbenzene	0.05
1,2-Diethylbenzene	0.03
1-Methyl-2-n-propylbenzene	0.03

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-03
Client ID CPT-19

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	0.06
1,2-Dimethyl-4-ethylbenzene	0.06
1,3-Dimethyl-2-ethylbenzene	0.02
1,2-Dimethyl-3-ethylbenzene	<0.01
n-Undecane	0.68
1,2,4,5-Tetramethylbenzene	0.08
2-Methylbutylbenzene	<0.01
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	0.05
Methylindan	0.05
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	0.86
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	0.23
n-Hexylbenzene	0.05
2-Methylnaphthalene	0.34
n-Tridecane	1.09
1-Methylnaphthalene	0.30
n-Tetradecane	1.00
n-Pentadecane	1.36

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 202033-03
Client ID CPT-19

	Weight Percent
Total Identified Compounds	7.79
Oxygenated Compounds	0.00
Hydrocarbon Compounds	7.79
Unidentified Compounds	92.21
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	<0.01	<0.01		<0.01	<0.01	<0.01
C6	0.06	<0.01	<0.01	0.01	<0.01	0.07
C7	0.02	<0.01	<0.01	0.04	<0.01	0.06
C8	0.05	<0.1	0.04	0.08	<0.01	0.17
C9	0.14	0.07	0.32	0.04	<0.01	0.57
C10	0.32	0.11	0.78	<0.01		1.21
C11	0.68		0.69			1.36
C12	0.86		0.05			0.90
C13	1.09					1.09
C14	1.00					1.00
C15	1.36					1.36
Total	5.57	0.18	1.87	0.17	<0.01	7.79

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-04
Client ID CJRS-1

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	<0.01
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	<0.01
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	<0.01
Cyclopentane	<0.01
2-Methylpentane	<0.01
DIPE	<0.01
3-Methylpentane	<0.01
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-04
Client ID CJRS-1

Compound	Weight Percent
n-Hexane	<0.01
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	<0.01
2,4-Dimethylpentane	<0.01
Methylcyclopentane	<0.01
2,2,3-Trimethylbutane	<0.01
Benzene	<0.01
1-Methylcyclopentene	<0.01
TAME	<0.01
3,3-Dimethylpentane	<0.01
Cyclohexane	<0.01
2-Methylhexane	<0.01
2,3-Dimethylpentane	<0.01
1,1-Dimethylcyclopentane	<0.01
3-Methylhexane	<0.01
c-1,3-Dimethylcyclopentane	<0.01
3-Ethylpentane	<0.01
Isooctane	<0.01
t-1,2-Dimethylcyclopentane	<0.01
1-Heptene	<0.01
n-Heptane	<0.01
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	<0.01
2,5-Dimethylhexane	<0.01
Methylcyclohexane	<0.01
2,4-Dimethylhexane	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-04
Client ID CJRS-1

Compound	Weight Percent
Ethylcyclopentane	<0.01
t-1,c-2,4-Trimethylcyclopentane	<0.01
t-1,c-2,3-Trimethylcyclopentane	<0.01
2,3,4-Trimethylpentane	<0.01
Toluene	<0.01
2,3-Dimethylhexane	<0.01
2-Methylheptane	<0.01
3-Methylheptane	<0.01
4-Methylheptane	<0.01
3-Ethylhexane	<0.01
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	<0.01
t-1,2-Dimethylcyclohexane	<0.01
n-Octane	<0.01
1-Ethyl-1-methylcyclopentane	<0.01
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	<0.01
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	<0.01
3,5-Dimethylheptane	<0.01
n-Propylcyclopentane	<0.01
Ethylbenzene	<0.01
2,3-Dimethylheptane	<0.01
3,4-Dimethylheptane	<0.01
2-Methyloctane	<0.01
m-Xylene	<0.01
p-Xylene	<0.01
3-Methyloctane	<0.01
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-04
Client ID CJRS-1

Compound	Weight Percent
n-Nonane	<0.01
Isobutylcyclopentane	<0.01
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	<0.01
3,3-Dimethyloctane	<0.01
n-Butylcyclopentane	<0.01
n-Propylbenzene	<0.01
2,3-Dimethyloctane	<0.01
1-Methyl-3-ethylbenzene	<0.01
1-Methyl-4-ethylbenzene	<0.01
2-Methylnonane	<0.01
3-Ethyloctane	<0.01
3-Methylnonane	<0.01
1,3,5-Trimethylbenzene	<0.01
1-Methyl-2-ethylbenzene	<0.01
1,2,4-Trimethylbenzene	<0.01
tert-Butylbenzene	<0.01
n-Decane	<0.01
Isobutylbenzene	<0.01
Isopropylcyclohexane	<0.01
sec-Butylbenzene	<0.01
1-Methyl-3-isopropylbenzene	<0.01
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	<0.01
1,2,3-Trimethylbenzene	<0.01
Indan	<0.01
1-Methyl-3-n-propylbenzene	<0.01
1-Methyl-4-n-propylbenzene	<0.01
n-Butylbenzene	<0.01
1,3-Dimethyl-5-ethylbenzene	<0.01
1,2-Diethylbenzene	<0.01
1-Methyl-2-n-propylbenzene	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-04
Client ID CJRS-1

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	<0.01
1,2-Dimethyl-4-ethylbenzene	<0.01
1,3-Dimethyl-2-ethylbenzene	<0.01
1,2-Dimethyl-3-ethylbenzene	<0.01
n-Undecane	<0.01
1,2,4,5-Tetramethylbenzene	<0.01
2-Methylbutylbenzene	<0.01
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	<0.01
Methylindan	<0.01
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	1.65
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	<0.01
n-Hexylbenzene	<0.01
2-Methylnaphthalene	<0.01
n-Tridecane	<0.01
1-Methylnaphthalene	<0.01
n-Tetradecane	1.27
n-Pentadecane	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 202033-04
Client ID CJRS-1

	Weight Percent
Total Identified Compounds	2.92
Oxygenated Compounds	0.00
Hydrocarbon Compounds	2.92
Unidentified Compounds	97.08
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	<0.01	<0.01		<0.01	<0.01	<0.01
C6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
C7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
C9	<0.01	<0.01	<0.01	<0.01	<0.01	<0.22
C10	<0.01	<0.01	<0.01	<0.01		<0.01
C11	<0.01		<0.01			<0.01
C12	1.65		<0.01			1.65
C13	<0.01					<0.01
C14	1.27					1.27
C15	<0.01					<0.01
Total	2.92	<0.01	<0.01	<0.01	<0.01	2.92

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-05
Client ID CPT-30

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	<0.01
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	<0.01
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	<0.01
Cyclopentane	<0.01
2-Methylpentane	<0.01
DIPE	<0.01
3-Methylpentane	<0.01
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-05
Client ID CPT-30

Compound	Weight Percent
n-Hexane	0.07
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	<0.01
2,4-Dimethylpentane	<0.01
Methylcyclopentane	0.02
2,2,3-Trimethylbutane	<0.01
Benzene	<0.01
1-Methylcyclopentene	<0.01
TAME	<0.01
3,3-Dimethylpentane	<0.01
Cyclohexane	<0.01
2-Methylhexane	<0.01
2,3-Dimethylpentane	<0.01
1,1-Dimethylcyclopentane	<0.01
3-Methylhexane	<0.01
c-1,3-Dimethylcyclopentane	<0.01
3-Ethylpentane	<0.01
Isooctane	<0.01
t-1,2-Dimethylcyclopentane	<0.01
1-Heptene	<0.01
n-Heptane	0.02
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	<0.01
2,5-Dimethylhexane	<0.01
Methylcyclohexane	0.03
2,4-Dimethylhexane	<0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-05
Client ID CPT-30

Compound	Weight Percent
Ethylcyclopentane	<0.01
t-1,c-2,4-Trimethylcyclopentane	<0.01
t-1,c-2,3-Trimethylcyclopentane	<0.01
2,3,4-Trimethylpentane	<0.01
Toluene	<0.01
2,3-Dimethylhexane	<0.01
2-Methylheptane	0.02
3-Methylheptane	0.01
4-Methylheptane	<0.01
3-Ethylhexane	<0.01
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	<0.01
t-1,2-Dimethylcyclohexane	0.03
n-Octane	0.05
1-Ethyl-1-methylcyclopentane	<0.01
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	0.01
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	<0.01
3,5-Dimethylheptane	<0.01
n-Propylcyclopentane	<0.01
Ethylbenzene	0.03
2,3-Dimethylheptane	0.02
3,4-Dimethylheptane	0.01
2-Methyloctane	0.03
m-Xylene	0.02
p-Xylene	0.01
3-Methyloctane	0.04
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	0.01

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-05
Client ID CPT-30

Compound	Weight Percent
n-Nonane	0.15
Isobutylcyclopentane	0.01
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	0.01
3,3-Dimethyloctane	<0.01
n-Butylcyclopentane	0.02
n-Propylbenzene	0.03
2,3-Dimethyloctane	0.02
1-Methyl-3-ethylbenzene	0.02
1-Methyl-4-ethylbenzene	0.03
2-Methylnonane	0.06
3-Ethyloctane	0.02
3-Methylnonane	0.05
1,3,5-Trimethylbenzene	0.02
1-Methyl-2-ethylbenzene	0.06
1,2,4-Trimethylbenzene	0.12
tert-Butylbenzene	<0.01
n-Decane	0.41
Isobutylbenzene	<0.01
Isopropylcyclohexane	0.03
sec-Butylbenzene	0.02
1-Methyl-3-isopropylbenzene	0.02
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	0.06
1,2,3-Trimethylbenzene	0.10
Indan	<0.01
1-Methyl-3-n-propylbenzene	0.15
1-Methyl-4-n-propylbenzene	0.05
n-Butylbenzene	0.13
1,3-Dimethyl-5-ethylbenzene	0.12
1,2-Diethylbenzene	0.03
1-Methyl-2-n-propylbenzene	0.05

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202033-05
Client ID CPT-30

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	0.06
1,2-Dimethyl-4-ethylbenzene	0.07
1,3-Dimethyl-2-ethylbenzene	0.02
1,2-Dimethyl-3-ethylbenzene	0.01
n-Undecane	0.80
1,2,4,5-Tetramethylbenzene	0.05
2-Methylbutylbenzene	<0.01
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	0.08
Methylindan	0.08
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	0.67
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	0.31
n-Hexylbenzene	0.21
2-Methylnaphthalene	0.59
n-Tridecane	0.70
1-Methylnaphthalene	0.45
n-Tetradecane	0.18
n-Pentadecane	0.65

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15

Date Analyzed: 02/08/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 202033-05
Client ID CPT-30

	Weight Percent
Total Identified Compounds	7.17
Oxygenated Compounds	0.00
Hydrocarbon Compounds	7.17
Unidentified Compounds	92.83
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	<0.01	<0.01		<0.01	<0.01	<0.01
C6	0.07	<0.01	<0.01	0.02	<0.01	0.10
C7	0.02	<0.01	<0.01	0.03	<0.01	0.05
C8	0.05	0.03	0.07	0.05	<0.01	0.19
C9	0.15	0.10	0.40	0.07	<0.01	0.72
C10	0.41	0.15	1.24	<0.01		1.80
C11	0.80		1.12			1.91
C12	0.67		0.21			0.88
C13	0.70					0.70
C14	0.18					0.18
C15	0.65					0.65
Total	3.69	0.28	3.03	0.17	<0.01	7.17

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	CPT-20	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/06/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/10/02	Lab ID:	202033-01
Date Analyzed:	02/10/02	Data File:	021014.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	115	54	133
1,2-Dichloroethane-d4	94	48	140
Toluene-d8	107	47	145
4-Bromofluorobenzene	108	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	2-Hexanone	<1,000
Chloromethane	<100	1,3-Dichloropropane	<100
Vinyl chloride	<100	Tetrachloroethene	<100
Bromomethane	<100	Dibromochloromethane	<100
Chloroethane	<100	1,2-Dibromoethane (EDB)	<100
Trichlorofluoromethane	<100	Chlorobenzene	<100
Acetone	<1,000	Ethylbenzene	140
1,1-Dichloroethene	<100	1,1,1,2-Tetrachloroethane	<100
Methylene chloride	<500	m,p-Xylene	500
Methyl t-butyl ether (MTBE)	<100	o-Xylene	210
trans-1,2-Dichloroethene	<100	Styrene	<100
Diisopropyl ether (DIPE)	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
Ethyl t-butyl ether (ETBE)	<100	n-Propylbenzene	190
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	340
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
t-Amyl methyl ether (TAME)	<100	2-Chlorotoluene	<100
1,2-Dichloroethane (EDC)	<100	4-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	tert-Butylbenzene	<100
1,1-Dichloropropene	<100	1,2,4-Trimethylbenzene	1,300
Carbon Tetrachloride	<100	sec-Butylbenzene	150
Benzene	<100	p-Isopropyltoluene	220
Trichloroethene	<100	1,3-Dichlorobenzene	<100
1,2-Dichloropropane	<100	1,4-Dichlorobenzene	<100
Bromodichloromethane	<100	1,2-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dibromo-3-chloropropane	<100
4-Methyl-2-pentanone	<1,000	1,2,4-Trichlorobenzene	<100
cis-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
Toluene	<100	Naphthalene	1,900
trans-1,3-Dichloropropene	<100	1,2,3-Trichlorobenzene	<100
1,1,2-Trichloroethane	<100		

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	CPT-14	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/06/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/10/02	Lab ID:	202033-02
Date Analyzed:	02/10/02	Data File:	021013.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	116	54	133
1,2-Dichloroethane-d4	91	48	140
Toluene-d8	120	47	145
4-Bromofluorobenzene	109	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	2-Hexanone	<1,000
Chloromethane	<100	1,3-Dichloropropane	<100
Vinyl chloride	<100	Tetrachloroethene	<100
Bromomethane	<100	Dibromochloromethane	<100
Chloroethane	<100	1,2-Dibromoethane (EDB)	<100
Trichlorofluoromethane	<100	Chlorobenzene	<100
Acetone	<1,000	Ethylbenzene	<100
1,1-Dichloroethene	<100	1,1,1,2-Tetrachloroethane	<100
Methylene chloride	<500	m,p-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	o-Xylene	<100
trans-1,2-Dichloroethene	<100	Styrene	<100
Diisopropyl ether (DIPE)	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
Ethyl t-butyl ether (ETBE)	<100	n-Propylbenzene	140
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	<100
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
t-Amyl methyl ether (TAME)	<100	2-Chlorotoluene	<100
1,2-Dichloroethane (EDC)	<100	4-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	tert-Butylbenzene	<100
1,1-Dichloropropene	<100	1,2,4-Trimethylbenzene	<100
Carbon Tetrachloride	<100	sec-Butylbenzene	130
Benzene	<100	p-Isopropyltoluene	<100
Trichloroethene	<100	1,3-Dichlorobenzene	<100
1,2-Dichloropropane	<100	1,4-Dichlorobenzene	<100
Bromodichloromethane	<100	1,2-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dibromo-3-chloropropane	<100
4-Methyl-2-pentanone	<1,000	1,2,4-Trichlorobenzene	<100
cis-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
Toluene	<100	Naphthalene	<100
trans-1,3-Dichloropropene	<100	1,2,3-Trichlorobenzene	<100
1,1,2-Trichloroethane	<100		

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	CPT-19	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/06/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/10/02	Lab ID:	202033-03
Date Analyzed:	02/10/02	Data File:	021015.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	115	54	133
1,2-Dichloroethane-d4	86	48	140
Toluene-d8	119	47	145
4-Bromofluorobenzene	115	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	2-Hexanone	<1,000
Chloromethane	<100	1,3-Dichloropropane	<100
Vinyl chloride	<100	Tetrachloroethene	<100
Bromomethane	<100	Dibromochloromethane	<100
Chloroethane	<100	1,2-Dibromoethane (EDB)	<100
Trichlorofluoromethane	<100	Chlorobenzene	<100
Acetone	<1,000	Ethylbenzene	180
1,1-Dichloroethene	<100	1,1,1,2-Tetrachloroethane	<100
Methylene chloride	<500	m,p-Xylene	150
Methyl t-butyl ether (MTBE)	<100	o-Xylene	<100
trans-1,2-Dichloroethene	<100	Styrene	<100
Diisopropyl ether (DIPE)	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
Ethyl t-butyl ether (ETBE)	<100	n-Propylbenzene	190
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	<100
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
t-Amyl methyl ether (TAME)	<100	2-Chlorotoluene	<100
1,2-Dichloroethane (EDC)	<100	4-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	tert-Butylbenzene	<100
1,1-Dichloropropene	<100	1,2,4-Trimethylbenzene	1,100
Carbon Tetrachloride	<100	sec-Butylbenzene	100
Benzene	<100	p-Isopropyltoluene	130
Trichloroethene	<100	1,3-Dichlorobenzene	<100
1,2-Dichloropropane	<100	1,4-Dichlorobenzene	<100
Bromodichloromethane	<100	1,2-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dibromo-3-chloropropane	<100
4-Methyl-2-pentanone	<1,000	1,2,4-Trichlorobenzene	<100
cis-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
Toluene	<100	Naphthalene	920
trans-1,3-Dichloropropene	<100	1,2,3-Trichlorobenzene	<100
1,1,2-Trichloroethane	<100		

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	CJRS-1	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/06/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/10/02	Lab ID:	202033-04
Date Analyzed:	02/10/02	Data File:	021012.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	116	54	133
1,2-Dichloroethane-d4	101	48	140
Toluene-d8	116	47	145
4-Bromofluorobenzene	109	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	2-Hexanone	<1,000
Chloromethane	<100	1,3-Dichloropropane	<100
Vinyl chloride	<100	Tetrachloroethene	<100
Bromomethane	<100	Dibromochloromethane	<100
Chloroethane	<100	1,2-Dibromoethane (EDB)	<100
Trichlorofluoromethane	<100	Chlorobenzene	<100
Acetone	<1,000	Ethylbenzene	<100
1,1-Dichloroethene	<100	1,1,1,2-Tetrachloroethane	<100
Methylene chloride	<500	m,p-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	o-Xylene	<100
trans-1,2-Dichloroethene	<100	Styrene	<100
Diisopropyl ether (DIPE)	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
Ethyl t-butyl ether (ETBE)	<100	n-Propylbenzene	<100
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	<100
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
t-Amyl methyl ether (TAME)	<100	2-Chlorotoluene	<100
1,2-Dichloroethane (EDC)	<100	4-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	tert-Butylbenzene	<100
1,1-Dichloropropene	<100	1,2,4-Trimethylbenzene	<100
Carbon Tetrachloride	<100	sec-Butylbenzene	<100
Benzene	<100	p-Isopropyltoluene	<100
Trichloroethene	<100	1,3-Dichlorobenzene	<100
1,2-Dichloropropane	<100	1,4-Dichlorobenzene	<100
Bromodichloromethane	<100	1,2-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dibromo-3-chloropropane	<100
4-Methyl-2-pentanone	<1,000	1,2,4-Trichlorobenzene	<100
cis-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
Toluene	<100	Naphthalene	<100
trans-1,3-Dichloropropene	<100	1,2,3-Trichlorobenzene	<100
1,1,2-Trichloroethane	<100		

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	CPT-30	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/06/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/10/02	Lab ID:	202033-05
Date Analyzed:	02/10/02	Data File:	021016.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	114	54	133
1,2-Dichloroethane-d4	84	48	140
Toluene-d8	118	47	145
4-Bromofluorobenzene	112	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	2-Hexanone	<1,000
Chloromethane	<100	1,3-Dichloropropane	<100
Vinyl chloride	<100	Tetrachloroethene	<100
Bromomethane	<100	Dibromochloromethane	<100
Chloroethane	<100	1,2-Dibromoethane (EDB)	<100
Trichlorofluoromethane	<100	Chlorobenzene	<100
Acetone	<1,000	Ethylbenzene	170
1,1-Dichloroethene	<100	1,1,1,2-Tetrachloroethane	<100
Methylene chloride	<500	m,p-Xylene	280
Methyl t-butyl ether (MTBE)	<100	o-Xylene	<100
trans-1,2-Dichloroethene	<100	Styrene	<100
Diisopropyl ether (DIPE)	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
Ethyl t-butyl ether (ETBE)	<100	n-Propylbenzene	200
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	260
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
t-Amyl methyl ether (TAME)	<100	2-Chlorotoluene	<100
1,2-Dichloroethane (EDC)	<100	4-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	tert-Butylbenzene	<100
1,1-Dichloropropene	<100	1,2,4-Trimethylbenzene	1,400
Carbon Tetrachloride	<100	sec-Butylbenzene	140
Benzene	<100	p-Isopropyltoluene	170
Trichloroethene	<100	1,3-Dichlorobenzene	<100
1,2-Dichloropropane	<100	1,4-Dichlorobenzene	<100
Bromodichloromethane	<100	1,2-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dibromo-3-chloropropane	<100
4-Methyl-2-pentanone	<1,000	1,2,4-Trichlorobenzene	<100
cis-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
Toluene	<100	Naphthalene	1,500
trans-1,3-Dichloropropene	<100	1,2,3-Trichlorobenzene	<100
1,1,2-Trichloroethane	<100		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	Innovative Technical Solutions, Inc.
Date Received:	Not Applicable	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/10/02	Lab ID:	02-161 mb
Date Analyzed:	02/10/02	Data File:	021011.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	122	54	133
1,2-Dichloroethane-d4	100	48	140
Toluene-d8	121	47	145
4-Bromofluorobenzene	111	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	2-Hexanone	<1,000
Chloromethane	<100	1,3-Dichloropropane	<100
Vinyl chloride	<100	Tetrachloroethene	<100
Bromomethane	<100	Dibromochloromethane	<100
Chloroethane	<100	1,2-Dibromoethane (EDB)	<100
Trichlorofluoromethane	<100	Chlorobenzene	<100
Acetone	<1,000	Ethylbenzene	<100
1,1-Dichloroethene	<100	1,1,1,2-Tetrachloroethane	<100
Methylene chloride	<500	m,p-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	o-Xylene	<100
trans-1,2-Dichloroethene	<100	Styrene	<100
Diisopropyl ether (DIPE)	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
Ethyl t-butyl ether (ETBE)	<100	n-Propylbenzene	<100
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	<100
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
t-Amyl methyl ether (TAME)	<100	2-Chlorotoluene	<100
1,2-Dichloroethane (EDC)	<100	4-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	tert-Butylbenzene	<100
1,1-Dichloropropene	<100	1,2,4-Trimethylbenzene	<100
Carbon Tetrachloride	<100	sec-Butylbenzene	<100
Benzene	<100	p-Isopropyltoluene	<100
Trichloroethene	<100	1,3-Dichlorobenzene	<100
1,2-Dichloropropane	<100	1,4-Dichlorobenzene	<100
Bromodichloromethane	<100	1,2-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dibromo-3-chloropropane	<100
4-Methyl-2-pentanone	<1,000	1,2,4-Trichlorobenzene	<100
cis-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
Toluene	<100	Naphthalene	<100
trans-1,3-Dichloropropene	<100	1,2,3-Trichlorobenzene	<100
1,1,2-Trichloroethane	<100		

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	CPT-20	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/06/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/07/02	Lab ID:	202033-01 1/10
Date Analyzed:	02/12/02	Data File:	021210.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	131 vo	35	114
2-Fluorobiphenyl	103	43	116
Terphenyl-d14	122	33	141

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Naphthalene	1,900	C3-phenanthrenes/anthracenes	290
C1-naphthalenes	6,400	C4-phenanthrenes/anthracenes	<100
C2-naphthalenes	11,000	Fluoranthene	<100
C3-naphthalenes	7,600	Pyrene	<100
C4-naphthalenes	3,200	C1-fluoranthenes/pyrenes	<100
Biphenyl	440	C2-fluoranthenes/pyrenes	<100
Acenaphthylene	<100	C3-fluoranthenes/pyrenes	<100
Acenaphthene	120	Benz(a)anthracene	<100
Dibenzofuran	250	Chrysene	<100
Fluorene	360	C1-chrysenes	<100
C1-fluorenes	850	C2-chrysenes	<100
C2-fluorenes	970	C3-chrysenes	<100
C3-fluorenes	430	C4-chrysenes	<100
Dibenzothiophene	190	Benzo(e)pyrene	<100
C1-dibenzothiophenes	410	Benzo(a)pyrene	<100
C2-dibenzothiophenes	320	Perylene	<100
C3-dibenzothiophenes	160	Benzo(b)fluoranthene	<100
C4-dibenzothiophenes	<100	Benzo(k)fluoranthene	<100
Phenanthrene	710	Indeno(1,2,3-cd)pyrene	<100
Anthracene	<100	Dibenzo(a,h)anthracene	<100
C1-phenanthrenes/anthracenes	1,200	Benzo(g,h,i)perylene	<100
C2-phenanthrenes/anthracenes	820		

vo - The value reported fell outside the control limits established for this analyte.

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	CPT-14	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/06/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/07/02	Lab ID:	202033-02
Date Analyzed:	02/08/02	Data File:	020814.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	132 ip	35	114
2-Fluorobiphenyl	100	43	116
Terphenyl-d14	101	33	141

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Naphthalene	<10	C3-phenanthrenes/anthracenes	460
C1-naphthalenes	3,100	C4-phenanthrenes/anthracenes	<10
C2-naphthalenes	6,600	Fluoranthene	170
C3-naphthalenes	6,100	Pyrene	200
C4-naphthalenes	3,500	C1-fluoranthenes/pyrenes	250
Biphenyl	<10	C2-fluoranthenes/pyrenes	<10
Acenaphthylene	<10	C3-fluoranthenes/pyrenes	<10
Acenaphthene	63	Benz(a)anthracene	48
Dibenzofuran	170	Chrysene	53
Fluorene	370	C1-chrysenes	82
C1-fluorenes	930	C2-chrysenes	53
C2-fluorenes	1,200	C3-chrysenes	<10
C3-fluorenes	690	C4-chrysenes	<10
Dibenzothiophene	220	Benzo(e)pyrene	37
C1-dibenzothiophenes	560	Benzo(a)pyrene	58
C2-dibenzothiophenes	620	Perylene	<10
C3-dibenzothiophenes	260	Benzo(b)fluoranthene	18
C4-dibenzothiophenes	<10	Benzo(k)fluoranthene	29
Phenanthrene	690	Indeno(1,2,3-cd)pyrene	23
Anthracene	66	Dibenzo(a,h)anthracene	<10
C1-phenanthrenes/anthracenes	1,700	Benzo(g,h,i)perylene	34
C2-phenanthrenes/anthracenes	1,400		

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	CPT-19	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/06/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/07/02	Lab ID:	202033-03
Date Analyzed:	02/08/02	Data File:	020815.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	109	35	114
2-Fluorobiphenyl	108	43	116
Terphenyl-d14	100	33	141

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Naphthalene	1,000	C3-phenanthrenes/anthracenes	570
C1-naphthalenes	3,300	C4-phenanthrenes/anthracenes	<10
C2-naphthalenes	5,600	Fluoranthene	16
C3-naphthalenes	5,000	Pyrene	36
C4-naphthalenes	2,800	C1-fluoranthenes/pyrenes	69
Biphenyl	190	C2-fluoranthenes/pyrenes	<10
Acenaphthylene	<10	C3-fluoranthenes/pyrenes	<10
Acenaphthene	66	Benz(a)anthracene	<10
Dibenzofuran	140	Chrysene	<10
Fluorene	380	C1-chrysenes	11
C1-fluorenes	850	C2-chrysenes	<10
C2-fluorenes	1,100	C3-chrysenes	<10
C3-fluorenes	640	C4-chrysenes	<10
Dibenzothiophene	210	Benzo(e)pyrene	<10
C1-dibenzothiophenes	600	Benzo(a)pyrene	<10
C2-dibenzothiophenes	650	Perylene	<10
C3-dibenzothiophenes	280	Benzo(b)fluoranthene	<10
C4-dibenzothiophenes	<10	Benzo(k)fluoranthene	<10
Phenanthrene	820	Indeno(1,2,3-cd)pyrene	<10
Anthracene	<10	Dibenzo(a,h)anthracene	<10
C1-phenanthrenes/anthracenes	1,800	Benzo(g,h,i)perylene	<10
C2-phenanthrenes/anthracenes	1,400		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	CJRS-1	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/06/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/07/02	Lab ID:	202033-04
Date Analyzed:	02/08/02	Data File:	020816.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	79	35	114
2-Fluorobiphenyl	82	43	116
Terphenyl-d14	128	33	141

Compounds:	Concentration ug/g (ppm)
Naphthalene	<10
C1-naphthalenes	<10
C2-naphthalenes	22
C3-naphthalenes	43
C4-naphthalenes	<10
Biphenyl	<10
Acenaphthylene	<10
Acenaphthene	<10
Dibenzofuran	<10
Fluorene	<10
C1-fluorenes	15
C2-fluorenes	17
C3-fluorenes	15
Dibenzothiophene	<10
C1-dibenzothiophenes	<10
C2-dibenzothiophenes	<10
C3-dibenzothiophenes	<10
C4-dibenzothiophenes	<10
Phenanthrene	10
Anthracene	<10
C1-phenanthrenes/anthracenes	24
C2-phenanthrenes/anthracenes	43

Compounds:	Concentration ug/g (ppm)
C3-phenanthrenes/anthracenes	24
C4-phenanthrenes/anthracenes	<10
Fluoranthene	<10
Pyrene	20
C1-fluoranthenes/pyrenes	36
C2-fluoranthenes/pyrenes	<10
C3-fluoranthenes/pyrenes	<10
Benz(a)anthracene	<10
Chrysene	<10
C1-chrysenes	<10
C2-chrysenes	<10
C3-chrysenes	<10
C4-chrysenes	<10
Benzo(e)pyrene	<10
Benzo(a)pyrene	<10
Perylene	<10
Benzo(b)fluoranthene	<10
Benzo(k)fluoranthene	<10
Indeno(1,2,3-cd)pyrene	<10
Dibenzo(a,h)anthracene	<10
Benzo(g,h,i)perylene	<10

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	CPT-30	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/06/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/07/02	Lab ID:	202033-05
Date Analyzed:	02/08/02	Data File:	020817.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	94	35	114
2-Fluorobiphenyl	98	43	116
Terphenyl-d14	101	33	141

Compounds:	Concentration ug/g (ppm)
Naphthalene	1,200
C1-naphthalenes	3,700
C2-naphthalenes	5,700
C3-naphthalenes	4,600
C4-naphthalenes	2,300
Biphenyl	350
Acenaphthylene	<10
Acenaphthene	73
Dibenzofuran	210
Fluorene	340
C1-fluorenes	750
C2-fluorenes	880
C3-fluorenes	400
Dibenzothiophene	270
C1-dibenzothiophenes	610
C2-dibenzothiophenes	550
C3-dibenzothiophenes	230
C4-dibenzothiophenes	<10
Phenanthrene	700
Anthracene	<10
C1-phenanthrenes/anthracenes	1,200
C2-phenanthrenes/anthracenes	820

Compounds:	Concentration ug/g (ppm)
C3-phenanthrenes/anthracenes	270
C4-phenanthrenes/anthracenes	<10
Fluoranthene	<10
Pyrene	40
C1-fluoranthenes/pyrenes	54
C2-fluoranthenes/pyrenes	<10
C3-fluoranthenes/pyrenes	<10
Benz(a)anthracene	<10
Chrysene	<10
C1-chrysenes	<10
C2-chrysenes	<10
C3-chrysenes	<10
C4-chrysenes	<10
Benzo(e)pyrene	<10
Benzo(a)pyrene	<10
Perylene	<10
Benzo(b)fluoranthene	<10
Benzo(k)fluoranthene	<10
Indeno(1,2,3-cd)pyrene	<10
Dibenzo(a,h)anthracene	<10
Benzo(g,h,i)perylene	<10

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	Method Blank	Client:	Innovative Technical Solutions, Inc.
Date Received:	Not Applicable	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/07/02	Lab ID:	mb 02-165
Date Analyzed:	02/08/02	Data File:	020811.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	103	35	114
2-Fluorobiphenyl	108	43	116
Terphenyl-d14	117	33	141

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Naphthalene	<10	C3-phenanthrenes/anthracenes	<10
C1-naphthalenes	<10	C4-phenanthrenes/anthracenes	<10
C2-naphthalenes	<10	Fluoranthene	<10
C3-naphthalenes	<10	Pyrene	<10
C4-naphthalenes	<10	C1-fluoranthenes/pyrenes	<10
Biphenyl	<10	C2-fluoranthenes/pyrenes	<10
Acenaphthylene	<10	C3-fluoranthenes/pyrenes	<10
Acenaphthene	<10	Benz(a)anthracene	<10
Dibenzofuran	<10	Chrysene	<10
Fluorene	<10	C1-chrysenes	<10
C1-fluorenes	<10	C2-chrysenes	<10
C2-fluorenes	<10	C3-chrysenes	<10
C3-fluorenes	<10	C4-chrysenes	<10
Dibenzothiophene	<10	Benzo(e)pyrene	<10
C1-dibenzothiophenes	<10	Benzo(a)pyrene	<10
C2-dibenzothiophenes	<10	Perylene	<10
C3-dibenzothiophenes	<10	Benzo(b)fluoranthene	<10
C4-dibenzothiophenes	<10	Benzo(k)fluoranthene	<10
Phenanthrene	<10	Indeno(1,2,3-cd)pyrene	<10
Anthracene	<10	Dibenzo(a,h)anthracene	<10
C1-phenanthrenes/anthracenes	<10	Benzo(g,h,i)perylene	<10
C2-phenanthrenes/anthracenes	<10		

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/11/02
Date Analyzed: 02/12/02

RESULTS FROM THE ANALYSIS OF PRODUCT SAMPLES FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Cd	Cu	Pb	Ni	Zn
CPT-20 202033-01	<1.0	<1.0	<2.0	<1.0	<1.0
CPT-14 202033-02	<1.0	4.4	14	7.2	12
CPT-19 202033-03	<1.0	3.4	<2.0	<1.0	<1.0
CJRS-1 202033-04	<1.0	2.9	<2.0	<1.0	77
CPT-30 202033-05	<1.0	<1.0	<2.0	<1.0	2.8
Method Blank	<1.0	<1.0	<1.0	<2.0	<1.0

Cd Cadmium
Cu Copper
Pb Lead
Ni Nickel
Zn Zinc

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR VOLATILES BY EPA METHOD 8260B

Laboratory Code: 202033-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
1,1-Dichloroethene	µg/g (ppm)	<100	<100	nm
Benzene	µg/g (ppm)	<100	<100	nm
Trichloroethene	µg/g (ppm)	<100	<100	nm
Toluene	µg/g (ppm)	<100	<100	nm
Chlorobenzene	µg/g (ppm)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
1,1-Dichloroethene	µg/g (ppm)	500	120	53-161
Benzene	µg/g (ppm)	500	108	74-129
Trichloroethene	µg/g (ppm)	500	96	68-125
Toluene	µg/g (ppm)	500	111	65-131
Chlorobenzene	µg/g (ppm)	500	104	81-119

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR ETHERS USING EPA METHOD 8260B

Laboratory Code: 202033-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Methyl t-butyl ether (MTBE)	µg/g (ppm)	<100	<100	nm
Diisopropyl ether (DIPE)	µg/g (ppm)	<100	<100	nm
Ethyl t-butyl ether (ETBE)	µg/g (ppm)	<100	<100	nm
t-Amyl methyl ether (TAME)	µg/g (ppm)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	µg/g (ppm)	500	104	65-135
Diisopropyl ether (DIPE)	µg/g (ppm)	500	125	65-135
Ethyl t-butyl ether (ETBE)	µg/g (ppm)	500	97	65-135
t-Amyl methyl ether (TAME)	µg/g (ppm)	500	100	65-135

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15

QUALITY ASSURANCE RESULTS FROM TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Laboratory Code: 202033-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Cadmium	mg/L (ppm)	<1.0	<1.0	nm	0-20
Copper	mg/L (ppm)	<1.0	<1.0	nm	0-20
Lead	mg/L (ppm)	<2.0	<2.0	nm	0-20
Nickel	mg/L (ppm)	<1.0	<1.0	nm	0-20
Zinc	mg/L (ppm)	<1.0	<1.0	nm	0-20

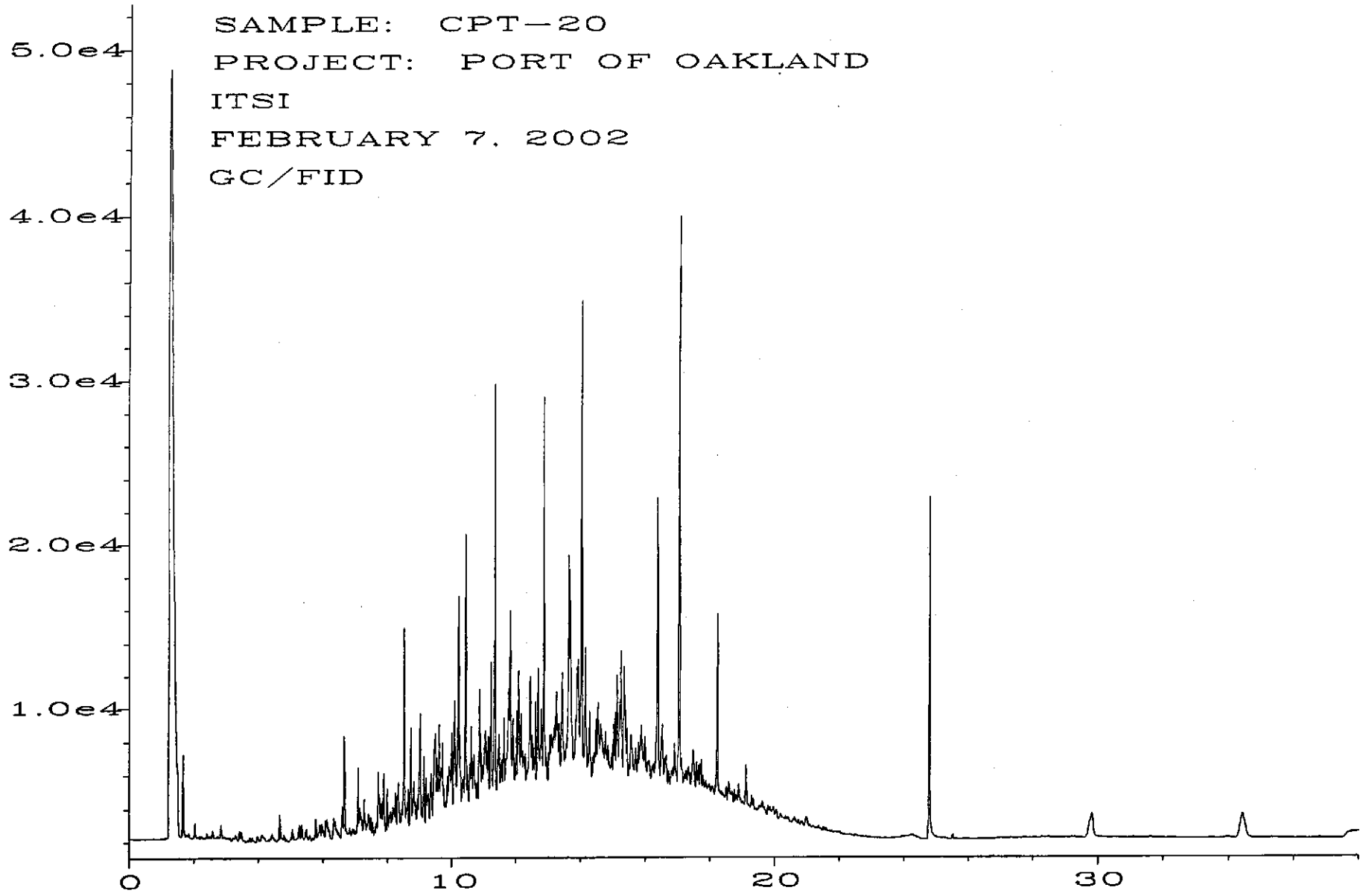
Laboratory Code: 202033-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Cadmium	mg/L (ppm)	50	<1.0	111	109	50-150	2
Copper	mg/L (ppm)	50	<1.0	115	112	50-150	3
Lead	mg/L (ppm)	100	<2.0	106	105	50-150	1
Nickel	mg/L (ppm)	100	<1.0	110	104	50-150	6
Zinc	mg/L (ppm)	50	<1.0	111	112	50-150	1

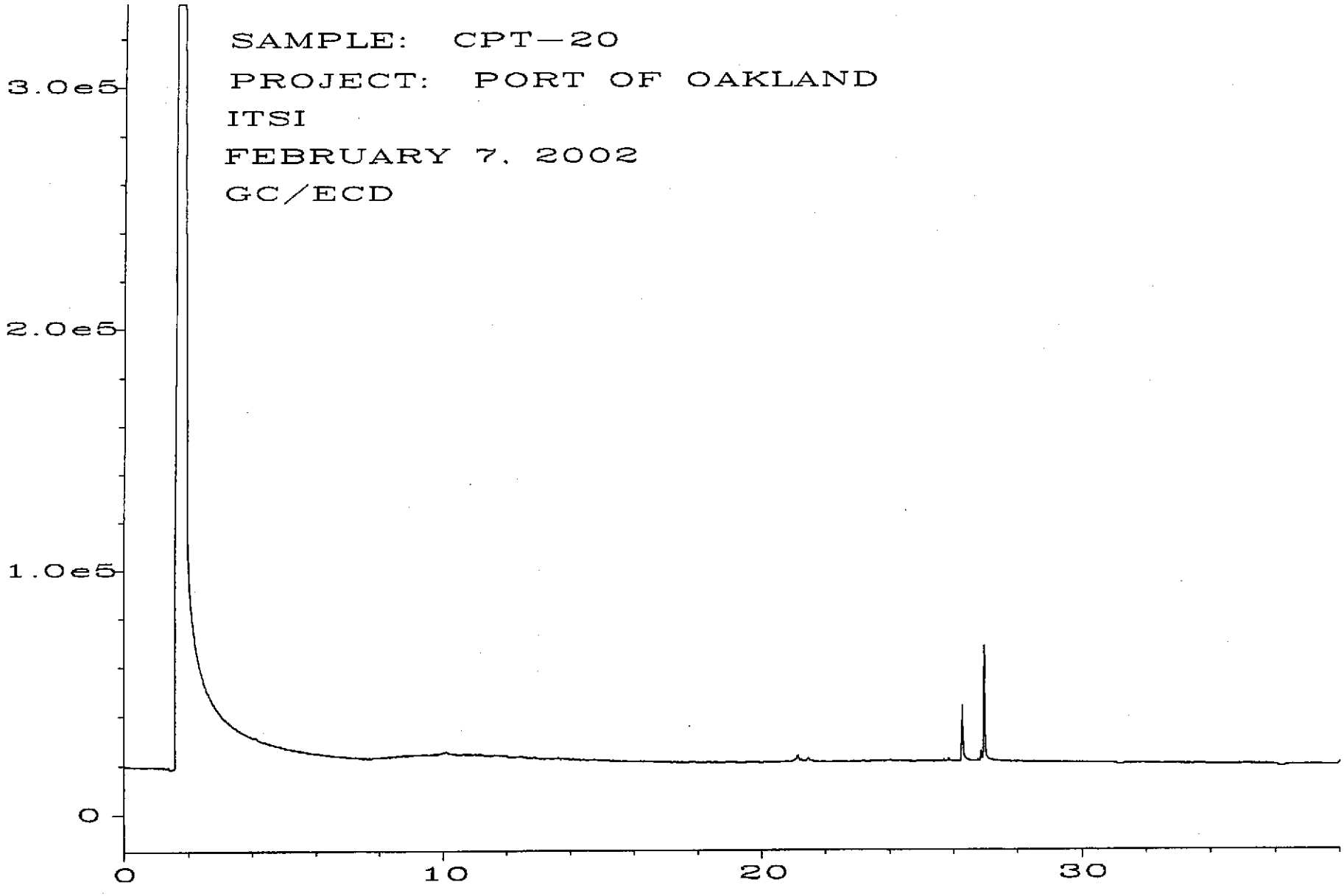
Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Cadmium	mg/L (ppm)	50	106	101	80-120	5
Copper	mg/L (ppm)	50	101	99	80-120	2
Lead	mg/L (ppm)	100	104	101	80-120	3
Nickel	mg/L (ppm)	100	103	96	80-120	7
Zinc	mg/L (ppm)	50	106	97	80-120	9

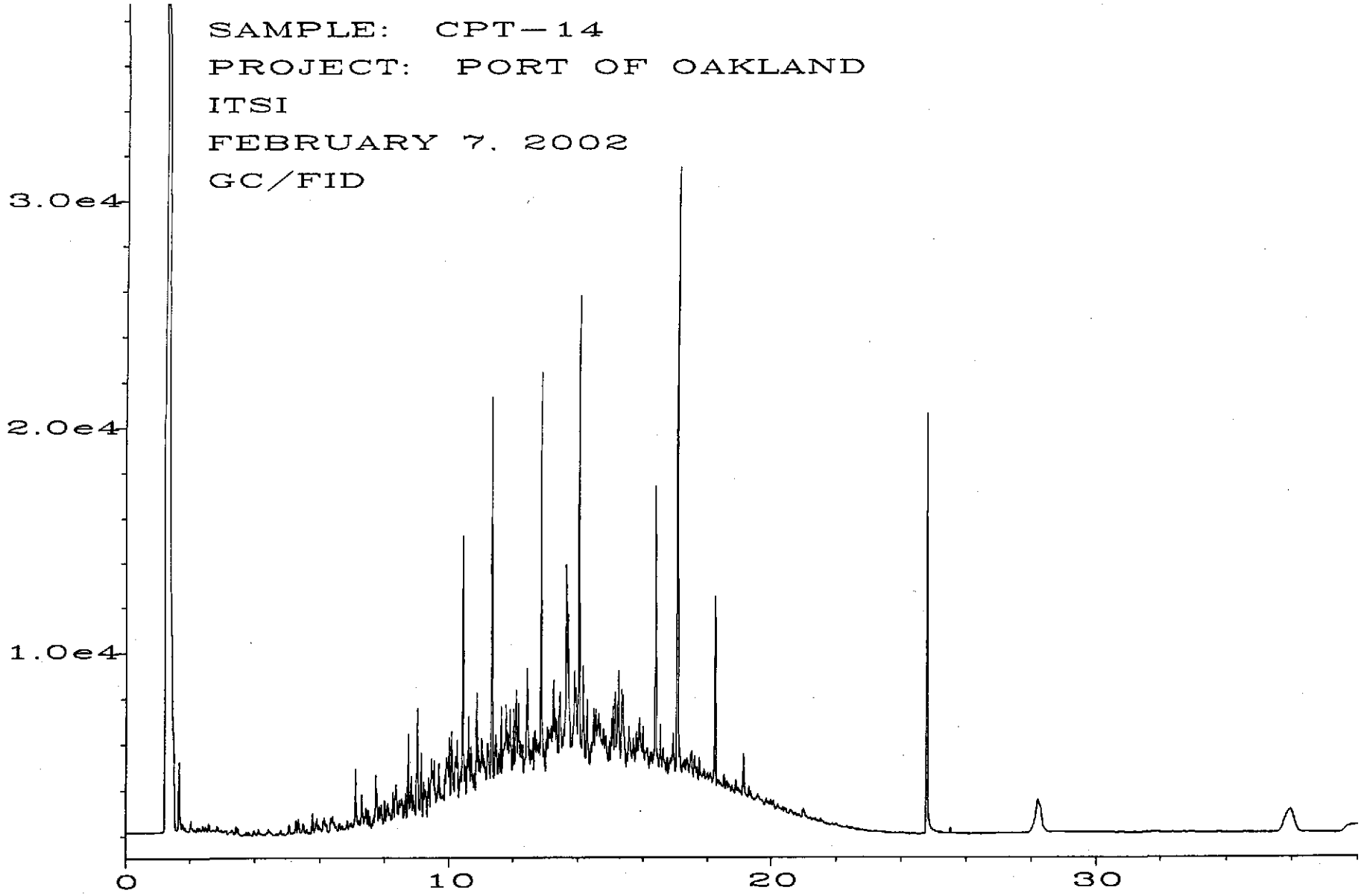
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.



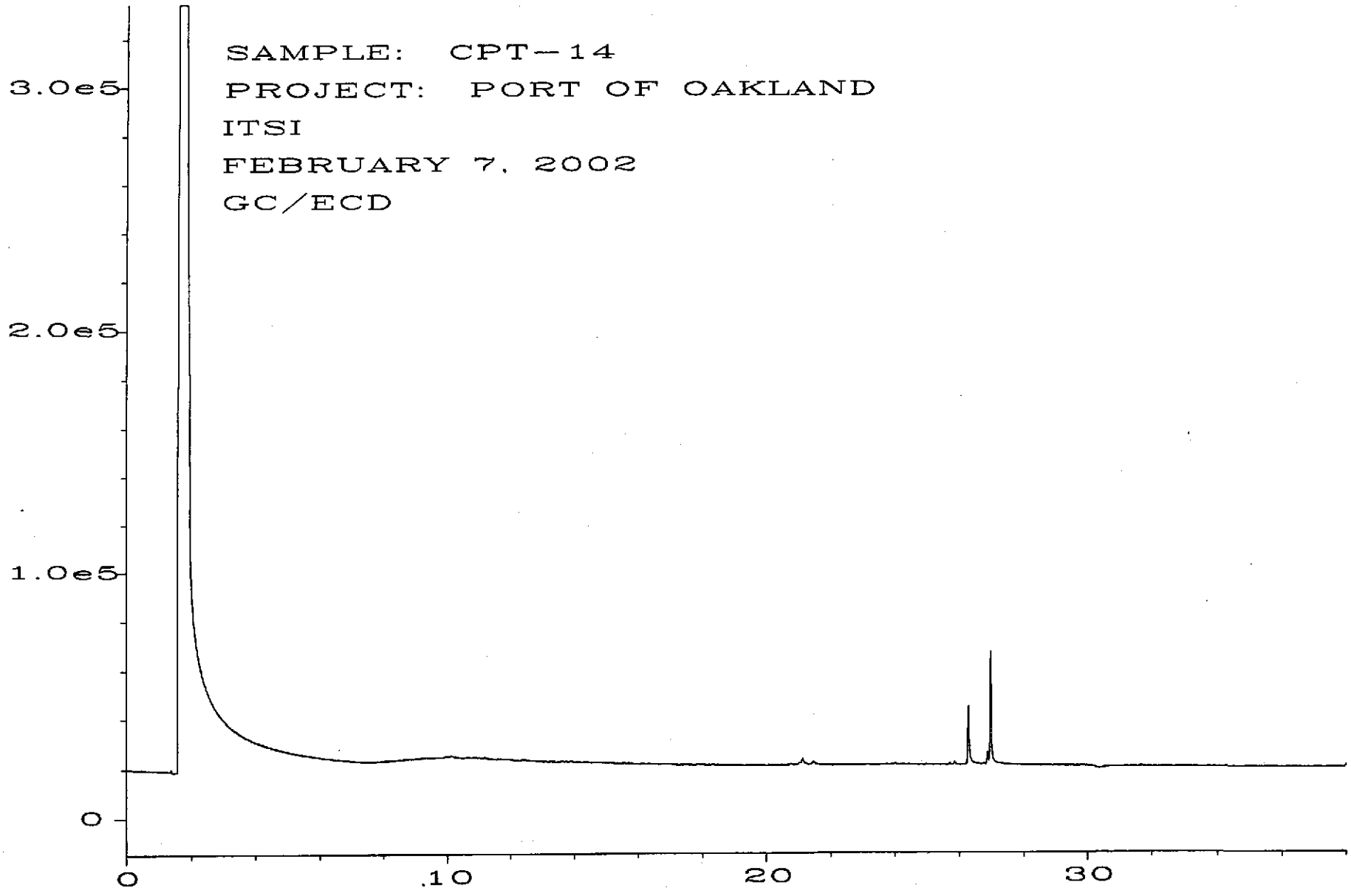
Sig. 1 in C:\HPCHEM\1\DATA\02-07-02\008F0201.D



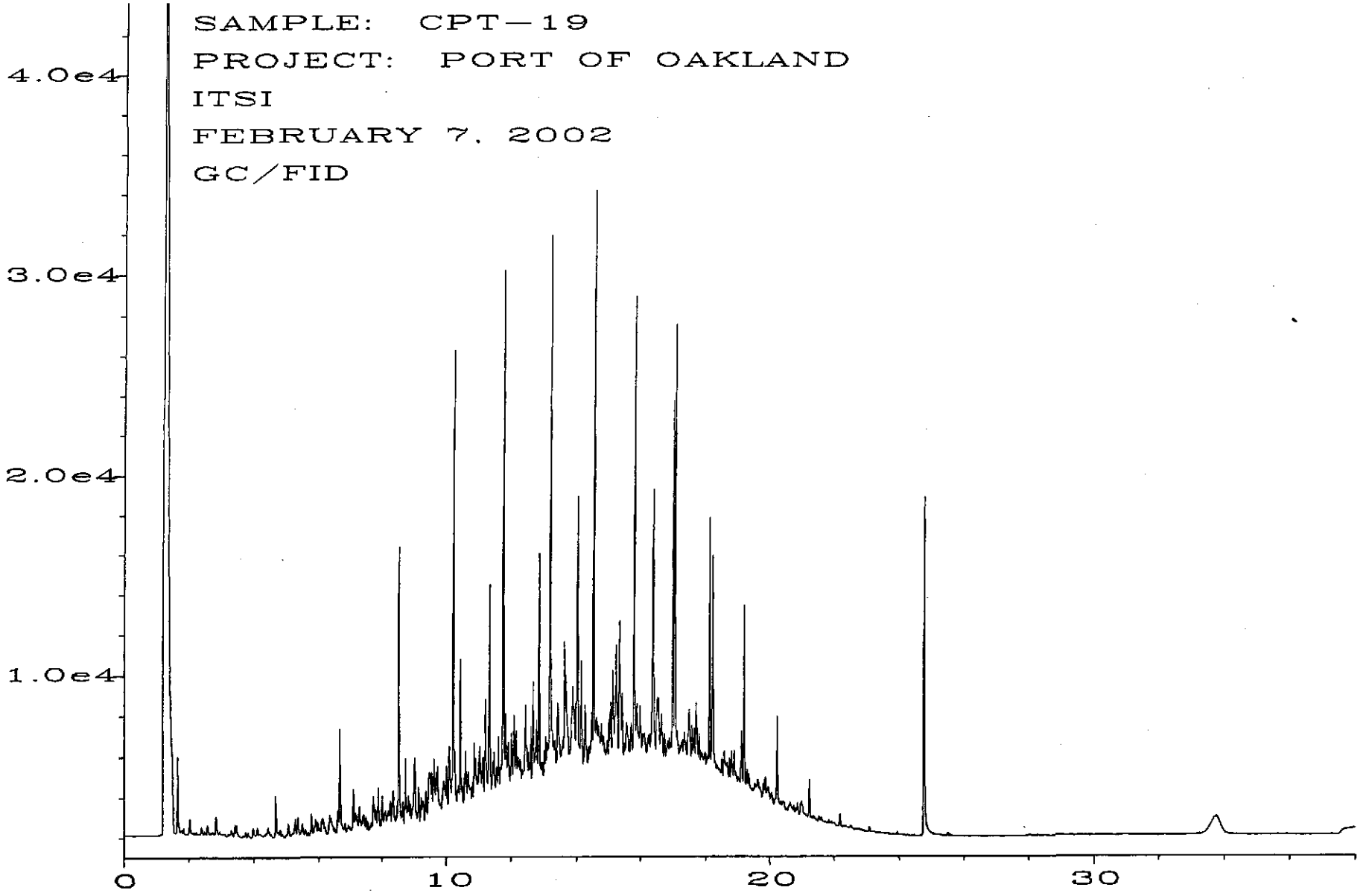
Sig. 2 in C:\HPCHEM\1\DATA\02-07-02\008R0201.D



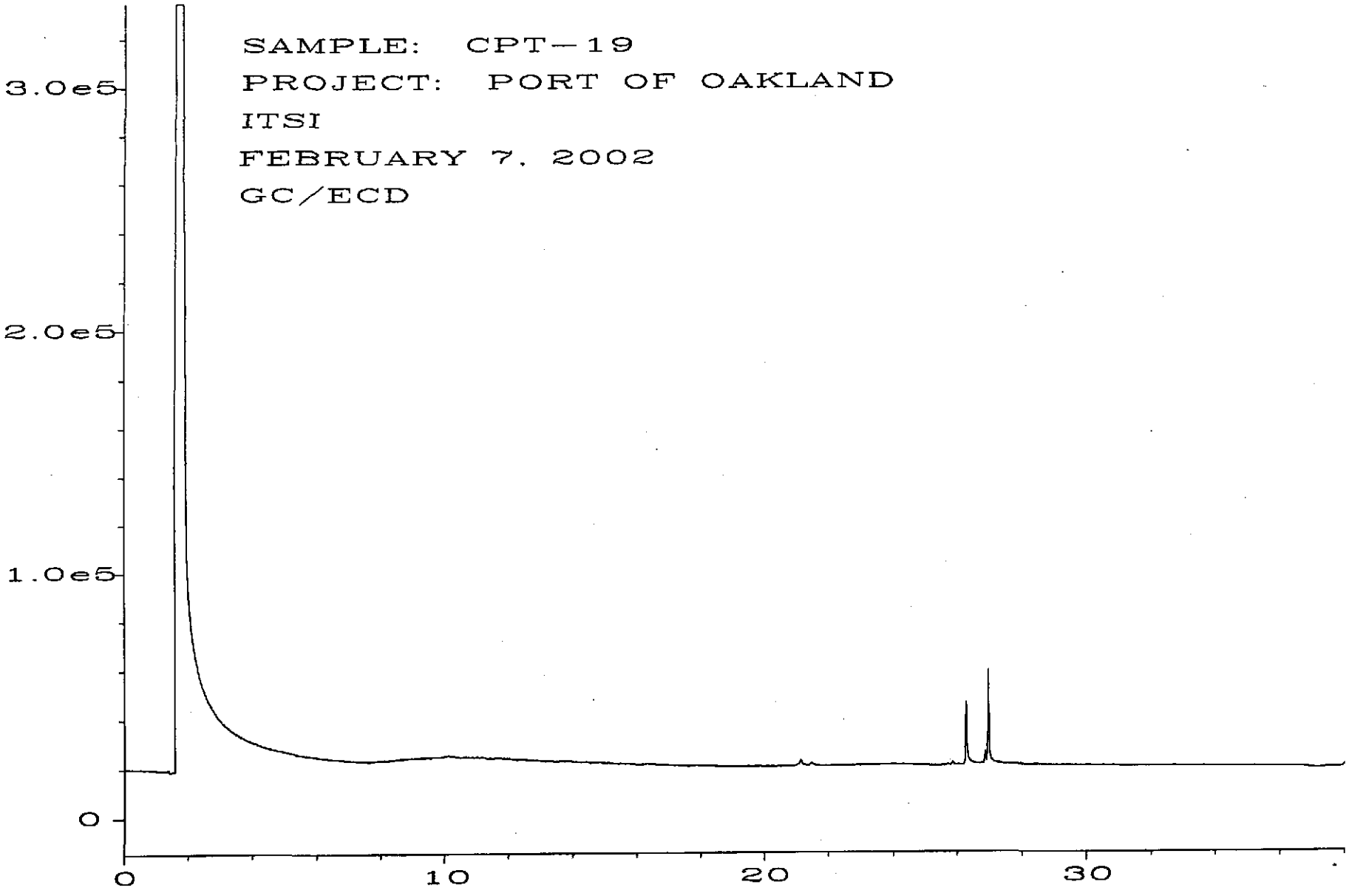
Sig. 1 in C:\HPCHEM\1\DATA\02-07-02\009F0201.D



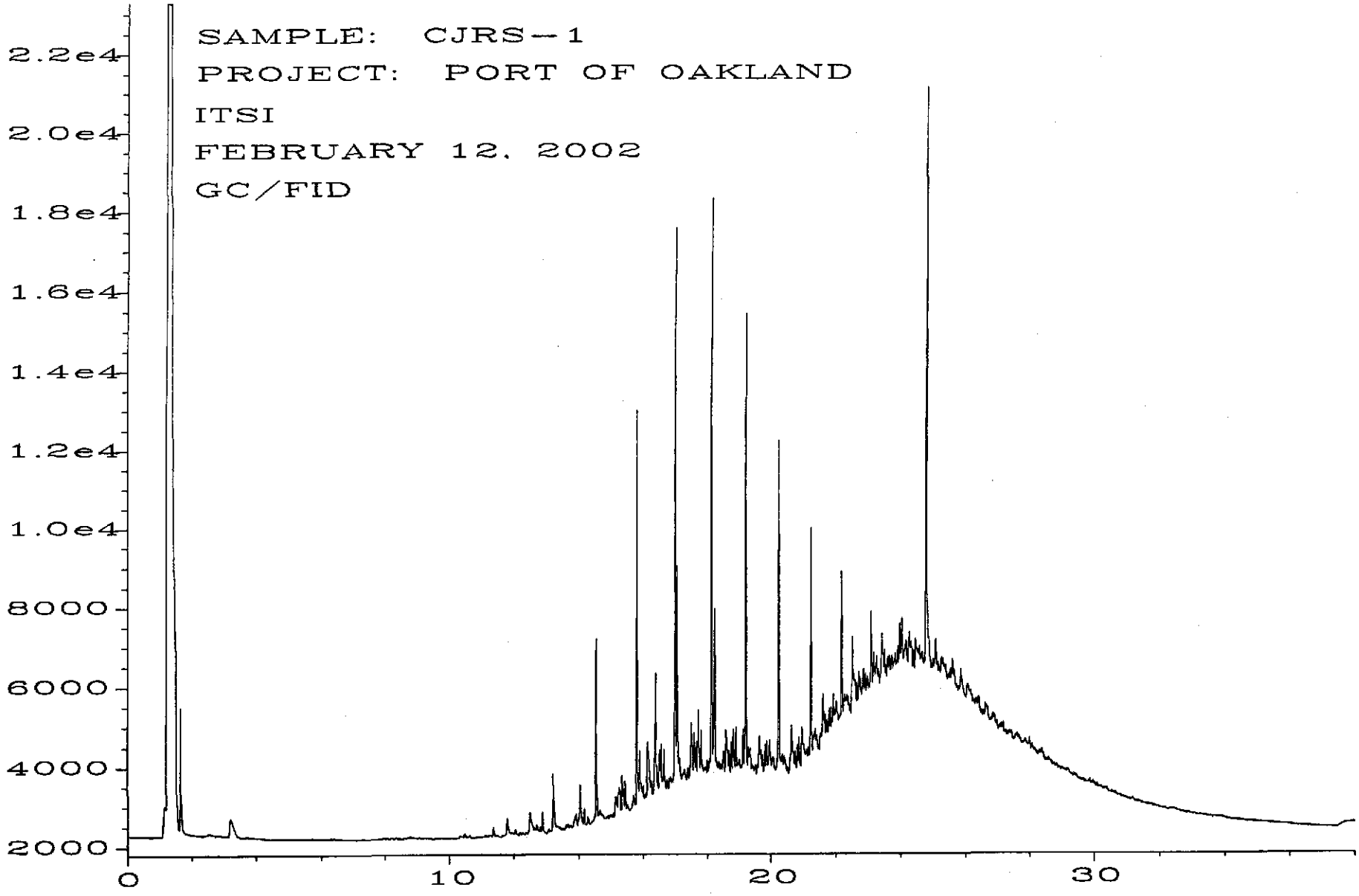
Sig. 2 in C:\HPCHEM\1\DATA\02-07-02\009R0201.D



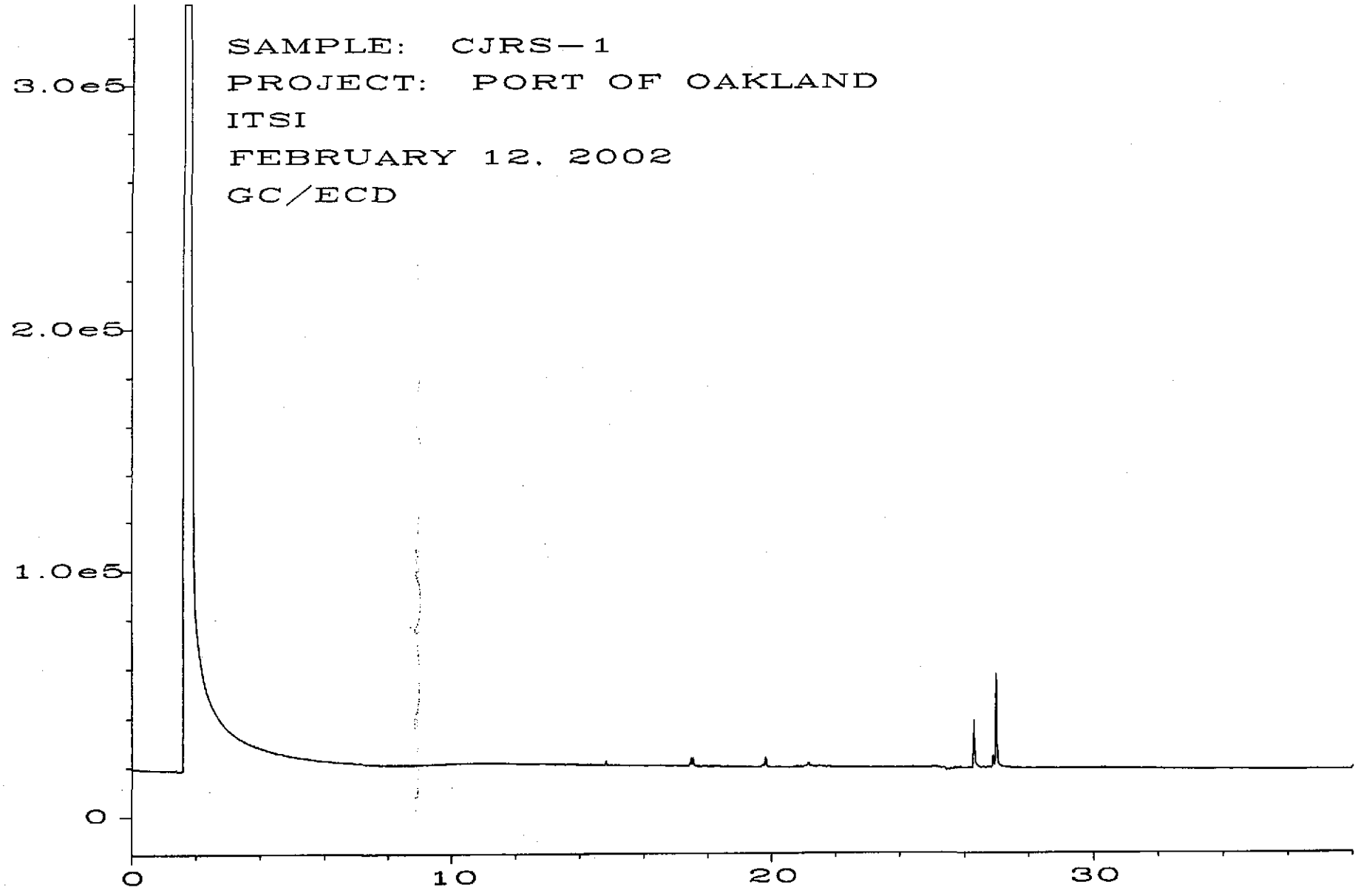
Sig. 1 in C:\HPCHEM\1\DATA\02-07-02\010F0201.D



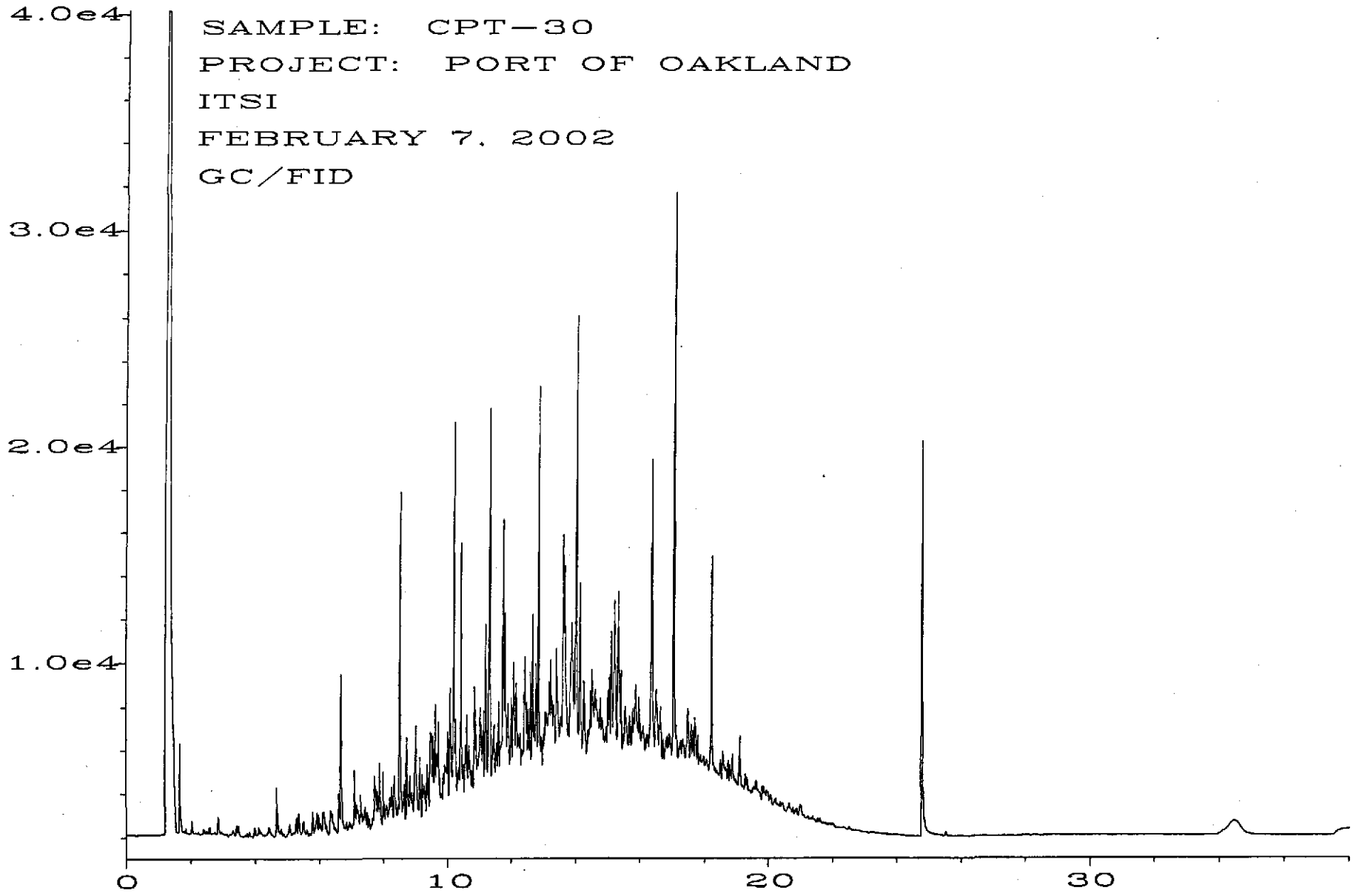
Sig. 2 in C:\HPCHEM\1\DATA\02-07-02\010R0201.D



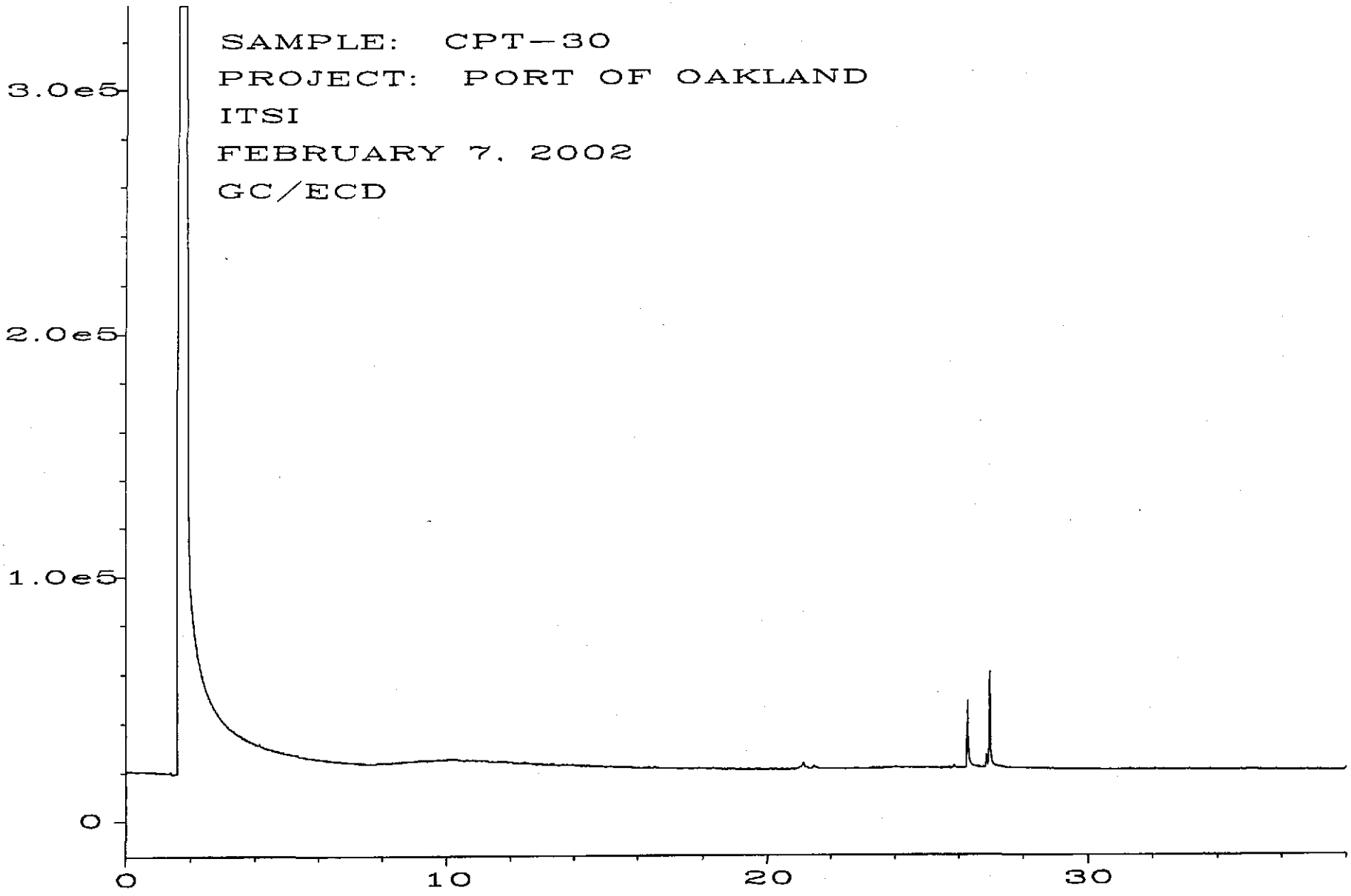
Sig. 1 in C:\HPCHEM\1\DATA\02-12-02\006F0201.D



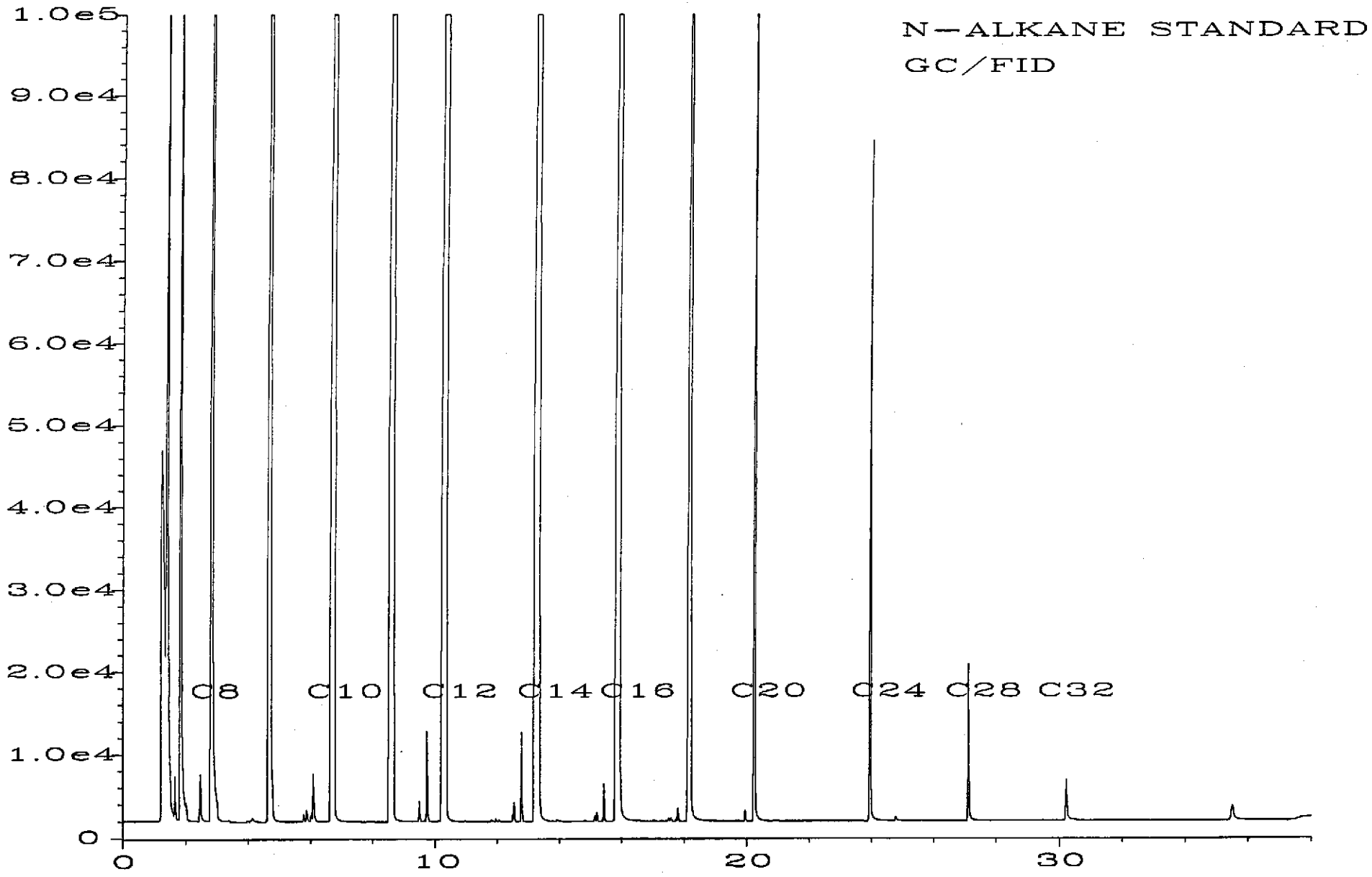
Sig. 2 in C:\HPCHEM\1\DATA\02-12-02\006R0201.D



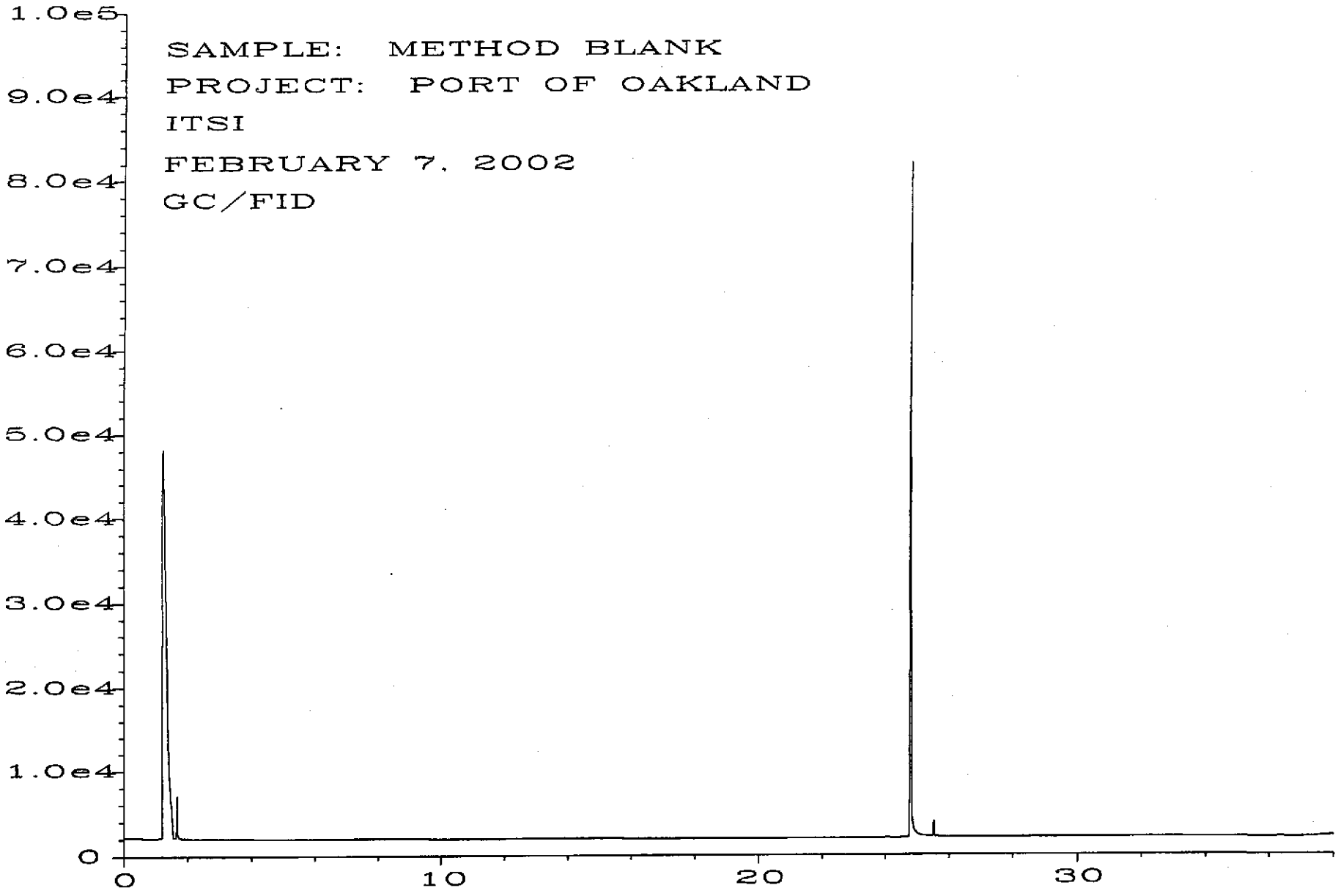
Sig. 1 in C:\HPCHEM\1\DATA\02-07-02\011F0201.D



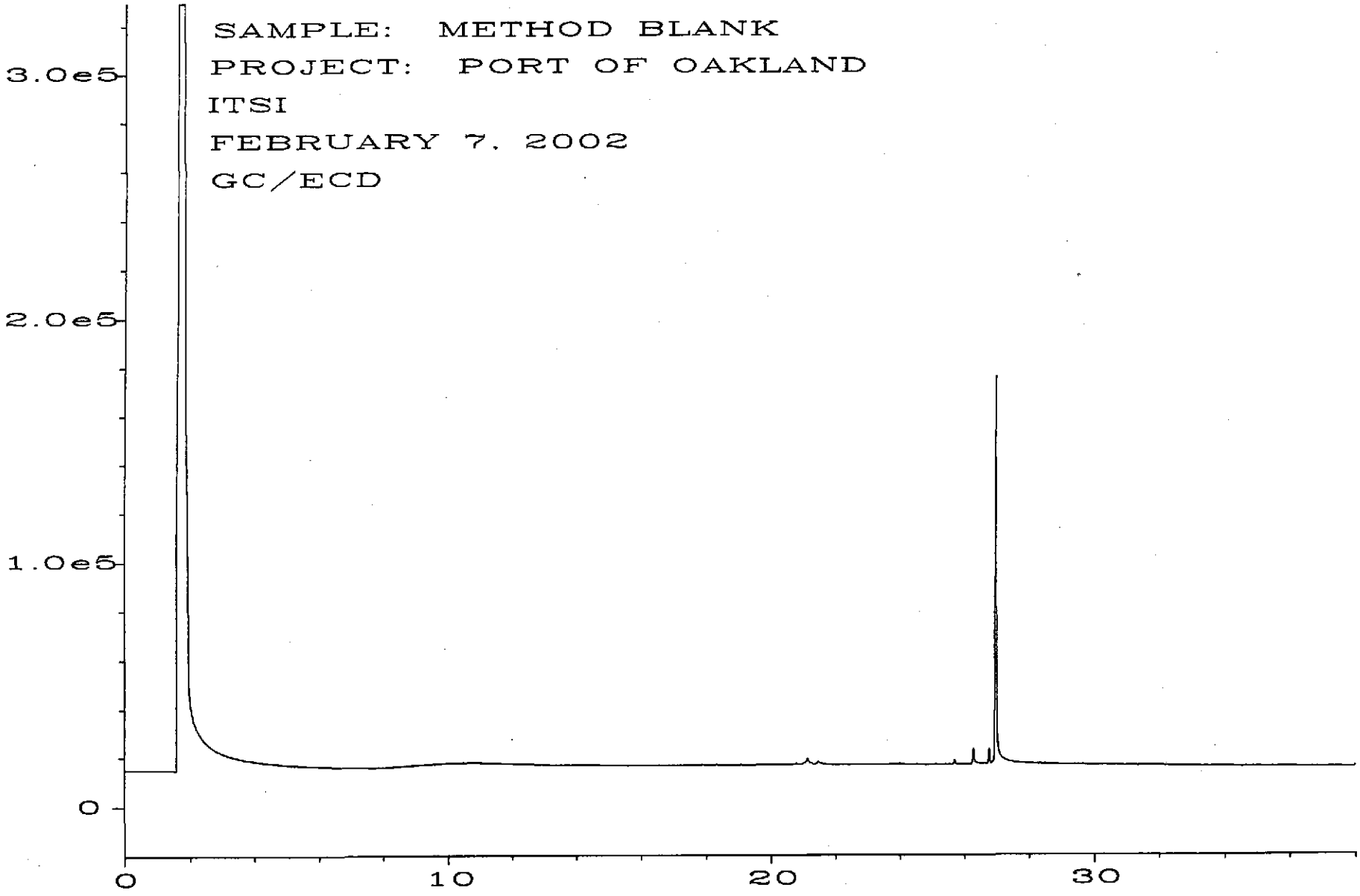
Sig. 2 in C:\HPCHEM\1\DATA\02-07-02\011R0201.D



Sig. 1 in C:\HPCHEM\1\DATA\02-07-02\100F0601.D

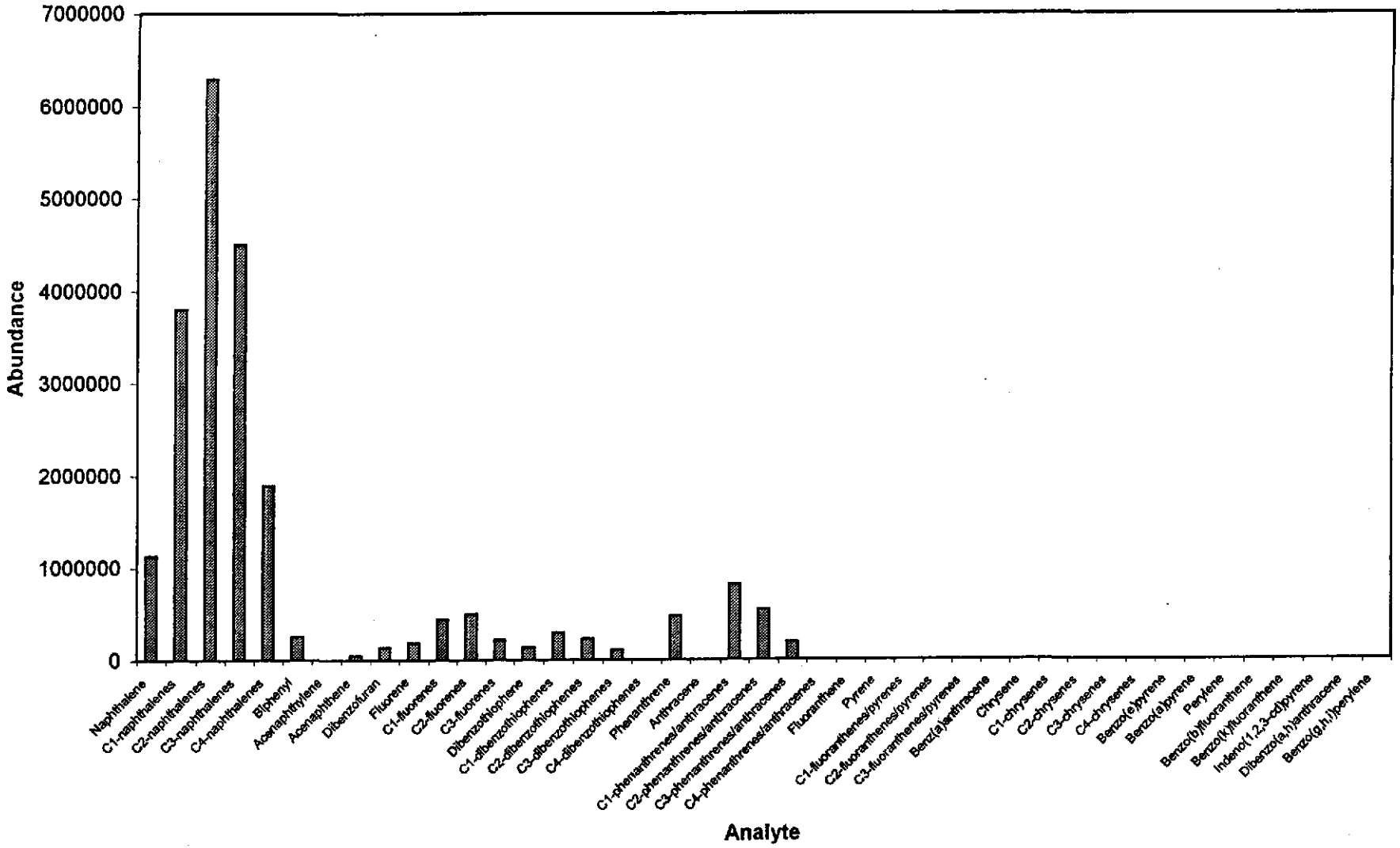


Sig. 1 in C:\HPCHEM\1\DATA\02-07-02\002F0201.D

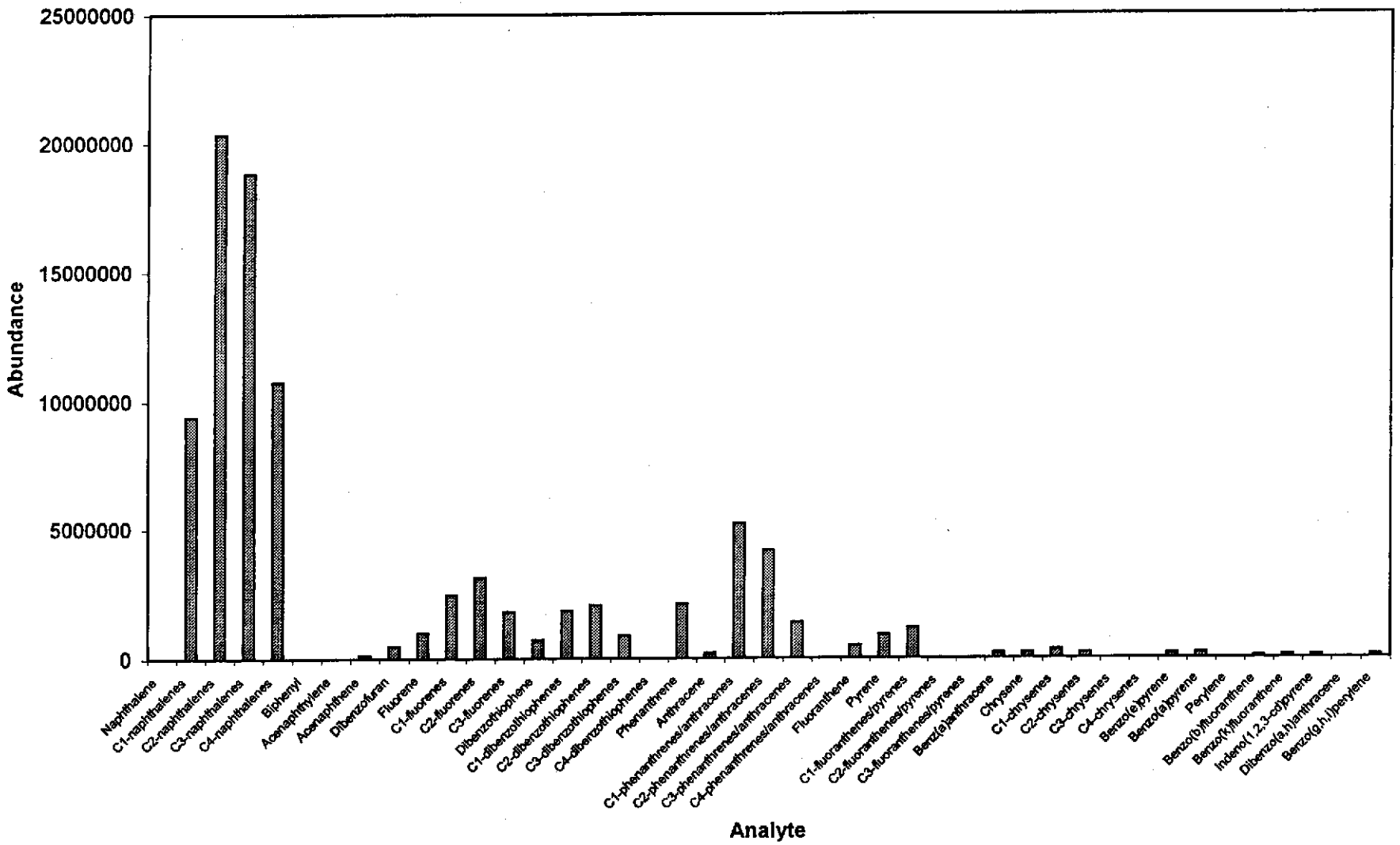


Sig. 2 in C:\HPCHEM\1\DATA\02-07-02\002R0201.D

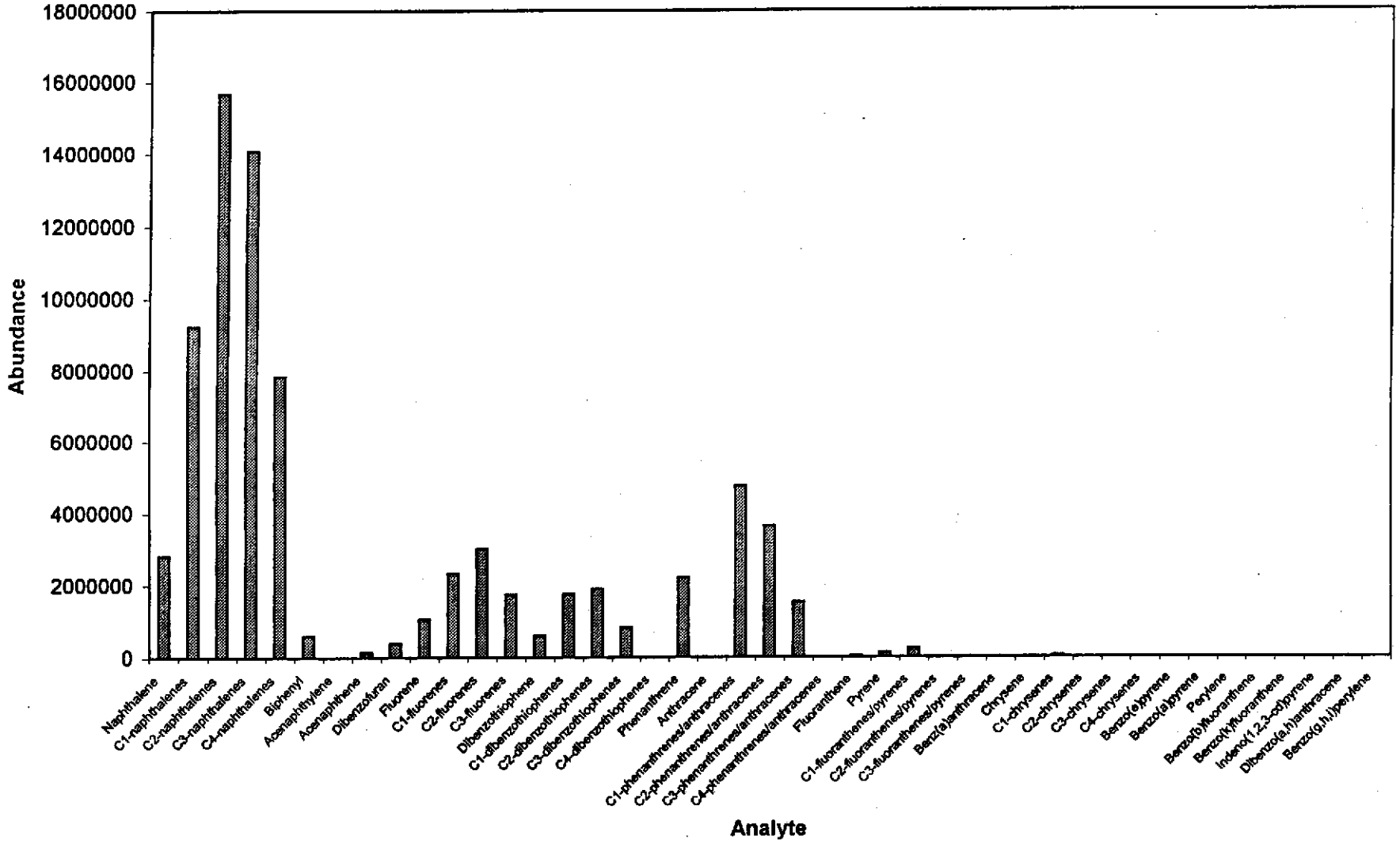
Sample ID: CPT-20



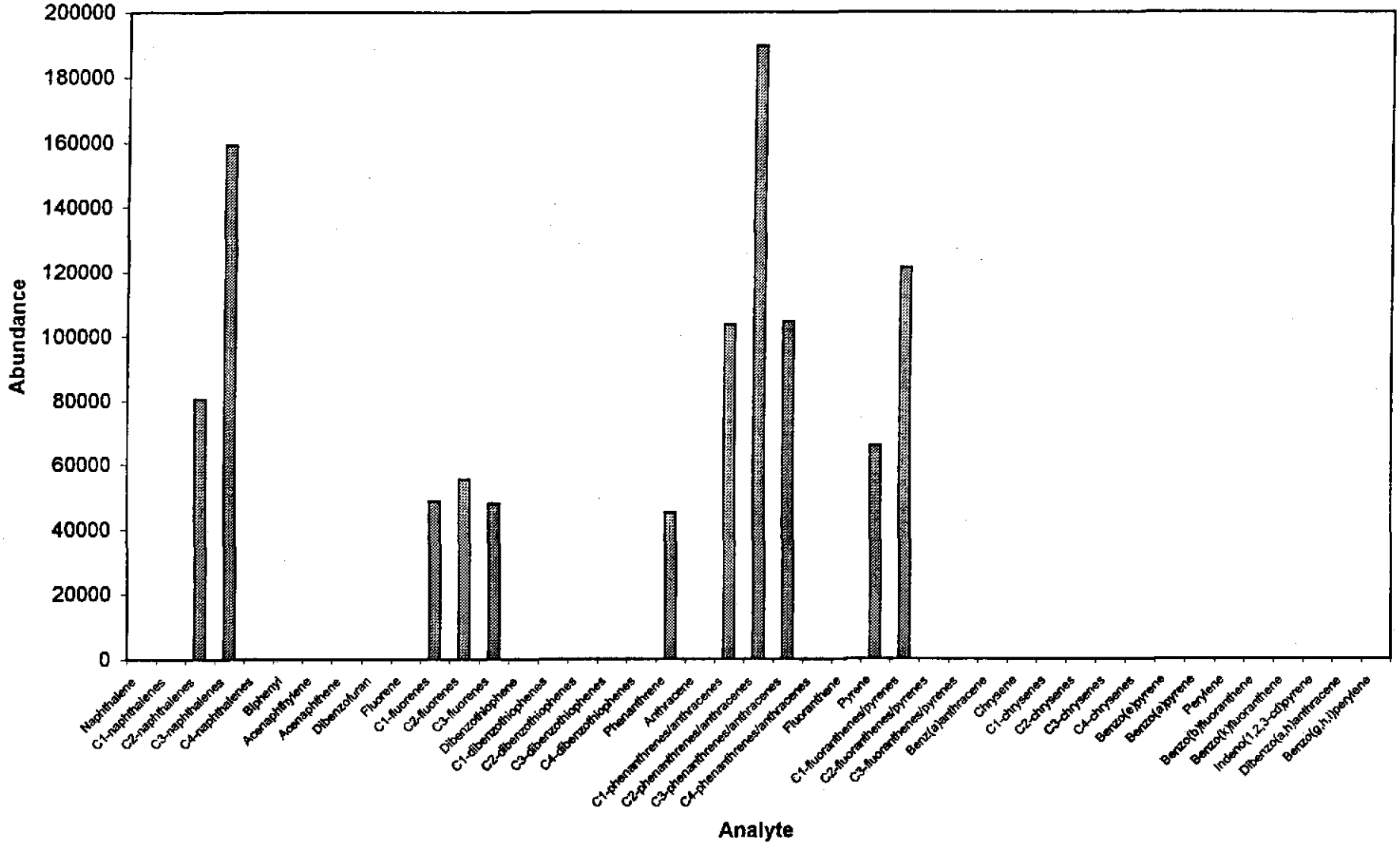
Sample ID: CPT-14



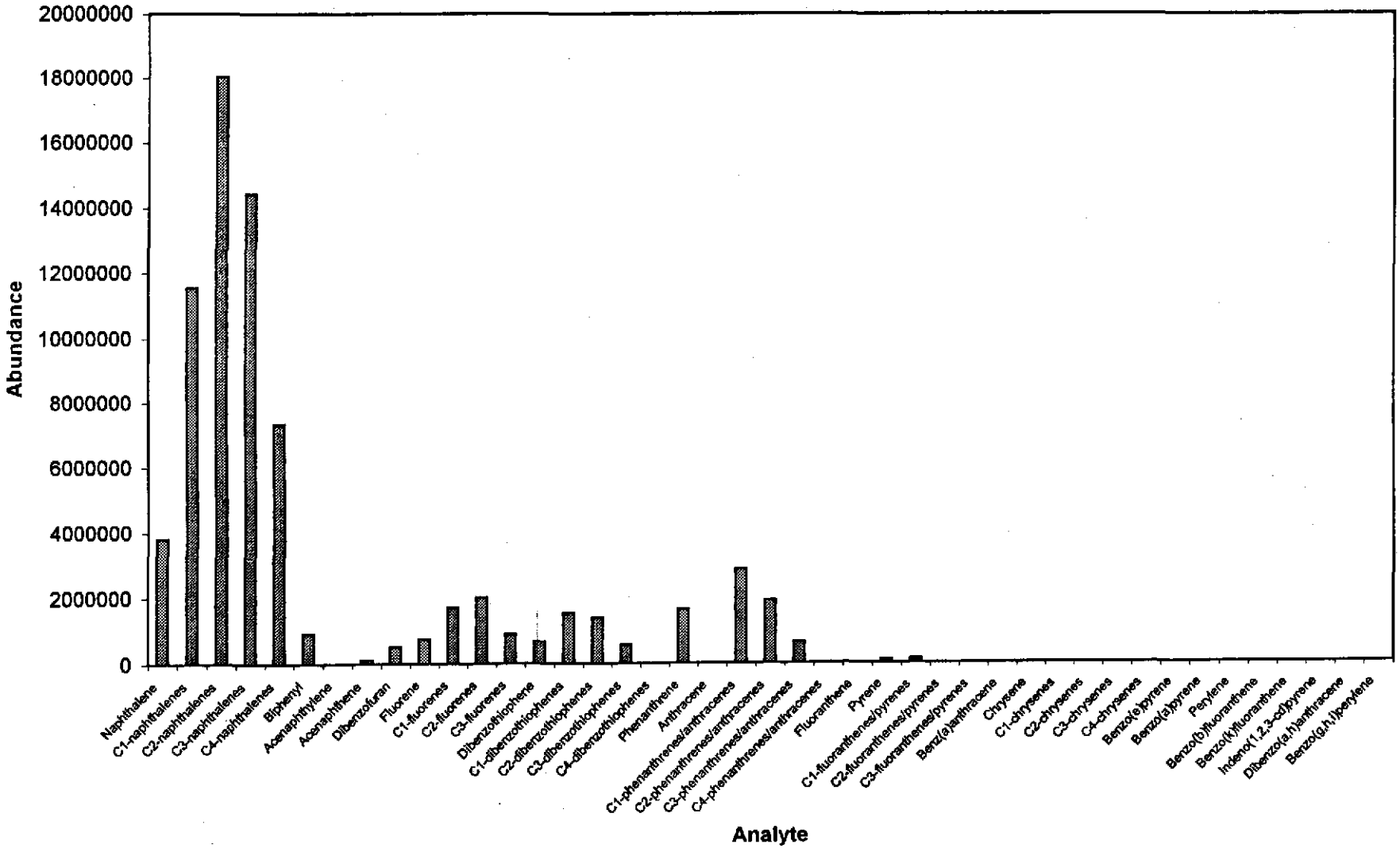
Sample ID: CPT-19



Sample ID:CJRS-1



Sample ID: CPT-30



Submission #: 2002-02-0326

Date: February 26, 2002

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com
CA DHS ELAP#1094

Innovative Technical Solutions, Inc

2730 Shadelands Drive
Walnut Creek, CA 94598

Attn: Ms. Rachel Hess

Project: 00-152.15
Port of Oakland

Dear Ms. Hess,

Attached is our report for your samples received on Tuesday February 19, 2002
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after April 5, 2002 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@chromalab.com

Sincerely,

Surinder Sidhu.

Surinder Sidhu
Project Manager

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Innovative Technical Solutions, Inc	✉ 2730 Shadelands Drive Walnut Creek, CA 94598
Attn: Rachel Hess	Phone: (925) 256-8898 Fax: (925) 256-8998
00-152.15	Project: Port of Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
PZ-B	Water	02/19/2002 09:00	1
PZ-A	Water	02/19/2002 11:00	2
PZ-D	Water	02/19/2002 11:30	3
PZ-F	Water	02/19/2002 13:05	4
PZ-C	Water	02/19/2002 14:00	5
DUP-A	Water	02/19/2002 14:40	6
PZ-E	Water	02/19/2002 15:15	7

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3510/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-E	Lab Sample ID:	2002-02-0326-001
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/20/2002 13:11
Sampled:	02/19/2002 09:00	QC-Batch:	2002/02/20-03.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	570	50	ug/L	1.00	02/23/2002 04:52	ndp
Motor Oil	670	500	ug/L	1.00	02/23/2002 04:52	
Surrogate(s)						
o-Terphenyl	88.2	60-130	%	1.00	02/23/2002 04:52	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3510/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-A	Lab Sample ID:	2002-02-0326-002
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/20/2002 13:11
Sampled:	02/19/2002 11:00	QC-Batch:	2002/02/20-03.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	700	50	ug/L	1.00	02/23/2002 05:29	ndp
Motor Oil	ND	500	ug/L	1.00	02/23/2002 05:29	
Surrogate(s)						
o-Terphenyl	75.8	60-130	%	1.00	02/23/2002 05:29	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3510/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-D**	Lab Sample ID:	2002-02-0326-003
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/20/2002 13:11
Sampled:	02/19/2002 11:30	QC-Batch:	2002/02/20-03.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	2500	50	ug/L	1.00	02/23/2002 06:06	ndp
Motor Oil	ND	500	ug/L	1.00	02/23/2002 06:06	
Surrogate(s)						
o-Terphenyl	91.2	60-130	%	1.00	02/23/2002 06:06	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3510/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-F	Lab Sample ID:	2002-02-0326-004
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/20/2002 13:11
Sampled:	02/19/2002 13:05	QC-Batch:	2002/02/20-03.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	110000	1000	ug/L	20.00	02/25/2002 06:03	ndp
Motor Oil	ND	10000	ug/L	20.00	02/25/2002 06:03	
Surrogate(s)						
o-Terphenyl	NA	60-130	%	20.00	02/25/2002 06:03	sd

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3510/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-C**	Lab Sample ID:	2002-02-0326-005
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/20/2002 13:11
Sampled:	02/19/2002 14:00	QC-Batch:	2002/02/20-03.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	2200	50	ug/L	1.00	02/25/2002 09:57	ndp
Motor Oil	ND	500	ug/L	1.00	02/25/2002 09:57	
Surrogate(s)						
o-Terphenyl	95.7	60-130	%	1.00	02/25/2002 09:57	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3510/8015M

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**DUP-A**	Lab Sample ID:	2002-02-0326-006
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/20/2002 13:11
Sampled:	02/19/2002 14:40	QC-Batch:	2002/02/20-03.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	1200	50	ug/L	1.00	02/23/2002 07:58	ndp
Motor Oil	ND	500	ug/L	1.00	02/23/2002 07:58	
Surrogate(s)						
o-Terphenyl	66.4	60-130	%	1.00	02/23/2002 07:58	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

TEPH w/ Silica Gel Clean-up

Innovative Technical Solutions, Inc
Attn: Rachel Hess

Test Method: 8015M
Prep Method: 3510/8015M

Sample ID:	PZ-E	Lab Sample ID:	2002-02-0326-007
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/20/2002 13:11
Sampled:	02/19/2002 15:15	QC-Batch:	2002/02/20-03.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	4400	50	ug/L	1.00	02/23/2002 08:36	ndp
Motor Oil	ND	500	ug/L	1.00	02/23/2002 08:36	
Surrogate(s)						
o-Terphenyl	87.6	60-130	%	1.00	02/23/2002 08:36	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

TEPH w/ Silica Gel Clean-up

Batch QC report

Test Method: 8015M

Prep Method: 3510/8015 M

Method Blank	**Water**	**QC Batch # 2002/02/20-03.10**
MB: 2002/02/20-03.10-001		Date Extracted: 02/20/2002 13:11

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	02/23/2002 07:48	
Motor Oil	ND	500	ug/L	02/23/2002 07:48	
Surrogate(s)					
o-Terphenyl	98.1	60-130	%	02/23/2002 07:48	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

TEPH w/ Silica Gel Clean-up

Batch QC report

Test Method: 8015M Prep Method: 3510/8015M

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2002/02/20-03.10**

LCS: 2002/02/20-03.10-002 Extracted: 02/20/2002 13:11 Analyzed: 02/21/2002 20:20

LCSD: 2002/02/20-03.10-003 Extracted: 02/20/2002 13:11 Analyzed: 02/21/2002 20:59

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Diesel	1000	1170	1250	1250	80.0	93.6	15.7	60-130	25		
Surrogate(s)											
o-Terphenyl	19.9	21.4	20.0	20.0	99.7	107.1		60-130	0		

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

TEPH w/ Silica Gel Clean-up

Legend & Notes

Test Method: 8015M Prep Method: 3510/8015M

Analyte Flags

ndp

Hycrocarbon reported does not match the pattern of our Diesel standard

Analyte Flags

sd

Surrogate recovery not reportable due to required dilution.

Submission #: 2002-02-0326

Gas/BTEX Compounds by 8015M/8021

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Innovative Technical Solutions, Inc	✉ 2730 Shadelands Drive Walnut Creek, CA 94598
Attn: Rachel Hess	Phone: (925) 256-8898 Fax: (925) 256-8998
00-152.15	Project: Port of Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
PZ-B	Water	02/19/2002 09:00	1
PZ-A	Water	02/19/2002 11:00	2
PZ-D	Water	02/19/2002 11:30	3
PZ-F	Water	02/19/2002 13:05	4
PZ-C	Water	02/19/2002 14:00	5
DUP-A	Water	02/19/2002 14:40	6
PZ-E	Water	02/19/2002 15:15	7
TRIP BLANK	Water	02/19/2002 15:30	8

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8015M
8021B

Prep Method: 5030

Sample ID:	**PZ-B**	Lab Sample ID:	2002-02-0326-001
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/26/2002 12:07
Sampled:	02/19/2002 09:00	QC-Batch:	2002/02/26-01.01
Matrix:	*Water*		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	02/26/2002 12:07	
Benzene	ND	0.50	ug/L	1.00	02/26/2002 12:07	
Toluene	ND	0.50	ug/L	1.00	02/26/2002 12:07	
Ethyl benzene	ND	0.50	ug/L	1.00	02/26/2002 12:07	
Xylene(s)	ND	0.50	ug/L	1.00	02/26/2002 12:07	
MTBE	ND	5.0	ug/L	1.00	02/26/2002 12:07	
Surrogate(s)						
Trifluorotoluene	102.7	58-124	%	1.00	02/26/2002 12:07	
4-Bromofluorobenzene-FID	97.5	50-150	%	1.00	02/26/2002 12:07	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8015M
8021B

Prep Method: 5030

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-A**	Lab Sample ID:	2002-02-0326-002
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/26/2002 12:37
Sampled:	02/19/2002 11:00	QC-Batch:	2002/02/26-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	65	50	ug/L	1.00	02/26/2002 12:37	g
Benzene	ND	0.50	ug/L	1.00	02/26/2002 12:37	
Toluene	ND	0.50	ug/L	1.00	02/26/2002 12:37	
Ethyl benzene	ND	0.50	ug/L	1.00	02/26/2002 12:37	
Xylene(s)	ND	0.50	ug/L	1.00	02/26/2002 12:37	
MTBE	ND	5.0	ug/L	1.00	02/26/2002 12:37	
Surrogate(s)						
4-Bromofluorobenzene	100.0	50-150	%	1.00	02/26/2002 12:37	
4-Bromofluorobenzene-FID	102.6	50-150	%	1.00	02/26/2002 12:37	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8015M
8021B

Prep Method: 5030

Sample ID:	PZ-D	Lab Sample ID:	2002-02-0326-003
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/26/2002 13:07
Sampled:	02/19/2002 11:30	QC-Batch:	2002/02/26-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	760	50	ug/L	1.00	02/26/2002 13:07	
Benzene	49	0.50	ug/L	1.00	02/26/2002 13:07	
Toluene	2.6	0.50	ug/L	1.00	02/26/2002 13:07	
Ethyl benzene	21	0.50	ug/L	1.00	02/26/2002 13:07	
Xylene(s)	12	0.50	ug/L	1.00	02/26/2002 13:07	
MTBE	ND	5.0	ug/L	1.00	02/26/2002 13:07	
Surrogate(s)						
Trifluorotoluene	112.4	58-124	%	1.00	02/26/2002 13:07	
4-Bromofluorobenzene-FID	101.8	50-150	%	1.00	02/26/2002 13:07	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8015M
8021B

Prep Method: 5030

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-F**	Lab Sample ID:	2002-02-0326-004
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/25/2002 00:16
Sampled:	02/19/2002 13:05	QC-Batch:	2002/02/25-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	1000	500	ug/L	10.00	02/25/2002 00:16	
Benzene	20	5.0	ug/L	10.00	02/25/2002 00:16	
Toluene	ND	5.0	ug/L	10.00	02/25/2002 00:16	
Ethyl benzene	9.4	5.0	ug/L	10.00	02/25/2002 00:16	
Xylene(s)	10	5.0	ug/L	10.00	02/25/2002 00:16	
MTBE	ND	50	ug/L	10.00	02/25/2002 00:16	
Surrogate(s)						
Trifluorotoluene	76.2	58-124	%	1.00	02/25/2002 00:16	
4-Bromofluorobenzene-FID	71.6	50-150	%	1.00	02/25/2002 00:16	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Test Method: 8015M 8021B

Attn: Rachel Hess

Prep Method: 5030

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**PZ-C**	Lab Sample ID:	2002-02-0326-005
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/25/2002 21:39
Sampled:	02/19/2002 14:00	QC-Batch:	2002/02/25-01.02
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	510	50	ug/L	1.00	02/25/2002 21:39	
Benzene	73	0.50	ug/L	1.00	02/25/2002 21:39	
Toluene	ND	0.50	ug/L	1.00	02/25/2002 21:39	
Ethyl benzene	2.5	0.50	ug/L	1.00	02/25/2002 21:39	
Xylene(s)	7.3	0.50	ug/L	1.00	02/25/2002 21:39	
MTBE	ND	5.0	ug/L	1.00	02/25/2002 21:39	
Surrogate(s)						
Trifluorotoluene	76.4	58-124	%	1.00	02/25/2002 21:39	
4-Bromofluorobenzene-FID	78.5	50-150	%	1.00	02/25/2002 21:39	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Attn: Rachel Hess

Test Method: 8015M
8021B

Prep Method: 5030

Sample ID:	**DUP-A**	Lab Sample ID:	2002-02-0326-006
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/26/2002 13:37
Sampled:	02/19/2002 14:40	QC-Batch:	2002/02/26-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	700	50	ug/L	1.00	02/26/2002 13:37	
Benzene	70	0.50	ug/L	1.00	02/26/2002 13:37	
Toluene	ND	0.50	ug/L	1.00	02/26/2002 13:37	
Ethyl benzene	3.7	0.50	ug/L	1.00	02/26/2002 13:37	
Xylene(s)	8.8	0.50	ug/L	1.00	02/26/2002 13:37	
MTBE	ND	5.0	ug/L	1.00	02/26/2002 13:37	
Surrogate(s)						
Trifluorotoluene	113.7	58-124	%	1.00	02/26/2002 13:37	
4-Bromofluorobenzene-FID	103.8	50-150	%	1.00	02/26/2002 13:37	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Test Method: 8015M
8021B

Attn: Rachel Hess

Prep Method: 5030

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	PZ-E	Lab Sample ID:	2002-02-0326-007
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/26/2002 14:07
Sampled:	02/19/2002 15:15	QC-Batch:	2002/02/26-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	2000	250	ug/L	5.00	02/26/2002 14:07	
Benzene	380	2.5	ug/L	5.00	02/26/2002 14:07	
Toluene	ND	2.5	ug/L	5.00	02/26/2002 14:07	
Ethyl benzene	11	2.5	ug/L	5.00	02/26/2002 14:07	
Xylene(s)	5.2	2.5	ug/L	5.00	02/26/2002 14:07	
MTBE	ND	25	ug/L	5.00	02/26/2002 14:07	
Surrogate(s)						
Trifluorotoluene	84.0	58-124	%	5.00	02/26/2002 14:07	
4-Bromofluorobenzene-FID	97.0	50-150	%	5.00	02/26/2002 14:07	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Innovative Technical Solutions, Inc

Test Method: 8015M
8021B

Attn: Rachel Hess

Prep Method: 5030

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**TRIP BLANK**	Lab Sample ID:	2002-02-0326-008
Project:	00-152.15 Port of Oakland	Received:	02/19/2002 18:25
		Extracted:	02/25/2002 23:46
Sampled:	02/19/2002 15:30	QC-Batch:	2002/02/25-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	02/25/2002 23:46	
Benzene	ND	0.50	ug/L	1.00	02/25/2002 23:46	
Toluene	ND	0.50	ug/L	1.00	02/25/2002 23:46	
Ethyl benzene	ND	0.50	ug/L	1.00	02/25/2002 23:46	
Xylene(s)	ND	0.50	ug/L	1.00	02/25/2002 23:46	
MTBE	ND	5.0	ug/L	1.00	02/25/2002 23:46	
Surrogate(s)						
Trifluorotoluene	86.6	58-124	%	1.00	02/25/2002 23:46	
4-Bromofluorobenzene-FID	79.0	50-150	%	1.00	02/25/2002 23:46	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5030

Method Blank **Water** **QC Batch # 2002/02/25-01.02**

MB: 2002/02/25-01.02-003 Date Extracted: 02/25/2002 08:31

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	02/25/2002 08:31	
Benzene	ND	0.5	ug/L	02/25/2002 08:31	
Toluene	ND	0.5	ug/L	02/25/2002 08:31	
Ethyl benzene	ND	0.5	ug/L	02/25/2002 08:31	
Xylene(s)	ND	0.5	ug/L	02/25/2002 08:31	
MTBE	ND	5.0	ug/L	02/25/2002 08:31	
Surrogate(s)					
4-Bromofluorobenzene	78.5	50-150	%	02/25/2002 08:31	
Trifluorotoluene	88.1	58-124	%	02/25/2002 08:31	
4-Bromofluorobenzene-FID	89.1	50-150	%	02/25/2002 08:31	
Trifluorotoluene-FID	87.0	58-124	%	02/25/2002 08:31	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5030

Method Blank **Water** **QC Batch # 2002/02/26-01.01**

MB: 2002/02/26-01.01-008 Date Extracted: 02/26/2002 10:54

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	02/26/2002 10:54	
Benzene	ND	0.5	ug/L	02/26/2002 10:54	
Toluene	ND	0.5	ug/L	02/26/2002 10:54	
Ethyl benzene	ND	0.5	ug/L	02/26/2002 10:54	
Xylene(s)	ND	0.5	ug/L	02/26/2002 10:54	
MTBE	ND	5.0	ug/L	02/26/2002 10:54	
Surrogate(s)					
Trifluorotoluene	108.1	58-124	%	02/26/2002 10:54	
4-Bromofluorobenzene-FID	105.1	50-150	%	02/26/2002 10:54	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5030

Method Blank | **Water** | **QC Batch # 2002/02/25-01.01**

MB: 2002/02/25-01.01-008 | Date Extracted: 02/25/2002 10:39

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	02/25/2002 10:39	
Benzene	ND	0.5	ug/L	02/25/2002 10:39	
Toluene	ND	0.5	ug/L	02/25/2002 10:39	
Ethyl benzene	ND	0.5	ug/L	02/25/2002 10:39	
Xylene(s)	ND	0.5	ug/L	02/25/2002 10:39	
MTBE	ND	5.0	ug/L	02/25/2002 10:39	
Surrogate(s)					
Trifluorotoluene	98.0	58-124	%	02/25/2002 10:39	
4-Bromofluorobenzene-FID	81.4	50-150	%	02/25/2002 10:39	

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8021B Prep Method: 5030

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2002/02/25-01.02**

LCS: 2002/02/25-01.02-004 Extracted: 02/25/2002 09:03 Analyzed: 02/25/2002 09:03

LCSD: 2002/02/25-01.02-005 Extracted: 02/25/2002 09:35 Analyzed: 02/25/2002 09:35

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Benzene	100	97.0	100.0	100.0	100.0	97.0	3.0	77-123	20		
Toluene	101	97.1	100.0	100.0	101.0	97.1	3.9	78-122	20		
Ethyl benzene	104	101	100.0	100.0	104.0	101.0	2.9	70-130	20		
Xylene(s)	308	299	300	300	102.7	99.7	3.0	75-125	20		
Surrogate(s)											
4-Bromofluorobenzene	390	379	500	500	78.0	75.8		50-150			
Trifluorotoluene	432	417	500	500	86.4	83.4		58-124			

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M Prep Method: 5030

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2002/02/25-01.02**

LCS: 2002/02/25-01.02-006 Extracted: 02/25/2002 10:06 Analyzed: 02/25/2002 10:06

LCSD: 2002/02/25-01.02-007 Extracted: 02/25/2002 10:37 Analyzed: 02/25/2002 10:37

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Gasoline	523	482	500	500	104.6	96.4	8.2	75-125	20		
Surrogate(s)											
4-Bromofluorobenzene	470	442	500	500	94.0	88.4		50-150			
Trifluorotoluene-FID	428	395	500	500	85.6	79.0		58-124			

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8021B Prep Method: 5030

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2002/02/26-01.01**

LCS: 2002/02/26-01.01-004 Extracted: 02/26/2002 08:48 Analyzed: 02/26/2002 08:48

LCSD: 2002/02/26-01.01-005 Extracted: 02/26/2002 09:18 Analyzed: 02/26/2002 09:18

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Benzene	91.9	93.9	100.0	100.0	91.9	93.9	2.2	77-123	20		
Toluene	95.7	97.7	100.0	100.0	95.7	97.7	2.1	78-122	20		
Ethyl benzene	96.1	97.3	100.0	100.0	96.1	97.3	1.2	70-130	20		
Xylene(s)	284	289	300	300	94.7	96.3	1.7	75-125	20		
Surrogate(s)											
Trifluorotoluene	461	461	500	500	92.2	92.2		58-124			

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M Prep Method: 5030

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2002/02/26-01.01**

LCS: 2002/02/26-01.01-006 Extracted: 02/26/2002 09:48 Analyzed: 02/26/2002 09:48

LCSD: 2002/02/26-01.01-007 Extracted: 02/26/2002 10:24 Analyzed: 02/26/2002 10:24

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Gasoline	474	458	500	500	94.8	91.6	3.4	75-125	20		
Surrogate(s)											
4-Bromofluorobenzene	424	412	500	500	84.8	82.4		50-150			

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8021B Prep Method: 5030

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2002/02/25-01.01**

LCS: 2002/02/25-01.01-009 Extracted: 02/25/2002 11:13 Analyzed: 02/25/2002 11:13

LCSD: 2002/02/25-01.01-005 Extracted: 02/25/2002 09:11 Analyzed: 02/25/2002 09:11

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Benzene	96.9	91.0	100.0	100.0	96.9	91.0	6.3	77-123	20		
Toluene	101	94.4	100.0	100.0	101.0	94.4	6.8	78-122	20		
Ethyl benzene	98.3	93.0	100.0	100.0	98.3	93.0	5.5	70-130	20		
Xylene(s)	297	278	300	300	99.0	92.7	6.6	75-125	20		
Surrogate(s)											
Trifluorotoluene	519	478	500	500	103.8	95.6		58-124			

Submission #: 2002-02-0326

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M Prep Method: 5030

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2002/02/25-01.01**

LCS: 2002/02/25-01.01-006 Extracted: 02/25/2002 09:41 Analyzed: 02/25/2002 09:41

LCSD: 2002/02/25-01.01-007 Extracted: 02/25/2002 10:10 Analyzed: 02/25/2002 10:10

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Gasoline	458	460	500	500	91.6	92.0	0.4	75-125	20		
Surrogate(s)											
4-Bromofluorobenzene	404	402	500	500	80.8	80.4		50-150			

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Legend & Notes

Test Method: 8021B
8015M

Prep Method: 5030

Analyte Flags

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard

ITSI Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Chain-Of-Custody

Project Name and Number: PORT OF OAKLAND/00-152.15
Project Manager: RACHEL HESS
Site Location: 2225 & 2277 7TH STREET

Laboratory Name: STL CHROMALAB
Address: 1220 QUARRY LANE
PLEASANTON, CA.
Contact Name: SURINDER SIDHU
Phone: (925) 484-1919

Date: 19 FEB 2002
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: TPH GAS 8015 / BTEX + MTBE 8020 / TPH DIESEL/MOTOR OIL W/SILICA GEL CLEANUP	Preservative: HCl / 4°C	Container Type: VOA / AMBER LITER	Special Instructions/Comments
PZ-B	N.A.	19FEB2002	0900	5	H_2O	3	2		
PZ-A	N.A.		1100	5	H_2O	3	2		
PZ-D	N.A.		1130	5	H_2O	3	2		
PZ-F	N.A.		1305	5	H_2O	3	2		
PZ-C	N.A.		1400	5	H_2O	3	2		
DUP-A	N.A.		1440	5	H_2O	3	2		
PZ-E	N.A.	↓	1515	5	H_2O	3	2		
TRIP BLANK	N.A.	19FEB2002	1530	3	H_2O	3			

NOT USED

Sampled By: JAMES ANDERSON
Signature:
Special Instructions: EVERY SAMPLE EXCEPT PZ-A SMELLED OF PRODUCT AND A HYDROCARBON SHEEN WAS NOTICED.
Send Results to: RACHEL HESS
(w/fax #) (925) 256-8998
Turnaround Time: 5 DAYS

Sampler: JAMES ANDERSON
Courier/Airbill No.: SELF DELIVERED

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
/ITSI	19FEB2002	1825	Denise Harrington	2/19/02	1825

Original – Laboratory Yellow – Field/Office

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

February 26, 2002

Rachel Hess, Project Manager
Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, CA 94598

Dear Ms. Hess:

Included are the amended results from the testing of material submitted on February 6, 2002 from your Port of Oakland / 00-152.15 project. Reporting units have been corrected for the total metals analysis.

We apologize for any inconvenience this may have caused and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Kurt Johnson,
Chemist

Enclosures
ITS0213R.DOC

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/11/02
Date Analyzed: 02/12/02

RESULTS FROM THE ANALYSIS OF PRODUCT SAMPLES FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Results Reported as ug/g (ppm)

Sample ID Laboratory ID	Cd	Cu	Pb	Ni	Zn
CPT-20 202033-01	<1.0	<1.0	<2.0	<1.0	<1.0
CPT-14 202033-02	<1.0	4.4	14	7.2	12
CPT-19 202033-03	<1.0	3.4	<2.0	<1.0	<1.0
CJRS-1 202033-04	<1.0	2.9	<2.0	<1.0	77
CPT-30 202033-05	<1.0	<1.0	<2.0	<1.0	2.8
Method Blank	<1.0	<1.0	<1.0	<2.0	<1.0

Cd Cadmium
Cu Copper
Pb Lead
Ni Nickel
Zn Zinc

Date of Report: 02/13/02
Date Received: 02/06/02
Project: Port of Oakland / 00-152.15

QUALITY ASSURANCE RESULTS FROM TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Laboratory Code: 202033-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Cadmium	ug/g (ppm)	<1.0	<1.0	nm	0-20
Copper	ug/g (ppm)	<1.0	<1.0	nm	0-20
Lead	ug/g (ppm)	<2.0	<2.0	nm	0-20
Nickel	ug/g (ppm)	<1.0	<1.0	nm	0-20
Zinc	ug/g (ppm)	<1.0	<1.0	nm	0-20

Laboratory Code: 202033-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Cadmium	ug/g (ppm)	50	<1.0	111	109	50-150	2
Copper	ug/g (ppm)	50	<1.0	115	112	50-150	3
Lead	ug/g (ppm)	100	<2.0	106	105	50-150	1
Nickel	ug/g (ppm)	100	<1.0	110	104	50-150	6
Zinc	ug/g (ppm)	50	<1.0	111	112	50-150	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Cadmium	ug/g (ppm)	50	106	101	80-120	5
Copper	ug/g (ppm)	50	101	99	80-120	2
Lead	ug/g (ppm)	100	104	101	80-120	3
Nickel	ug/g (ppm)	100	103	96	80-120	7
Zinc	ug/g (ppm)	50	106	97	80-120	9

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

— 202120

ES 2.19.02 D02
CM

ITSI Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

Chain-Of-Custody

Project Name and Number: PORT OF OAKLAND /00-152.15
Project Manager: RACHEL HESS
Site Location: 2225 & 2277 7TH STREET

Laboratory Name: FRIEDMAN & BRUYA, INC.
Address: 3012 16TH AVE. WEST SEATTLE, WA. 98119
Contact Name:
Phone: (206) 285-8282

Date: 8 FEB 2002
Page: 1 of 1

AR ID	Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	8270 - PAHs, DIESEL, MOTOR OIL	ASTM D-2887	STD. FUEL SCAN	8260 VOCs + MTBE	PIANO	6010 METALS: Cd, Cr, Pb, Ni & Zn	Special Instructions/Comments
Preservative:							NONE	NONE	NONE	NONE	NONE		
Container Type:							VOA	VOA	VOA	VOA	VOA		
01	MW-3	~6.5'	8FEB2002	1030	4	PROD.	✓	✓	✓	✓	✓		
02	MW-1	~6.5'	8FEB2002	1115	4	PROD.	✓	✓	✓	✓	✓		
03	PZ-F	~6.0	15FEB2002	1020	1	PROD.	✓	✓	✓	✓	✓		

Sampled By: JAMES ANDERSON
Signature: [signature]
Special Instructions:
Send Results to: RACHEL HESS
(w/fax #)
Turnaround Time: 5 DAYS

Sampler:
Courier/Airbill No.:

Relinquished By/Affiliation:	Date:	Time:	Received By/Affiliation:	Date:	Time:
[signature] /ITSI	8FEB2002	1600	[signature] /ITSI	13Feb2002	1602
[signature]	15FEB2002	1500	[signature] /ITSI	15Feb02	1505
[signature]	18Feb2002	1550	[signature] /ITSI	18FEB2002	1550
[signature]	18FEB2002	1600	B. [signature]	2/18/02	9A

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

February 26, 2002

INVOICE #02ITS0226-1

Accounts Payable
Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, CA 94598

RE: Project Port of Oakland / 00-152.15 - Results of testing requested by Rachel Hess for material submitted on February 19, 2002.

3 samples characterized by capillary gas chromatography @ $250 per sample	$ 750.00
3 samples characterized for PIANO constituents by ASTM D5134-92 Mod @ $300 per sample	900.00
3 samples analyzed for Volatiles by Method 8260B @ $250 per sample	750.00
3 samples analyzed for Parent and Alkylated PAHs by Method 8270C @ $300 per sample	900.00
3 samples analyzed for Total Cd, Cu, Pb, Ni and Zn by Method 6010 @ $85 per sample	255.00
Amount Due	$ 3,555.00

FEDERAL TAX ID #91-1287838

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

February 26, 2002

Rachel Hess, Project Manager
Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, CA 94598

Dear Ms. Hess:

Included are the results from the testing of material submitted on February 19, 2002 from your Port of Oakland / 00-152.15 project. The product samples submitted for forensic evaluation arrived in good condition. Upon their arrival, the samples MW-3, MW-1, and PZ-F were assigned our laboratory project number 202120 and were placed in a refrigerator maintained at 4°C until removed for sample processing.

The samples MW-3, MW-1, and PZ-F were diluted and analyzed using a gas chromatograph with a flame ionization detector (GC/FID) and an electron capture detector (ECD). The data generated yielded information on the boiling range and general chemical composition of the material present. The GC/FID and GC/ECD traces are enclosed. A GC/FID trace of a standard consisting of normal alkanes is also provided for reference purposes.

In addition to the GC/FID/ECD analysis, the samples MW-3, MW-1, and PZ-F were analyzed for paraffin, isoparaffin, aromatic, naphthene, and olefin (PIANO) constituents using a GC fitted with a mass spectrometer (MS); volatile organic compounds using GC/MS; polycyclic aromatic hydrocarbons (PAHs) using GC/MS; and total metals using inductively coupled plasma (ICP). The results of this testing, including the associated quality assurance and charts depicting the relative abundance of polycyclic aromatic hydrocarbons in the samples, are also enclosed.

Please contact us if additional consultation is needed by our firm in the interpretation of the analytical results provided. We appreciate this opportunity to be of service to you and hope you will call if you should have any questions. We will hold your samples for 30 days before disposal unless directed otherwise.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Morrow for

Kurt Johnson, Chemist

Enclosures
ITS0226R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/20/02
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
MW-3	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The patterns displayed by these peaks are indicative of a middle distillate such as diesel fuel #2 or similar fuels. The medium boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from n-C_9 to n-C_{24} showing a maximum near n-C_{15}. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 270°C. Within this range, the dominant peaks present are indicative of isoprenoids including norpristane, pristane, and phytane. A discernible pattern of peaks characteristic of the normal alkanes was not present. The abundance of isoprenoids in conjunction with the apparent absence of normal alkanes indicates that the fuel present has undergone substantial biological degradation. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/20/02
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
MW-1	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The majority of material present in this sample is indicative of a middle distillate such as diesel fuel #2 or similar fuels. The medium boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from *n*-C_9 to *n*-C_{24} showing a maximum near *n*-C_{15}. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 270°C. Within this range, the dominant peaks present are indicative of isoprenoids including norpristane, pristane, and phytane. A discernible pattern of peaks characteristic of the normal alkanes was not present. The abundance of isoprenoids in conjunction with the apparent absence of normal alkanes indicates that the fuel present has undergone substantial biological degradation. The GC/ECD trace of the sample MW-1 shows the presence of a single peak eluting at approximately 10 minutes. The retention time of this peak indicates that the lead antiknock additive tetraethyl lead (TEL) may be present in the sample. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/20/02
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
PZ-F	The GC trace using the flame ionization detector (FID) showed the presence of medium boiling compounds. The patterns displayed by these peaks are indicative of a middle distillate such as diesel fuel #2 or similar fuels. The medium boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from *n*-C_9 to *n*-C_{24} showing a maximum near *n*-C_{15}. This correlates with a temperature range of approximately 150°C to 390°C with a maximum near 270°C. Within this range, the dominant peaks present are indicative of isoprenoids including norpristane, pristane, and phytane. A discernible pattern of peaks characteristic of the normal alkanes was not present. The abundance of isoprenoids in conjunction with the apparent absence of normal alkanes indicates that the fuel present has undergone substantial biological degradation. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-01
Client ID MW-3

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	<0.01
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	<0.01
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	<0.01
Cyclopentane	<0.01
2-Methylpentane	<0.01
DIPE	<0.01
3-Methylpentane	0.03
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-01
Client ID MW-3

Compound	Weight Percent
n-Hexane	0.47
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	<0.01
2,4-Dimethylpentane	<0.01
Methylcyclopentane	0.08
2,2,3-Trimethylbutane	<0.01
Benzene	<0.01
1-Methylcyclopentene	<0.01
TAME	<0.01
3,3-Dimethylpentane	<0.01
Cyclohexane	<0.01
2-Methylhexane	<0.01
2,3-Dimethylpentane	<0.01
1,1-Dimethylcyclopentane	<0.01
3-Methylhexane	0.01
c-1,3-Dimethylcyclopentane	<0.01
3-Ethylpentane	<0.01
Isooctane	0.01
t-1,2-Dimethylcyclopentane	<0.01
1-Heptene	<0.01
n-Heptane	<0.01
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	<0.01
2,5-Dimethylhexane	<0.01
Methylcyclohexane	0.03
2,4-Dimethylhexane	0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-01
Client ID MW-3

Compound	Weight Percent
Ethylcyclopentane	<0.01
t-1,c-2,4-Trimethylcyclopentane	<0.01
t-1,c-2,3-Trimethylcyclopentane	0.01
2,3,4-Trimethylpentane	0.01
Toluene	<0.01
2,3-Dimethylhexane	0.01
2-Methylheptane	0.01
3-Methylheptane	0.02
4-Methylheptane	<0.01
3-Ethylhexane	0.01
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	<0.01
t-1,2-Dimethylcyclohexane	0.04
n-Octane	<0.01
1-Ethyl-1-methylcyclopentane	<0.01
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	0.03
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	0.01
3,5-Dimethylheptane	<0.01
n-Propylcyclopentane	<0.01
Ethylbenzene	<0.01
2,3-Dimethylheptane	0.02
3,4-Dimethylheptane	<0.01
2-Methyloctane	0.01
m-Xylene	<0.01
p-Xylene	<0.01
3-Methyloctane	0.01
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-01
Client ID MW-3

Compound	Weight Percent
n-Nonane	<0.01
Isobutylcyclopentane	0.02
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	<0.01
3,3-Dimethyloctane	<0.01
n-Butylcyclopentane	0.03
n-Propylbenzene	0.02
2,3-Dimethyloctane	0.03
1-Methyl-3-ethylbenzene	<0.01
1-Methyl-4-ethylbenzene	<0.01
2-Methylnonane	0.03
3-Ethyloctane	0.03
3-Methylnonane	0.03
1,3,5-Trimethylbenzene	<0.01
1-Methyl-2-ethylbenzene	<0.01
1,2,4-Trimethylbenzene	<0.01
tert-Butylbenzene	<0.01
n-Decane	<0.01
Isobutylbenzene	<0.01
Isopropylcyclohexane	0.12
sec-Butylbenzene	0.06
1-Methyl-3-isopropylbenzene	<0.01
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	<0.01
1,2,3-Trimethylbenzene	<0.01
Indan	<0.01
1-Methyl-3-n-propylbenzene	<0.01
1-Methyl-4-n-propylbenzene	<0.01
n-Butylbenzene	<0.01
1,3-Dimethyl-5-ethylbenzene	0.01
1,2-Diethylbenzene	0.01
1-Methyl-2-n-propylbenzene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-01
Client ID MW-3

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	<0.01
1,2-Dimethyl-4-ethylbenzene	0.11
1,3-Dimethyl-2-ethylbenzene	<0.01
1,2-Dimethyl-3-ethylbenzene	<0.01
n-Undecane	<0.01
1,2,4,5-Tetramethylbenzene	0.17
2-Methylbutylbenzene	0.05
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	0.12
Methylindan	0.26
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	<0.01
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	<0.01
n-Hexylbenzene	<0.01
2-Methylnaphthalene	0.39
n-Tridecane	<0.01
1-Methylnaphthalene	0.80
n-Tetradecane	0.35
n-Pentadecane	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 202120-01
Client ID MW-3

	Weight Percent
Total Identified Compounds	3.50
Oxygenated Compounds	0.00
Hydrocarbon Compounds	3.50
Unidentified Compounds	96.50
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	<0.01	<0.01		<0.01	<0.01	<0.01
C6	0.47	0.03	<0.01	0.08	<0.01	0.57
C7	<0.01	0.01	<0.01	0.03	<0.01	0.04
C8	<0.01	<0.1	<0.01	0.08	<0.01	<0.25
C9	<0.01	0.06	0.02	0.17	<0.01	0.25
C10	<0.01	0.11	0.63	<0.01		0.74
C11	<0.01		1.36			1.36
C12	<0.01		<0.01			<0.01
C13	<0.01					<0.01
C14	0.35					0.35
C15	<0.01					<0.01
Total	0.82	0.21	2.01	0.36	<0.01	3.33

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-02
Client ID MW-1

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	0.02
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	0.02
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	0.05
Cyclopentane	<0.01
2-Methylpentane	0.19
DIPE	<0.01
3-Methylpentane	0.14
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-02
Client ID MW-1

Compound	Weight Percent
n-Hexane	0.32
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	0.02
2,4-Dimethylpentane	0.08
Methylcyclopentane	0.24
2,2,3-Trimethylbutane	<0.01
Benzene	0.06
1-Methylcyclopentene	0.02
TAME	<0.01
3,3-Dimethylpentane	0.03
Cyclohexane	0.09
2-Methylhexane	0.26
2,3-Dimethylpentane	0.11
1,1-Dimethylcyclopentane	0.03
3-Methylhexane	0.30
c-1,3-Dimethylcyclopentane	0.11
3-Ethylpentane	0.01
Isooctane	0.30
t-1,2-Dimethylcyclopentane	0.03
1-Heptene	<0.01
n-Heptane	0.24
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	0.03
2,5-Dimethylhexane	0.09
Methylcyclohexane	0.30
2,4-Dimethylhexane	0.11

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-02
Client ID MW-1

Compound	Weight Percent
Ethylcyclopentane	0.08
t-1,c-2,4-Trimethylcyclopentane	0.08
t-1,c-2,3-Trimethylcyclopentane	0.08
2,3,4-Trimethylpentane	0.17
Toluene	<0.01
2,3-Dimethylhexane	0.26
2-Methylheptane	0.19
3-Methylheptane	0.22
4-Methylheptane	0.08
3-Ethylhexane	0.04
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	0.03
t-1,2-Dimethylcyclohexane	0.12
n-Octane	0.10
1-Ethyl-1-methylcyclopentane	0.02
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	0.05
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	0.04
3,5-Dimethylheptane	0.02
n-Propylcyclopentane	0.02
Ethylbenzene	0.09
2,3-Dimethylheptane	0.05
3,4-Dimethylheptane	0.03
2-Methyloctane	0.07
m-Xylene	<0.01
p-Xylene	<0.01
3-Methyloctane	0.06
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-02
Client ID MW-1

Compound	Weight Percent
n-Nonane	0.01
Isobutylcyclopentane	0.01
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	0.04
3,3-Dimethyloctane	0.02
n-Butylcyclopentane	0.03
n-Propylbenzene	0.14
2,3-Dimethyloctane	0.02
1-Methyl-3-ethylbenzene	<0.01
1-Methyl-4-ethylbenzene	<0.01
2-Methylnonane	0.05
3-Ethyloctane	0.02
3-Methylnonane	0.06
1,3,5-Trimethylbenzene	<0.01
1-Methyl-2-ethylbenzene	0.04
1,2,4-Trimethylbenzene	<0.01
tert-Butylbenzene	<0.01
n-Decane	0.02
Isobutylbenzene	<0.01
Isopropylcyclohexane	0.06
sec-Butylbenzene	0.04
1-Methyl-3-isopropylbenzene	<0.01
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	<0.01
1,2,3-Trimethylbenzene	0.04
Indan	<0.01
1-Methyl-3-n-propylbenzene	<0.01
1-Methyl-4-n-propylbenzene	<0.01
n-Butylbenzene	0.18
1,3-Dimethyl-5-ethylbenzene	0.04
1,2-Diethylbenzene	0.04
1-Methyl-2-n-propylbenzene	0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-02
Client ID MW-1

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	0.05
1,2-Dimethyl-4-ethylbenzene	0.22
1,3-Dimethyl-2-ethylbenzene	0.12
1,2-Dimethyl-3-ethylbenzene	<0.01
n-Undecane	0.12
1,2,4,5-Tetramethylbenzene	0.14
2-Methylbutylbenzene	0.04
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	0.06
Methylindan	0.18
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	<0.01
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	0.23
n-Hexylbenzene	0.15
2-Methylnaphthalene	0.59
n-Tridecane	<0.01
1-Methylnaphthalene	0.51
n-Tetradecane	0.27
n-Pentadecane	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED
Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 202120-02
Client ID MW-1

	Weight Percent
Total Identified Compounds	8.72
Oxygenated Compounds	0.00
Hydrocarbon Compounds	8.72
Unidentified Compounds	91.28
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	0.02	0.02		<0.01	<0.01	0.05
C6	0.32	0.37	0.06	0.34	<0.01	1.09
C7	0.24	0.82	<0.01	0.55	<0.01	1.62
C8	0.10	1.50	0.09	0.39	<0.01	2.07
C9	0.01	0.28	0.26	0.11	<0.01	0.66
C10	0.02	0.17	1.30	<0.01		1.49
C11	0.12		1.20			1.32
C12	<0.01		0.15			0.15
C13	<0.01					<0.01
C14	0.27					0.27
C15	<0.01					<0.01
Total	1.11	3.15	3.06	1.40	<0.01	8.72

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-03
Client ID PZ-F

Compound	Weight Percent
Propane	<0.01
Methanol	<0.01
Isobutane	<0.01
2-Methyl-1-propene	<0.01
Ethanol	<0.01
n-Butane	<0.01
t-2-Butene	<0.01
c-2-Butene	<0.01
Isopropanol	<0.01
3-Methyl-1-butene	<0.01
Isopentane	<0.01
tert-Butanol	<0.01
1-Pentene	<0.01
2-Methyl-1-butene	<0.01
n-Propanol	<0.01
n-Pentane	<0.01
t-2-Pentene	<0.01
c-2-Pentene	<0.01
2-Methyl-2-butene	<0.01
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	<0.01
Isobutanol	<0.01
2,3-Dimethylbutane	<0.01
Cyclopentane	<0.01
2-Methylpentane	0.02
DIPE	<0.01
3-Methylpentane	0.02
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-03
Client ID PZ-F

Compound	Weight Percent
n-Hexane	0.33
t-2-Hexene	<0.01
2-Methyl-1-pentene	<0.01
2-Methyl-2-pentene	<0.01
c-2-Hexene	<0.01
2,2-Dimethylpentane	<0.01
2,4-Dimethylpentane	<0.01
Methylcyclopentane	0.08
2,2,3-Trimethylbutane	<0.01
Benzene	<0.01
1-Methylcyclopentene	<0.01
TAME	<0.01
3,3-Dimethylpentane	<0.01
Cyclohexane	0.01
2-Methylhexane	0.02
2,3-Dimethylpentane	0.02
1,1-Dimethylcyclopentane	<0.01
3-Methylhexane	0.03
c-1,3-Dimethylcyclopentane	0.01
3-Ethylpentane	<0.01
Isooctane	0.03
t-1,2-Dimethylcyclopentane	<0.01
1-Heptene	<0.01
n-Heptane	0.02
t-3-Heptene	<0.01
c-3-Heptene	<0.01
t-2-Heptene	<0.01
c-2-Heptene	<0.01
2,2-Dimethylhexane	<0.01
2,5-Dimethylhexane	<0.01
Methylcyclohexane	0.05
2,4-Dimethylhexane	0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-03
Client ID PZ-F

Compound	Weight Percent
Ethylcyclopentane	0.01
t-1,c-2,4-Trimethylcyclopentane	0.01
t-1,c-2,3-Trimethylcyclopentane	0.01
2,3,4-Trimethylpentane	0.02
Toluene	<0.01
2,3-Dimethylhexane	0.03
2-Methylheptane	0.02
3-Methylheptane	0.03
4-Methylheptane	0.01
3-Ethylhexane	<0.01
1-Octene	<0.01
1,2,3-Trimethylcyclopentane	<0.01
t-1,2-Dimethylcyclohexane	0.04
n-Octane	0.02
1-Ethyl-1-methylcyclopentane	<0.01
c-2-Octene	<0.01
c-1,2-Dimethylcyclohexane	0.02
Isopropylcyclopentane	<0.01
2,5-Dimethylheptane	0.01
3,5-Dimethylheptane	<0.01
n-Propylcyclopentane	<0.01
Ethylbenzene	<0.01
2,3-Dimethylheptane	0.03
3,4-Dimethylheptane	<0.01
2-Methyloctane	0.01
m-Xylene	<0.01
p-Xylene	<0.01
3-Methyloctane	0.02
1-Nonene	<0.01
3,3-Diethylpentane	<0.01
4-Nonene	<0.01
o-Xylene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-03
Client ID PZ-F

Compound	Weight Percent
n-Nonane	0.01
Isobutylcyclopentane	0.01
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	0.01
3,3-Dimethyloctane	<0.01
n-Butylcyclopentane	0.01
n-Propylbenzene	0.03
2,3-Dimethyloctane	0.02
1-Methyl-3-ethylbenzene	<0.01
1-Methyl-4-ethylbenzene	<0.01
2-Methylnonane	0.02
3-Ethyloctane	0.02
3-Methylnonane	0.03
1,3,5-Trimethylbenzene	0.01
1-Methyl-2-ethylbenzene	0.02
1,2,4-Trimethylbenzene	0.01
tert-Butylbenzene	<0.01
n-Decane	0.06
Isobutylbenzene	<0.01
Isopropylcyclohexane	0.04
sec-Butylbenzene	0.03
1-Methyl-3-isopropylbenzene	<0.01
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	<0.01
1,2,3-Trimethylbenzene	<0.01
Indan	<0.01
1-Methyl-3-n-propylbenzene	<0.01
1-Methyl-4-n-propylbenzene	<0.01
n-Butylbenzene	<0.01
1,3-Dimethyl-5-ethylbenzene	0.01
1,2-Diethylbenzene	0.03
1-Methyl-2-n-propylbenzene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

Laboratory ID 202120-03
Client ID PZ-F

Compound	Weight Percent
1,4-Dimethyl-2-ethylbenzene	<0.01
1,2-Dimethyl-4-ethylbenzene	0.06
1,3-Dimethyl-2-ethylbenzene	0.08
1,2-Dimethyl-3-ethylbenzene	<0.01
n-Undecane	0.23
1,2,4,5-Tetramethylbenzene	0.08
2-Methylbutylbenzene	0.02
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	0.11
Methylindan	0.11
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	<0.01
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	0.16
n-Hexylbenzene	0.16
2-Methylnaphthalene	0.25
n-Tridecane	<0.01
1-Methylnaphthalene	0.48
n-Tetradecane	0.31
n-Pentadecane	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PARAFFINS, ISOPARAFFINS, OLEFINS, NAPHTHENES, AND AROMATICS USING ASTM D5134-92 MODIFIED

Results Reported as % by Weight

PIANO SUMMARY

Laboratory ID 202120-03
Client ID PZ-F

	Weight Percent
Total Identified Compounds	3.40
Oxygenated Compounds	0.00
Hydrocarbon Compounds	3.40
Unidentified Compounds	96.60
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01					<0.01
C4	<0.01	<0.01			<0.01	<0.01
C5	<0.01	<0.01		<0.01	<0.01	<0.01
C6	0.33	0.04	<0.01	0.09	<0.01	0.46
C7	0.02	0.07	<0.01	0.07	<0.01	0.16
C8	0.02	0.18	<0.01	0.08	<0.01	0.28
C9	0.01	0.07	0.09	0.06	<0.01	0.24
C10	0.06	0.08	0.56	<0.01		0.69
C11	0.23		0.86			1.10
C12	<0.01		0.16			0.16
C13	<0.01					<0.01
C14	0.31					0.31
C15	<0.01					<0.01
Total	0.98	0.44	1.67	0.31	<0.01	3.40

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-3	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/19/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/21/02	Lab ID:	202120-01
Date Analyzed:	02/21/02	Data File:	022116.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	132	54	133
1,2-Dichloroethane-d4	102	48	140
Toluene-d8	118	47	145
4-Bromofluorobenzene	105	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<100	Tetrachloroethene	<100
Vinyl chloride	<100	Dibromochloromethane	<100
Bromomethane	<100	1,2-Dibromoethane (EDB)	<100
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	<100
Acetone	<1,000	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	<100
Methylene chloride	<500	o-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	Styrene	<100
trans-1,2-Dichloroethene	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
2,2-Dichloropropane	<100	n-Propylbenzene	<100
cis-1,2-Dichloroethene	<100	Bromobenzene	<100
Chloroform	<100	1,3,5-Trimethylbenzene	<100
2-Butanone (MEK)	<1,000	1,1,2,2-Tetrachloroethane	<100
1,2-Dichloroethane (EDC)	<100	1,2,3-Trichloropropane	<100
1,1,1-Trichloroethane	<100	2-Chlorotoluene	<100
1,1-Dichloropropene	<100	4-Chlorotoluene	<100
Carbon Tetrachloride	<100	tert-Butylbenzene	<100
Benzene	<100	1,2,4-Trimethylbenzene	<100
Trichloroethene	<100	sec-Butylbenzene	120
1,2-Dichloropropane	<100	p-Isopropyltoluene	<100
Bromodichloromethane	<100	1,3-Dichlorobenzene	<100
Dibromomethane	<100	1,4-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dichlorobenzene	<100
cis-1,3-Dichloropropene	<100	1,2-Dibromo-3-chloropropane	<100
Toluene	<100	1,2,4-Trichlorobenzene	<100
trans-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
1,1,2-Trichloroethane	<100	Naphthalene	<100
2-Hexanone	<1,000	1,2,3-Trichlorobenzene	<100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-1	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/19/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/21/02	Lab ID:	202120-02
Date Analyzed:	02/21/02	Data File:	022117.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	112	54	133
1,2-Dichloroethane-d4	85	48	140
Toluene-d8	113	47	145
4-Bromofluorobenzene	103	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<100	Tetrachloroethene	<100
Vinyl chloride	<100	Dibromochloromethane	<100
Bromomethane	<100	1,2-Dibromoethane (EDB)	<100
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	730
Acetone	<1,000	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	<100
Methylene chloride	<500	o-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	Styrene	<100
trans-1,2-Dichloroethene	<100	Isopropylbenzene	350
1,1-Dichloroethane	<100	Bromoform	<100
2,2-Dichloropropane	<100	n-Propylbenzene	2,700
cis-1,2-Dichloroethene	<100	Bromobenzene	<100
Chloroform	<100	1,3,5-Trimethylbenzene	<100
2-Butanone (MEK)	<1,000	1,1,2,2-Tetrachloroethane	<100
1,2-Dichloroethane (EDC)	<100	1,2,3-Trichloropropane	<100
1,1,1-Trichloroethane	<100	2-Chlorotoluene	<100
1,1-Dichloropropene	<100	4-Chlorotoluene	<100
Carbon Tetrachloride	<100	tert-Butylbenzene	<100
Benzene	710	1,2,4-Trimethylbenzene	<100
Trichloroethene	<100	sec-Butylbenzene	270
1,2-Dichloropropane	<100	p-Isopropyltoluene	<100
Bromodichloromethane	<100	1,3-Dichlorobenzene	<100
Dibromomethane	<100	1,4-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dichlorobenzene	<100
cis-1,3-Dichloropropene	<100	1,2-Dibromo-3-chloropropane	<100
Toluene	<100	1,2,4-Trichlorobenzene	<100
trans-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
1,1,2-Trichloroethane	<100	Naphthalene	1,400
2-Hexanone	<1,000	1,2,3-Trichlorobenzene	<100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	PZ-F	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/19/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/21/02	Lab ID:	202120-03
Date Analyzed:	02/21/02	Data File:	022118.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	112	54	133
1,2-Dichloroethane-d4	77	48	140
Toluene-d8	92	47	145
4-Bromofluorobenzene	105	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<100	Tetrachloroethene	<100
Vinyl chloride	<100	Dibromochloromethane	<100
Bromomethane	<100	1,2-Dibromoethane (EDB)	<100
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	<100
Acetone	<1,000	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	<100
Methylene chloride	<500	o-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	Styrene	<100
trans-1,2-Dichloroethene	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
2,2-Dichloropropane	<100	n-Propylbenzene	250
cis-1,2-Dichloroethene	<100	Bromobenzene	<100
Chloroform	<100	1,3,5-Trimethylbenzene	<100
2-Butanone (MEK)	<1,000	1,1,2,2-Tetrachloroethane	<100
1,2-Dichloroethane (EDC)	<100	1,2,3-Trichloropropane	<100
1,1,1-Trichloroethane	<100	2-Chlorotoluene	<100
1,1-Dichloropropene	<100	4-Chlorotoluene	<100
Carbon Tetrachloride	<100	tert-Butylbenzene	<100
Benzene	<100	1,2,4-Trimethylbenzene	110
Trichloroethene	<100	sec-Butylbenzene	150
1,2-Dichloropropane	<100	p-Isopropyltoluene	<100
Bromodichloromethane	<100	1,3-Dichlorobenzene	<100
Dibromomethane	<100	1,4-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dichlorobenzene	<100
cis-1,3-Dichloropropene	<100	1,2-Dibromo-3-chloropropane	<100
Toluene	<100	1,2,4-Trichlorobenzene	<100
trans-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
1,1,2-Trichloroethane	<100	Naphthalene	<100
2-Hexanone	<1,000	1,2,3-Trichlorobenzene	<100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	Innovative Technical Solutions, Inc.
Date Received:	Not Applicable	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/21/02	Lab ID:	02-161 mb2
Date Analyzed:	02/21/02	Data File:	022115.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	127	54	133
1,2-Dichloroethane-d4	88	48	140
Toluene-d8	111	47	145
4-Bromofluorobenzene	118	52	139

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<100	Tetrachloroethene	<100
Vinyl chloride	<100	Dibromochloromethane	<100
Bromomethane	<100	1,2-Dibromoethane (EDB)	<100
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	<100
Acetone	<1,000	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	<100
Methylene chloride	<500	o-Xylene	<100
Methyl t-butyl ether (MTBE)	<100	Styrene	<100
trans-1,2-Dichloroethene	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
2,2-Dichloropropane	<100	n-Propylbenzene	<100
cis-1,2-Dichloroethene	<100	Bromobenzene	<100
Chloroform	<100	1,3,5-Trimethylbenzene	<100
2-Butanone (MEK)	<1,000	1,1,2,2-Tetrachloroethane	<100
1,2-Dichloroethane (EDC)	<100	1,2,3-Trichloropropane	<100
1,1,1-Trichloroethane	<100	2-Chlorotoluene	<100
1,1-Dichloropropene	<100	4-Chlorotoluene	<100
Carbon Tetrachloride	<100	tert-Butylbenzene	<100
Benzene	<100	1,2,4-Trimethylbenzene	<100
Trichloroethene	<100	sec-Butylbenzene	<100
1,2-Dichloropropane	<100	p-Isopropyltoluene	<100
Bromodichloromethane	<100	1,3-Dichlorobenzene	<100
Dibromomethane	<100	1,4-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dichlorobenzene	<100
cis-1,3-Dichloropropene	<100	1,2-Dibromo-3-chloropropane	<100
Toluene	<100	1,2,4-Trichlorobenzene	<100
trans-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
1,1,2-Trichloroethane	<100	Naphthalene	<100
2-Hexanone	<1,000	1,2,3-Trichlorobenzene	<100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	MW-3	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/19/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/20/02	Lab ID:	202120-01 1/10
Date Analyzed:	02/21/02	Data File:	022128.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	131 vo	35	114
2-Fluorobiphenyl	95	43	116
Terphenyl-d14	101	33	141

Compounds:	Concentration ug/g (ppm)
Naphthalene	<100
C1-naphthalenes	3,100
C2-naphthalenes	8,200
C3-naphthalenes	6,700
C4-naphthalenes	2,100
Biphenyl	<100
Acenaphthylene	<100
Acenaphthene	150
Dibenzofuran	160
Fluorene	340
C1-fluorenes	920
C2-fluorenes	1,200
C3-fluorenes	570
Dibenzothiophene	170
C1-dibenzothiophenes	450
C2-dibenzothiophenes	430
C3-dibenzothiophenes	210
C4-dibenzothiophenes	<100
Phenanthrene	620
Anthracene	<100
C1-phenanthrenes/anthracenes	1,300
C2-phenanthrenes/anthracenes	1,000

Compounds:	Concentration ug/g (ppm)
C3-phenanthrenes/anthracenes	390
C4-phenanthrenes/anthracenes	<100
Fluoranthene	<100
Pyrene	150
C1-fluoranthenes/pyrenes	190
C2-fluoranthenes/pyrenes	<100
C3-fluoranthenes/pyrenes	<100
Benz(a)anthracene	<100
Chrysene	<100
C1-chrysenes	<100
C2-chrysenes	<100
C3-chrysenes	<100
C4-chrysenes	<100
Benzo(e)pyrene	<100
Benzo(a)pyrene	<100
Perylene	<100
Benzo(b)fluoranthene	<100
Benzo(k)fluoranthene	<100
Indeno(1,2,3-cd)pyrene	<100
Dibenzo(a,h)anthracene	<100
Benzo(g,h,i)perylene	<100

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

vo - The value reported fell outside the control limits established for this analyte.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	MW-1	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/19/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/20/02	Lab ID:	202120-02 1/10
Date Analyzed:	02/21/02	Data File:	022129.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	125 vo	35	114
2-Fluorobiphenyl	99	43	116
Terphenyl-d14	96	33	141

Compounds:	Concentration ug/g (ppm)
Naphthalene	1,100
C1-naphthalenes	4,700
C2-naphthalenes	7,700
C3-naphthalenes	5,800
C4-naphthalenes	1,900
Biphenyl	<100
Acenaphthylene	<100
Acenaphthene	180
Dibenzofuran	180
Fluorene	340
C1-fluorenes	800
C2-fluorenes	970
C3-fluorenes	490
Dibenzothiophene	150
C1-dibenzothiophenes	370
C2-dibenzothiophenes	360
C3-dibenzothiophenes	210
C4-dibenzothiophenes	<100
Phenanthrene	660
Anthracene	<100
C1-phenanthrenes/anthracenes	1,100
C2-phenanthrenes/anthracenes	830

Compounds:	Concentration ug/g (ppm)
C3-phenanthrenes/anthracenes	270
C4-phenanthrenes/anthracenes	<100
Fluoranthene	110
Pyrene	160
C1-fluoranthenes/pyrenes	190
C2-fluoranthenes/pyrenes	<100
C3-fluoranthenes/pyrenes	<100
Benz(a)anthracene	<100
Chrysene	<100
C1-chrysenes	<100
C2-chrysenes	<100
C3-chrysenes	<100
C4-chrysenes	<100
Benzo(e)pyrene	<100
Benzo(a)pyrene	<100
Perylene	<100
Benzo(b)fluoranthene	<100
Benzo(k)fluoranthene	<100
Indeno(1,2,3-cd)pyrene	<100
Dibenzo(a,h)anthracene	<100
Benzo(g,h,i)perylene	<100

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

vo - The value reported fell outside the control limits established for this analyte.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	PZ-F	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/19/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/20/02	Lab ID:	202120-03 1/10
Date Analyzed:	02/21/02	Data File:	022130.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	123 vo	35	114
2-Fluorobiphenyl	98	43	116
Terphenyl-d14	96	33	141

Compounds:	Concentration ug/g (ppm)
Naphthalene	200
C1-naphthalenes	2,900
C2-naphthalenes	7,500
C3-naphthalenes	6,200
C4-naphthalenes	1,900
Biphenyl	<100
Acenaphthylene	<100
Acenaphthene	120
Dibenzofuran	150
Fluorene	320
C1-fluorenes	880
C2-fluorenes	1,100
C3-fluorenes	560
Dibenzothiophene	160
C1-dibenzothiophenes	410
C2-dibenzothiophenes	410
C3-dibenzothiophenes	200
C4-dibenzothiophenes	<100
Phenanthrene	580
Anthracene	<100
C1-phenanthrenes/anthracenes	1,200
C2-phenanthrenes/anthracenes	930
C3-phenanthrenes/anthracenes	380
C4-phenanthrenes/anthracenes	<100
Fluoranthene	110
Pyrene	190
C1-fluoranthenes/pyrenes	230
C2-fluoranthenes/pyrenes	<100
C3-fluoranthenes/pyrenes	<100
Benz(a)anthracene	<100
Chrysene	<100
C1-chrysenes	<100
C2-chrysenes	<100
C3-chrysenes	<100
C4-chrysenes	<100
Benzo(e)pyrene	<100
Benzo(a)pyrene	<100
Perylene	<100
Benzo(b)fluoranthene	<100
Benzo(k)fluoranthene	<100
Indeno(1,2,3-cd)pyrene	<100
Dibenzo(a,h)anthracene	<100
Benzo(g,h,i)perylene	<100

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

vo - The value reported fell outside the control limits established for this analyte.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	Method Blank	Client:	Innovative Technical Solutions, Inc.
Date Received:	Not Applicable	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/20/02	Lab ID:	02-165 mb3
Date Analyzed:	02/21/02	Data File:	022126.D
Matrix:	Product	Instrument:	GCMS3
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	94	35	114
2-Fluorobiphenyl	96	43	116
Terphenyl-d14	90	33	141

Compounds:	Concentration ug/g (ppm)
Naphthalene	<10
C1-naphthalenes	<10
C2-naphthalenes	<10
C3-naphthalenes	<10
C4-naphthalenes	<10
Biphenyl	<10
Acenaphthylene	<10
Acenaphthene	<10
Dibenzofuran	<10
Fluorene	<10
C1-fluorenes	<10
C2-fluorenes	<10
C3-fluorenes	<10
Dibenzothiophene	<10
C1-dibenzothiophenes	<10
C2-dibenzothiophenes	<10
C3-dibenzothiophenes	<10
C4-dibenzothiophenes	<10
Phenanthrene	<10
Anthracene	<10
C1-phenanthrenes/anthracenes	<10
C2-phenanthrenes/anthracenes	<10

Compounds:	Concentration ug/g (ppm)
C3-phenanthrenes/anthracenes	<10
C4-phenanthrenes/anthracenes	<10
Fluoranthene	<10
Pyrene	<10
C1-fluoranthenes/pyrenes	<10
C2-fluoranthenes/pyrenes	<10
C3-fluoranthenes/pyrenes	<10
Benz(a)anthracene	<10
Chrysene	<10
C1-chrysenes	<10
C2-chrysenes	<10
C3-chrysenes	<10
C4-chrysenes	<10
Benzo(e)pyrene	<10
Benzo(a)pyrene	<10
Perylene	<10
Benzo(b)fluoranthene	<10
Benzo(k)fluoranthene	<10
Indeno(1,2,3-cd)pyrene	<10
Dibenzo(a,h)anthracene	<10
Benzo(g,h,i)perylene	<10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15
Date Extracted: 02/20/02
Date Analyzed: 02/20/02

RESULTS FROM THE ANALYSIS OF PRODUCT SAMPLES FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Cd	Cu	Pb	Ni	Zn
MW-3 202120-01	<1.0	6.1	<2.0	1.5	2.6
MW-1 202120-02	<1.0	2.8	20	<1.0	<1.0
PZ-F 202120-03	<1.0	<1.0	1.8	1.1	<1.0
Method Blank	<1.0	<1.0	<2.0	<1.0	<1.0

Cd Cadmium
Cu Copper
Pb Lead
Ni Nickel
Zn Zinc

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR VOLATILES BY EPA METHOD 8260B

Laboratory Code: 202033-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
1,1-Dichloroethene	µg/g (ppm)	<100	<100	nm
Benzene	µg/g (ppm)	<100	<100	nm
Trichloroethene	µg/g (ppm)	<100	<100	nm
Toluene	µg/g (ppm)	<100	<100	nm
Chlorobenzene	µg/g (ppm)	<100	<100	nm

Laboratory Code: 202033-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
1,1-Dichloroethene	µg/g (ppm)	500	<100	131	51-159
Benzene	µg/g (ppm)	500	<100	116	81-119
Trichloroethene	µg/g (ppm)	500	<100	99	61-125
Toluene	µg/g (ppm)	500	<100	95	62-131
Chlorobenzene	µg/g (ppm)	500	<100	86	77-125

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
1,1-Dichloroethene	µg/g (ppm)	500	134	53-161
Benzene	µg/g (ppm)	500	117	74-129
Trichloroethene	µg/g (ppm)	500	103	68-125
Toluene	µg/g (ppm)	500	97	65-131
Chlorobenzene	µg/g (ppm)	500	100	81-119

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR ETHERS USING EPA METHOD 8260B

Laboratory Code: 202033-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Methyl t-butyl ether (MTBE)	µg/g (ppm)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	µg/g (ppm)	500	104	65-135

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/26/02
Date Received: 02/19/02
Project: Port of Oakland / 00-152.15

QUALITY ASSURANCE RESULTS FROM TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Laboratory Code: 202120-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Cadmium	µg/g (ppm)	<1.0	<1.0	nm	0-20
Copper	µg/g (ppm)	6.1	5.0	20	0-20
Lead	µg/g (ppm)	<2.0	<2.0	nm	0-20
Nickel	µg/g (ppm)	1.5	1.1	31 a	0-20
Zinc	µg/g (ppm)	2.6	2.3	12	0-20

Laboratory Code: 202120-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Cadmium	µg/g (ppm)	40	<1.0	93	89	50-150	4
Copper	µg/g (ppm)	20	6.1	68	62	50-150	9
Lead	µg/g (ppm)	20	<2.0	96	91	50-150	5
Nickel	µg/g (ppm)	20	1.5	85	83	50-150	2
Zinc	µg/g (ppm)	40	2.6	82	80	50-150	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	Acceptance Criteria
Cadmium	µg/g (ppm)	40	114	80-120
Copper	µg/g (ppm)	20	111	80-120
Lead	µg/g (ppm)	20	109	80-120
Nickel	µg/g (ppm)	20	110	80-120
Zinc	µg/g (ppm)	40	113	80-120

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

RECEIVED
MAR 1 0 2002

March 6, 2002

Rachel Hess, Project Manager
Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, CA 94598

Dear Ms. Hess:

Included are the additional results from the testing of material submitted on February 19, 2002 from your Port of Oakland / 00-152.15 project. Results for analysis of DIPE, ETBE and TAME have been reported as requested.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Morrow

Charlene Morrow
Chemist

Enclosures
ITS0306R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-3	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/19/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/21/02	Lab ID:	202120-01
Date Analyzed:	02/21/02	Data File:	022116.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	132	54	133
1,2-Dichloroethane-d4	102	48	140
Toluene-d8	118	47	145
4-Bromofluorobenzene	105	52	139

Compounds:	Concentration ug/g (ppm)
Diisopropyl ether (DIPE)	<100
Ethyl t-butyl ether (ETBE)	<100
t-Amyl methyl ether (TAME)	<100

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-1	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/19/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/21/02	Lab ID:	202120-02
Date Analyzed:	02/21/02	Data File:	022117.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	112	54	133
1,2-Dichloroethane-d4	85	48	140
Toluene-d8	113	47	145
4-Bromofluorobenzene	103	52	139

Compounds:	Concentration ug/g (ppm)
Diisopropyl ether (DIPE)	<100
Ethyl t-butyl ether (ETBE)	<100
t-Amyl methyl ether (TAME)	<100

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	PZ-F	Client:	Innovative Technical Solutions, Inc.
Date Received:	02/19/02	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/21/02	Lab ID:	202120-03
Date Analyzed:	02/21/02	Data File:	022118.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	112	54	133
1,2-Dichloroethane-d4	77	48	140
Toluene-d8	92	47	145
4-Bromofluorobenzene	105	52	139

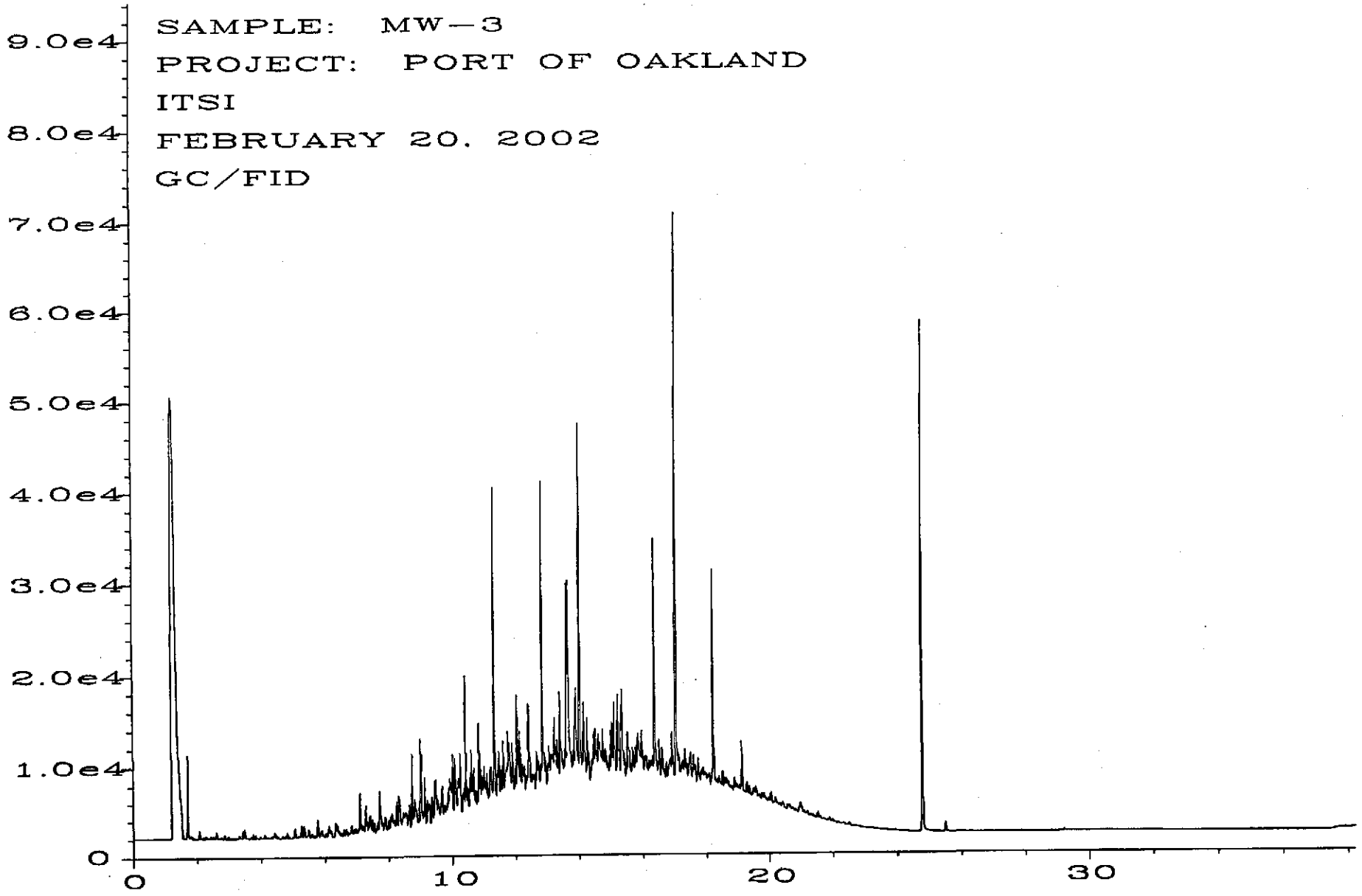
Compounds:	Concentration ug/g (ppm)
Diisopropyl ether (DIPE)	<100
Ethyl t-butyl ether (ETBE)	<100
t-Amyl methyl ether (TAME)	<100

Analysis For Volatile Compounds By EPA Method 8260B

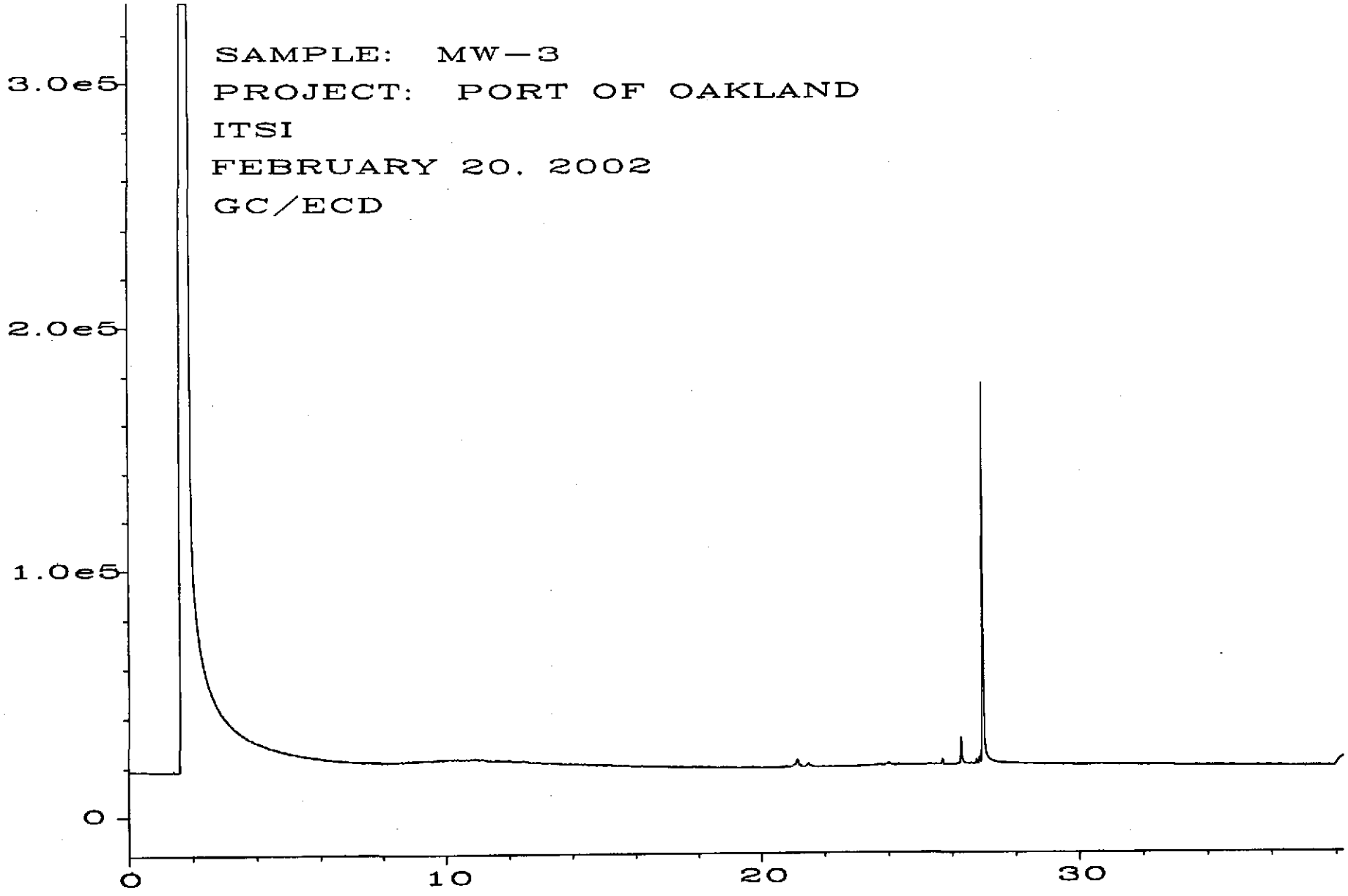
Client Sample ID:	Method Blank	Client:	Innovative Technical Solutions, Inc.
Date Received:	Not Applicable	Project:	Port of Oakland / 00-152.15
Date Extracted:	02/21/02	Lab ID:	02-161 mb2
Date Analyzed:	02/21/02	Data File:	022115.D
Matrix:	Product	Instrument:	5972 -Ins
Units:	ug/g (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	127	54	133
1,2-Dichloroethane-d4	88	48	140
Toluene-d8	111	47	145
4-Bromofluorobenzene	118	52	139

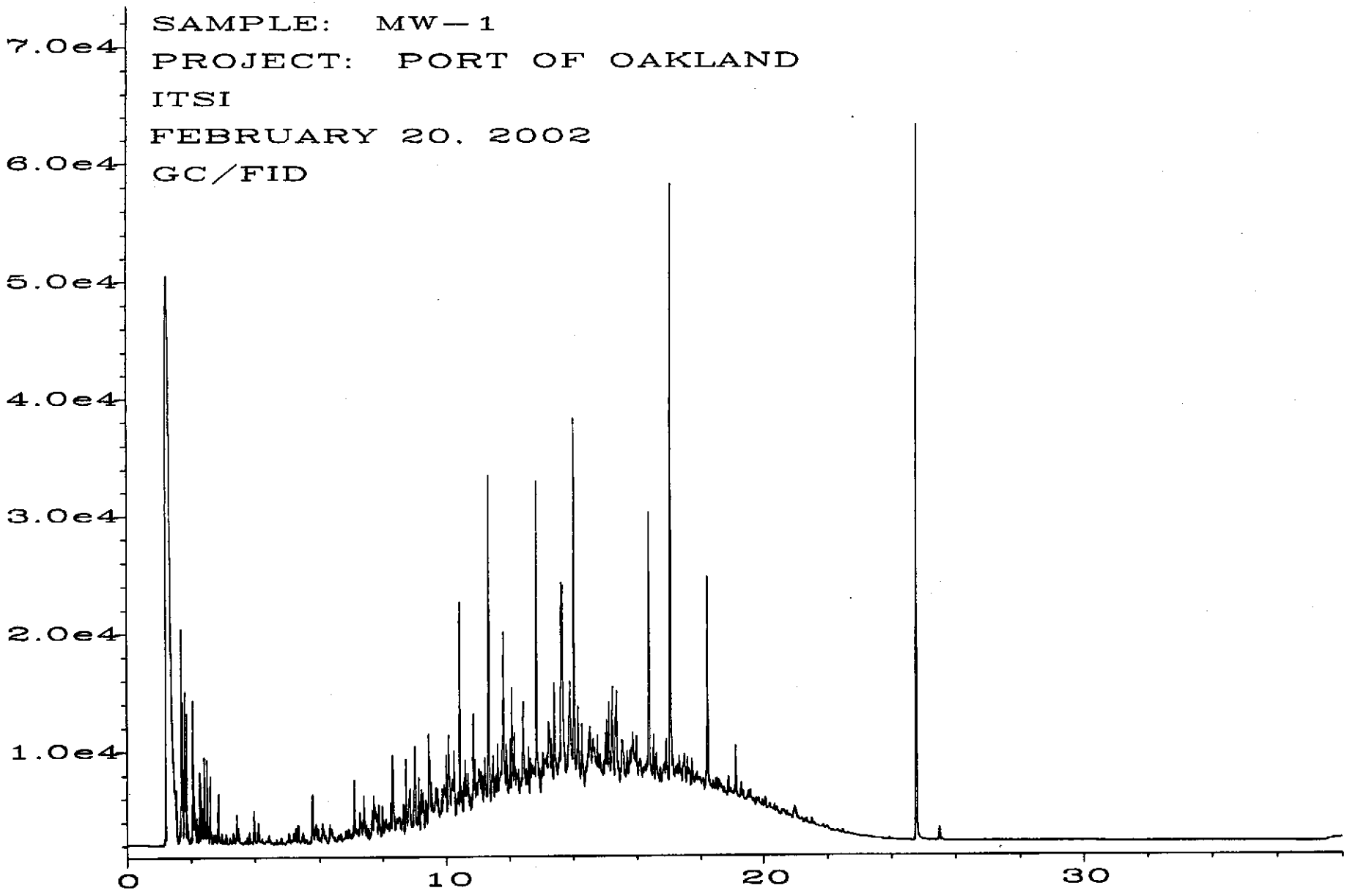
Compounds:	Concentration ug/g (ppm)
Diisopropyl ether (DIPE)	<100
Ethyl t-butyl ether (ETBE)	<100
t-Amyl methyl ether (TAME)	<100



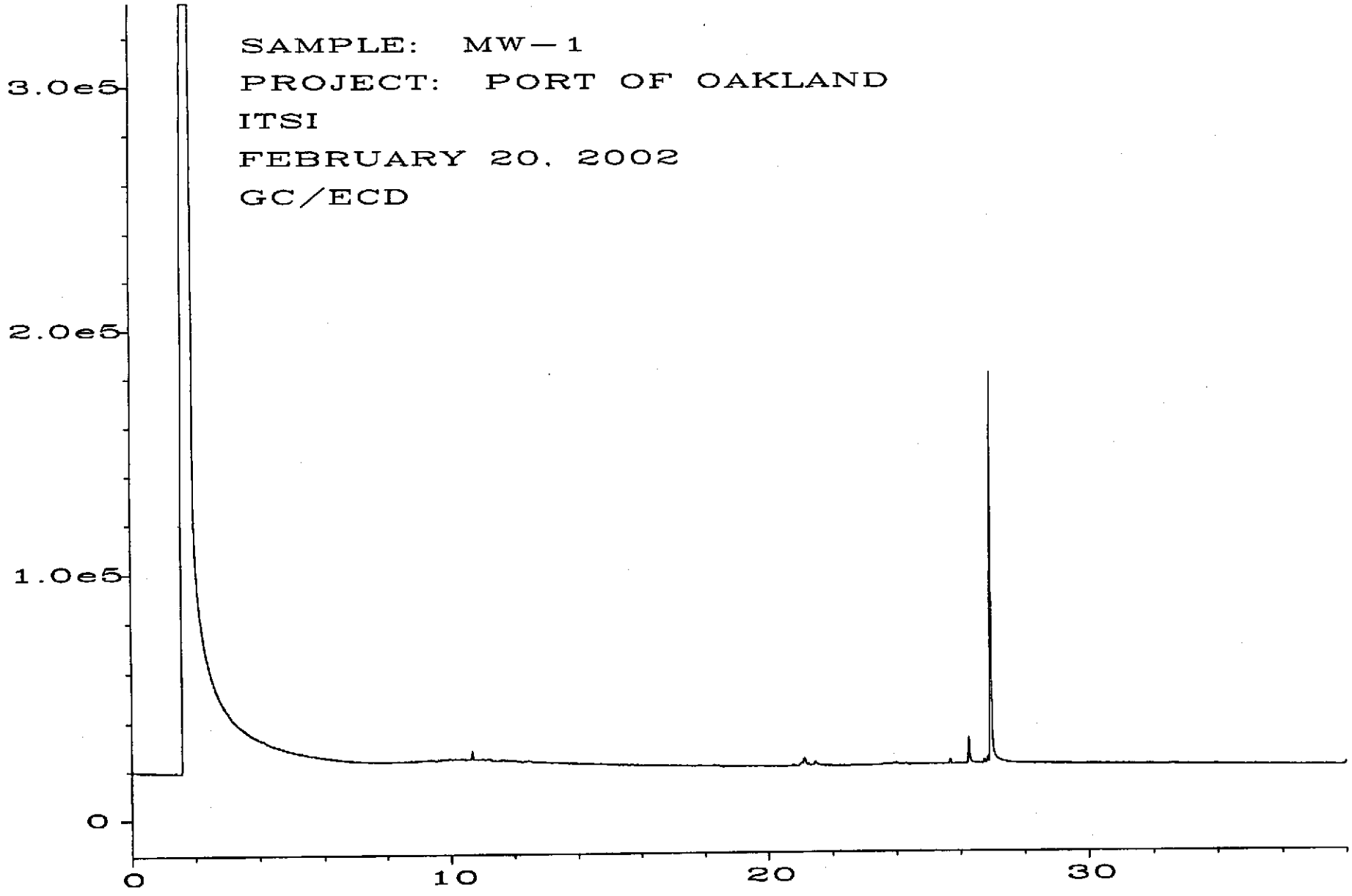
Sig. 1 in C:\HPCHEM\1\DATA\02-20-02\003F0201.D



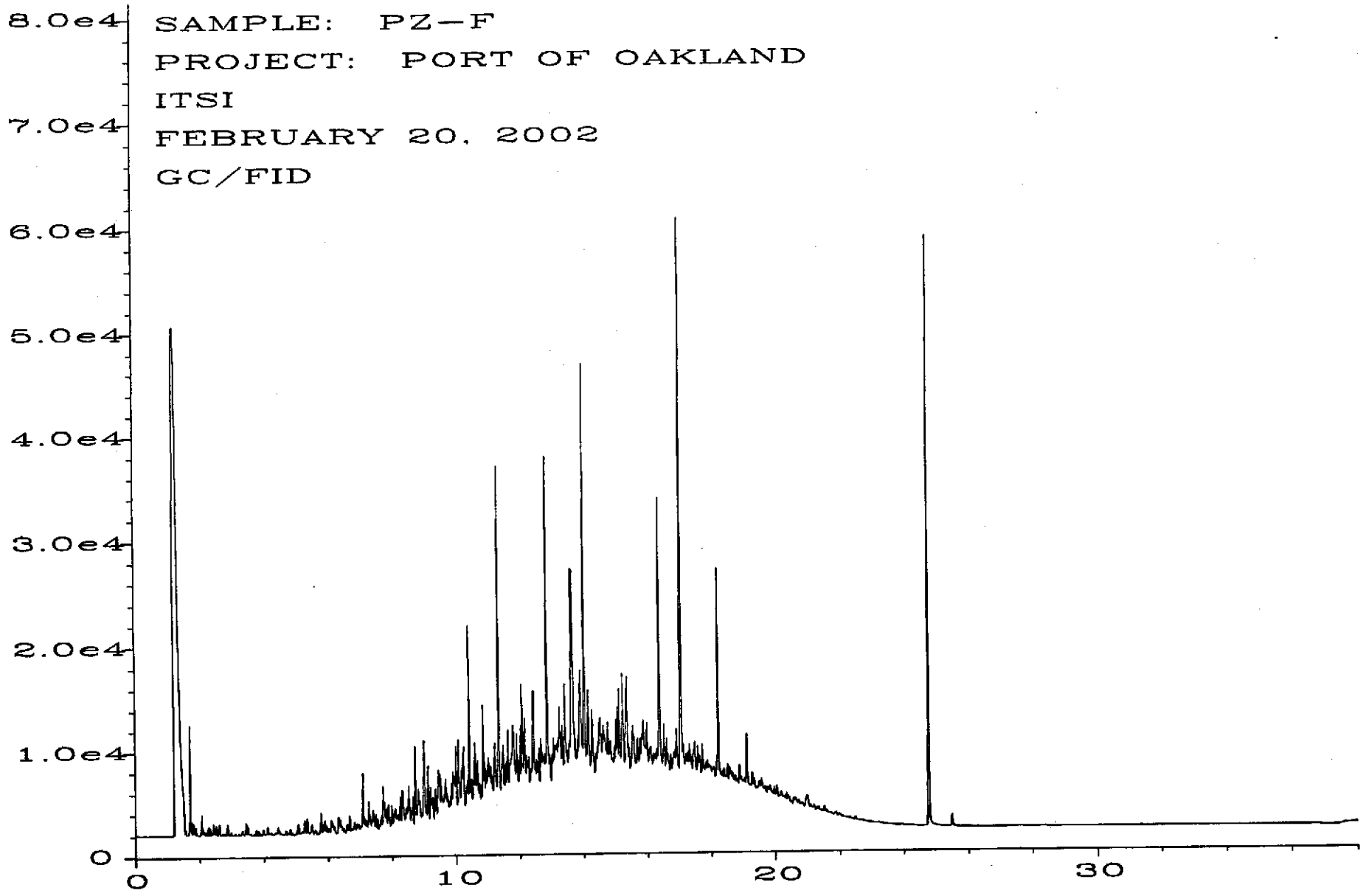
Sig. 2 in C:\HPCHEM\1\DATA\02-20-02\003R0201.D



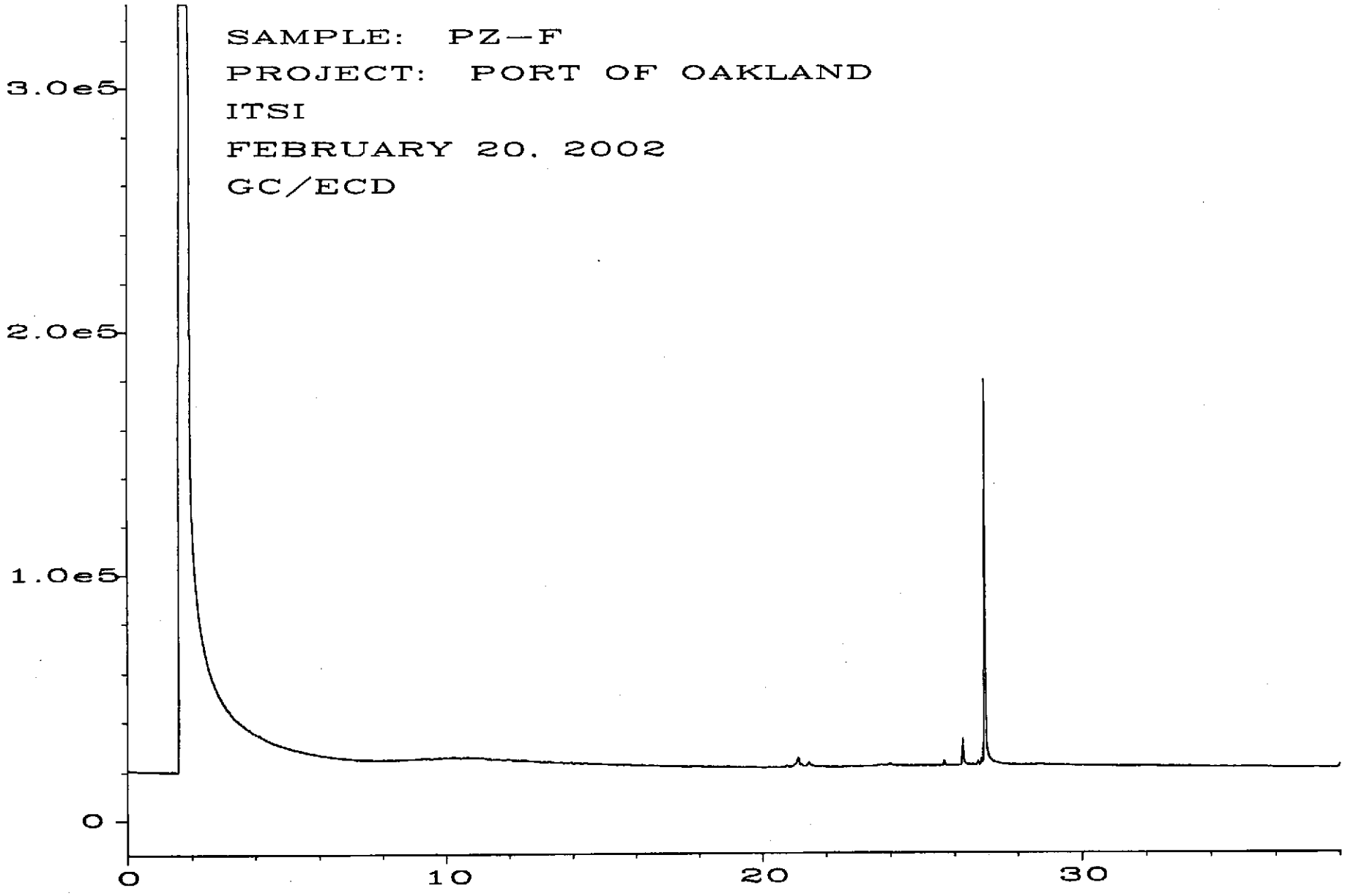
Sig. 1 in C:\HPCHEM\1\DATA\02-20-02\004F0201.D



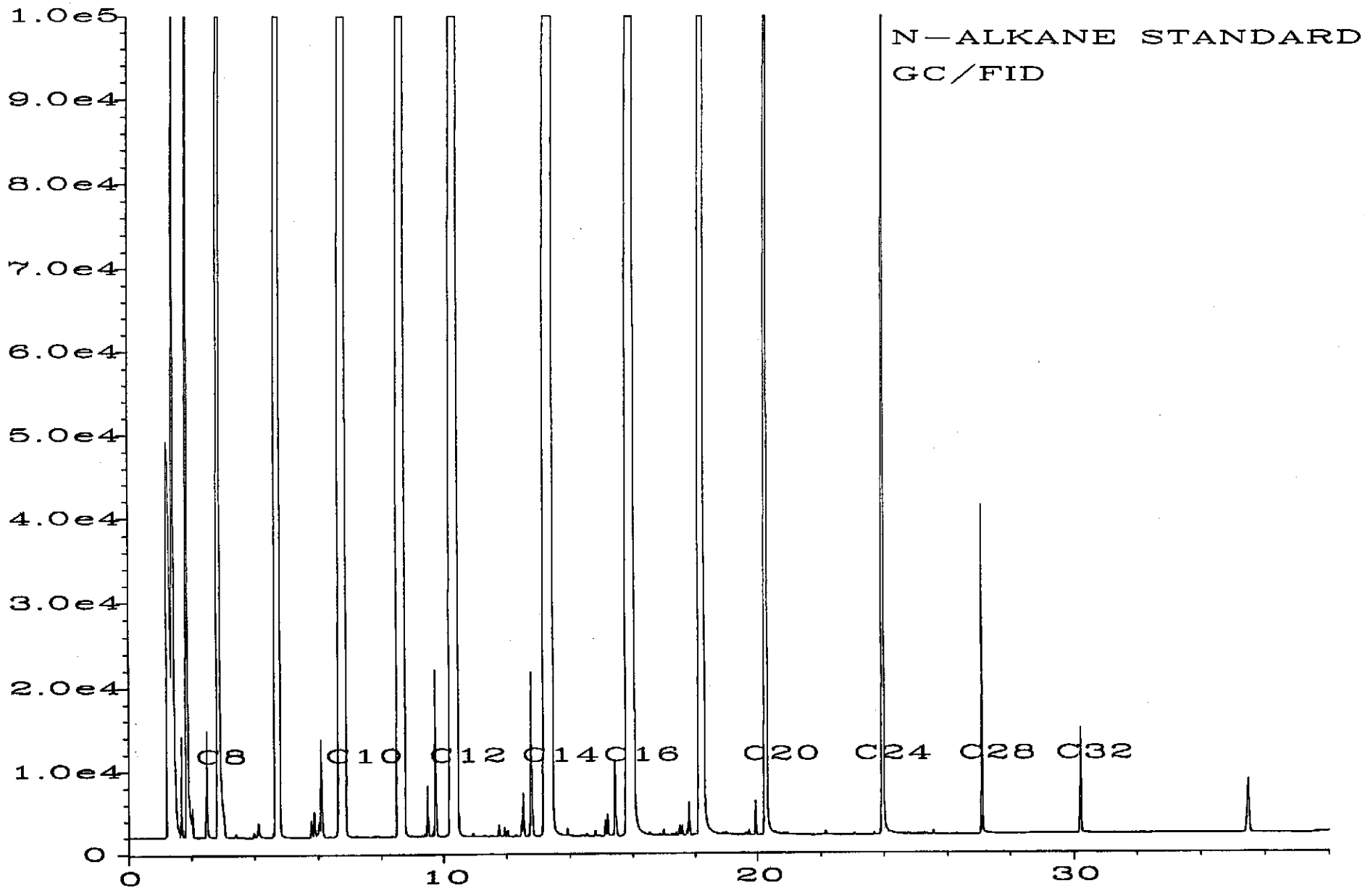
Sig. 2 in C:\HPCHEM\1\DATA\02-20-02\004R0201.D



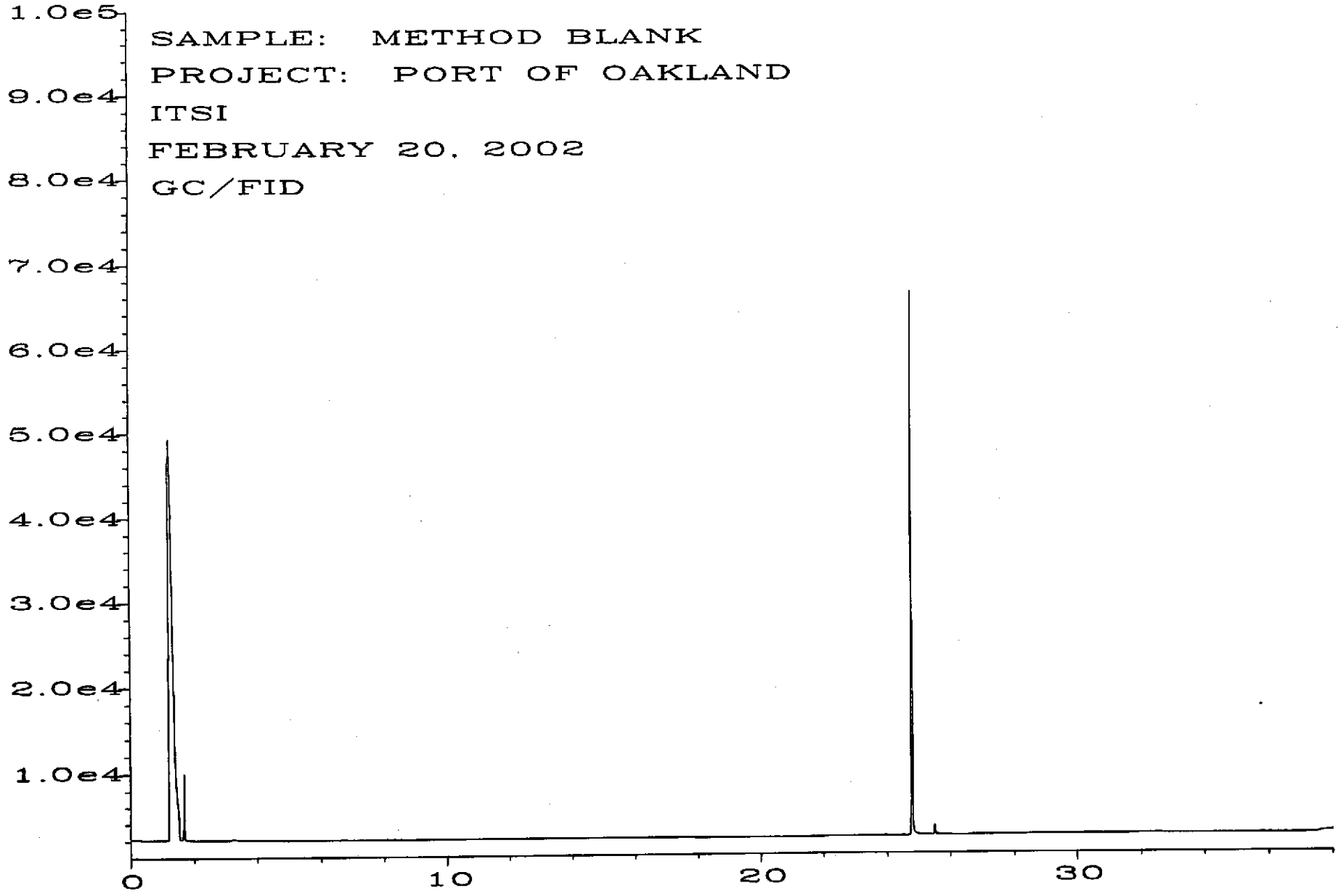
Sig. 1 in C:\HPCHEM\1\DATA\02-20-02\005F0201.D



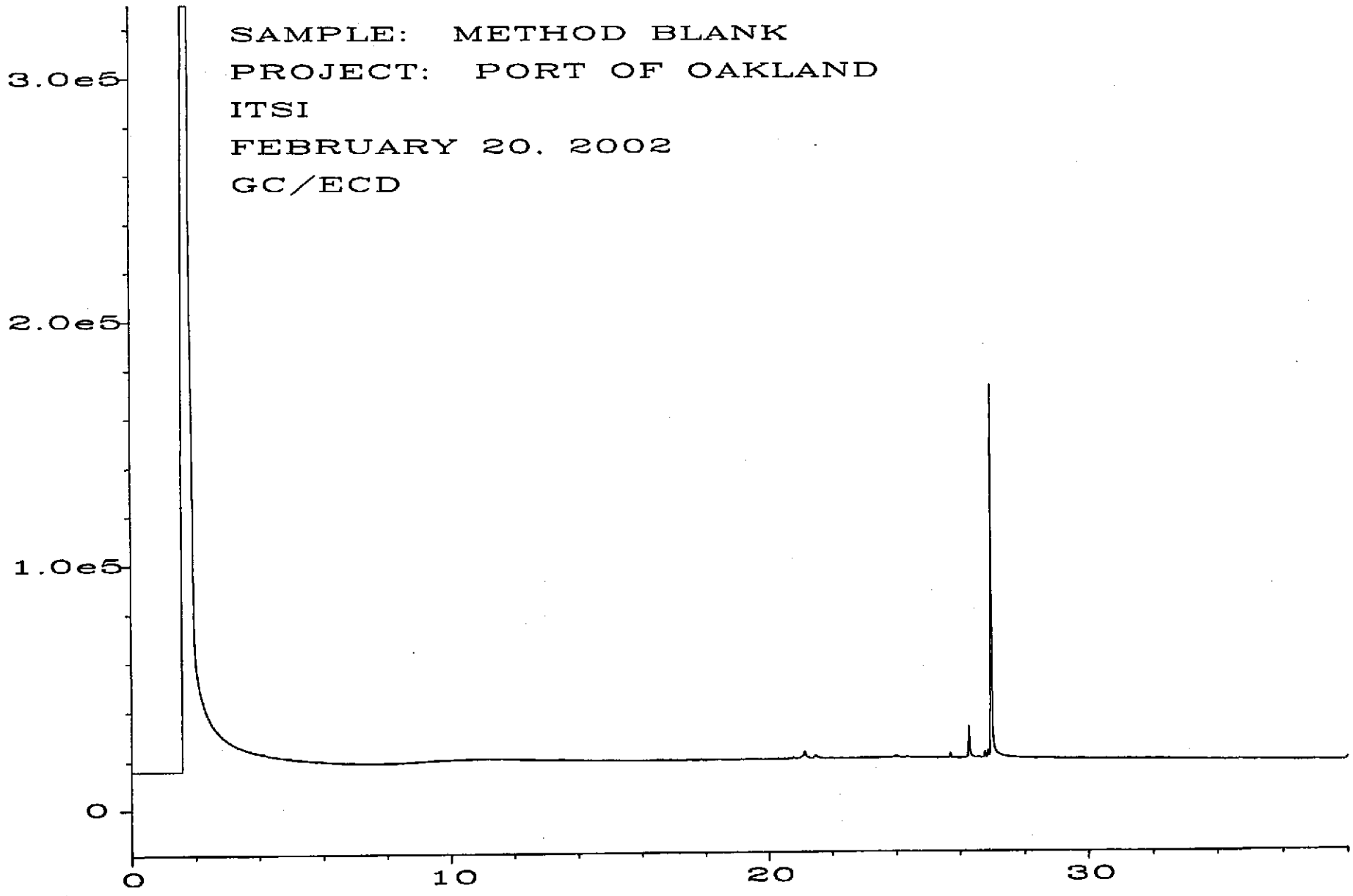
Sig. 2 in C:\HPCHEM\1\DATA\02-20-02\005R0201.D



Sig. 1 in C:\HPCHEM\1\DATA\02-20-02\100F0801.D

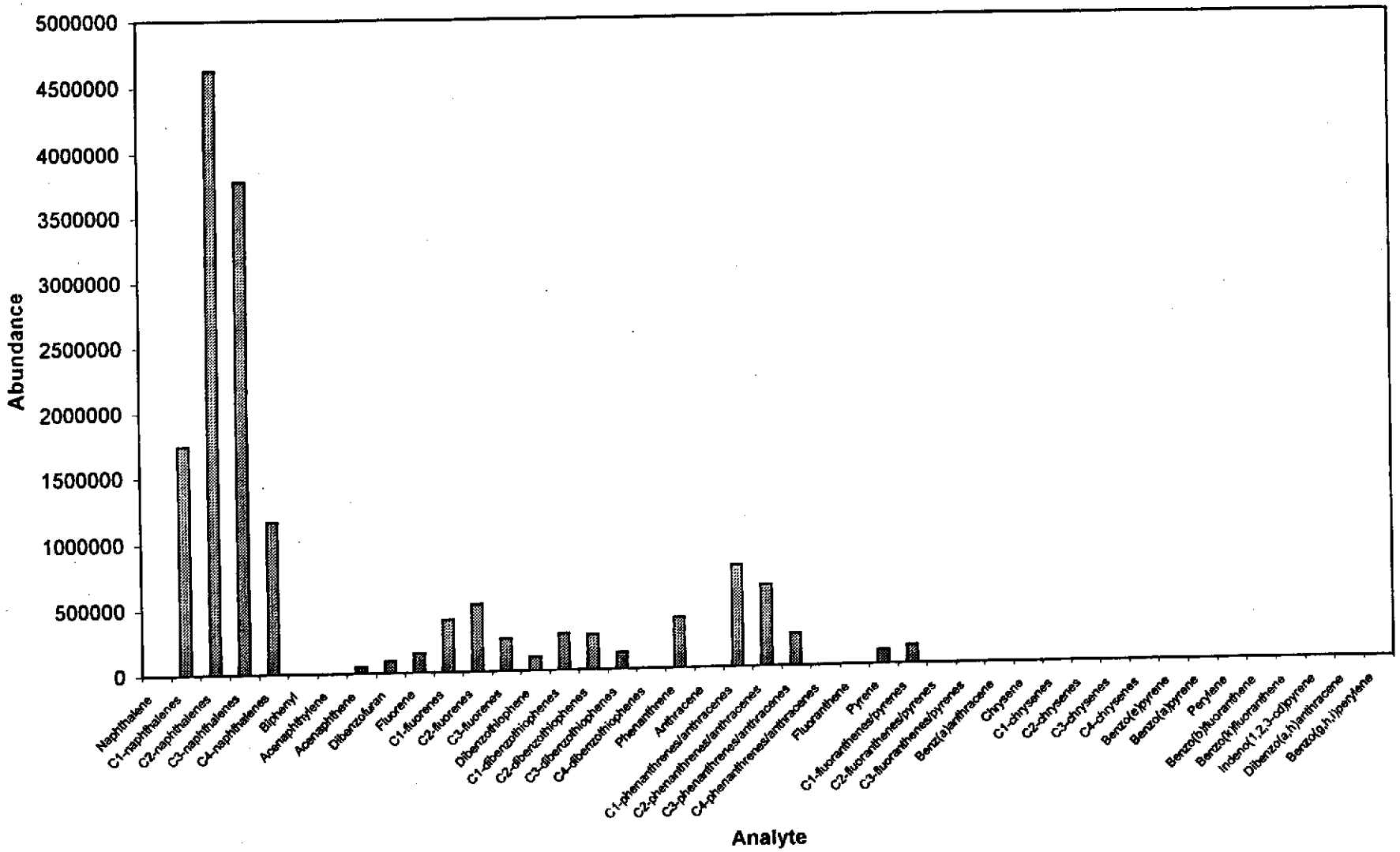


Sig. 1 in C:\HPCHEM\1\DATA\02-20-02\002F0201.D

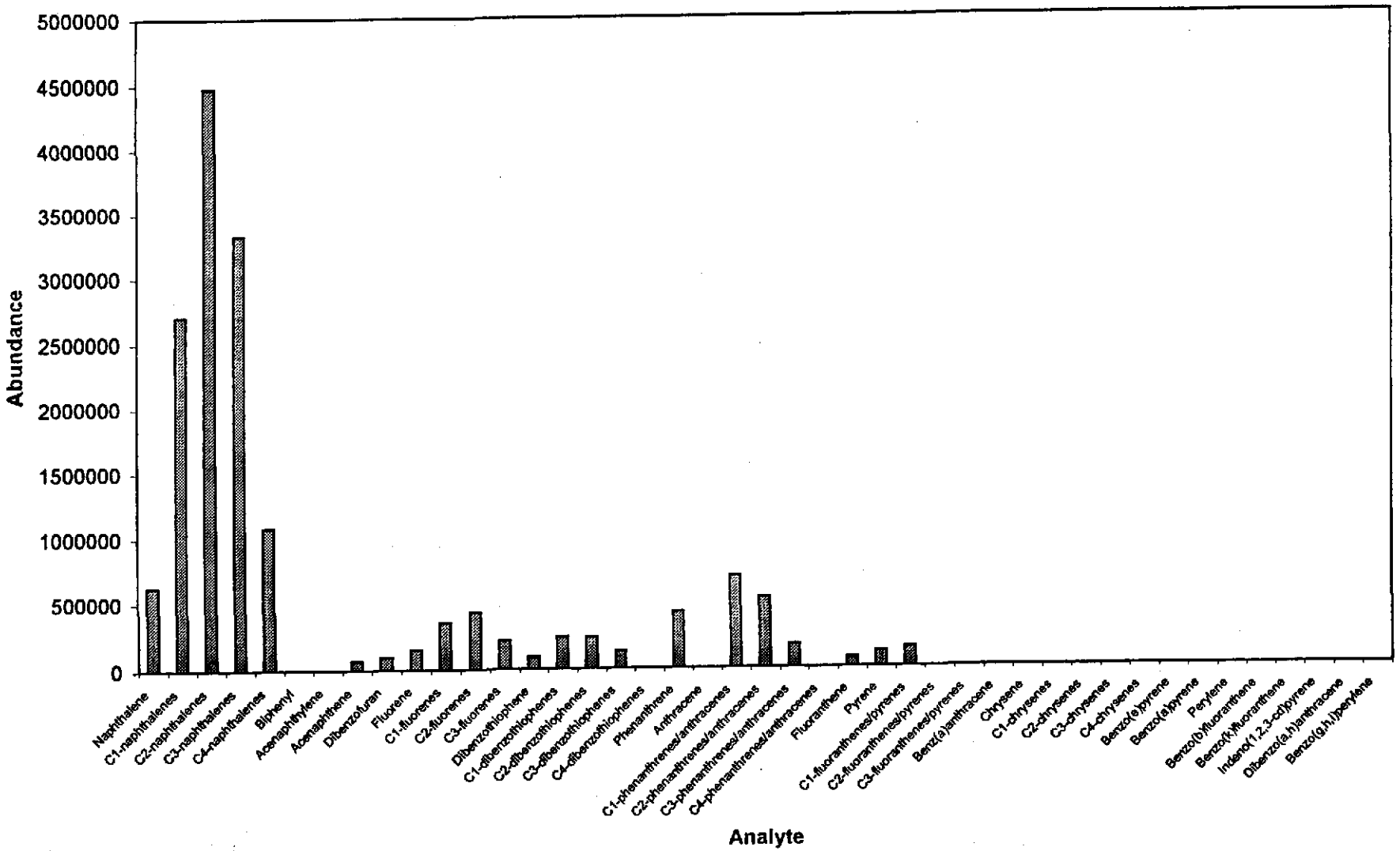


Sig. 2 in C:\HPCHEM\1\DATA\02-20-02\002R0201.D

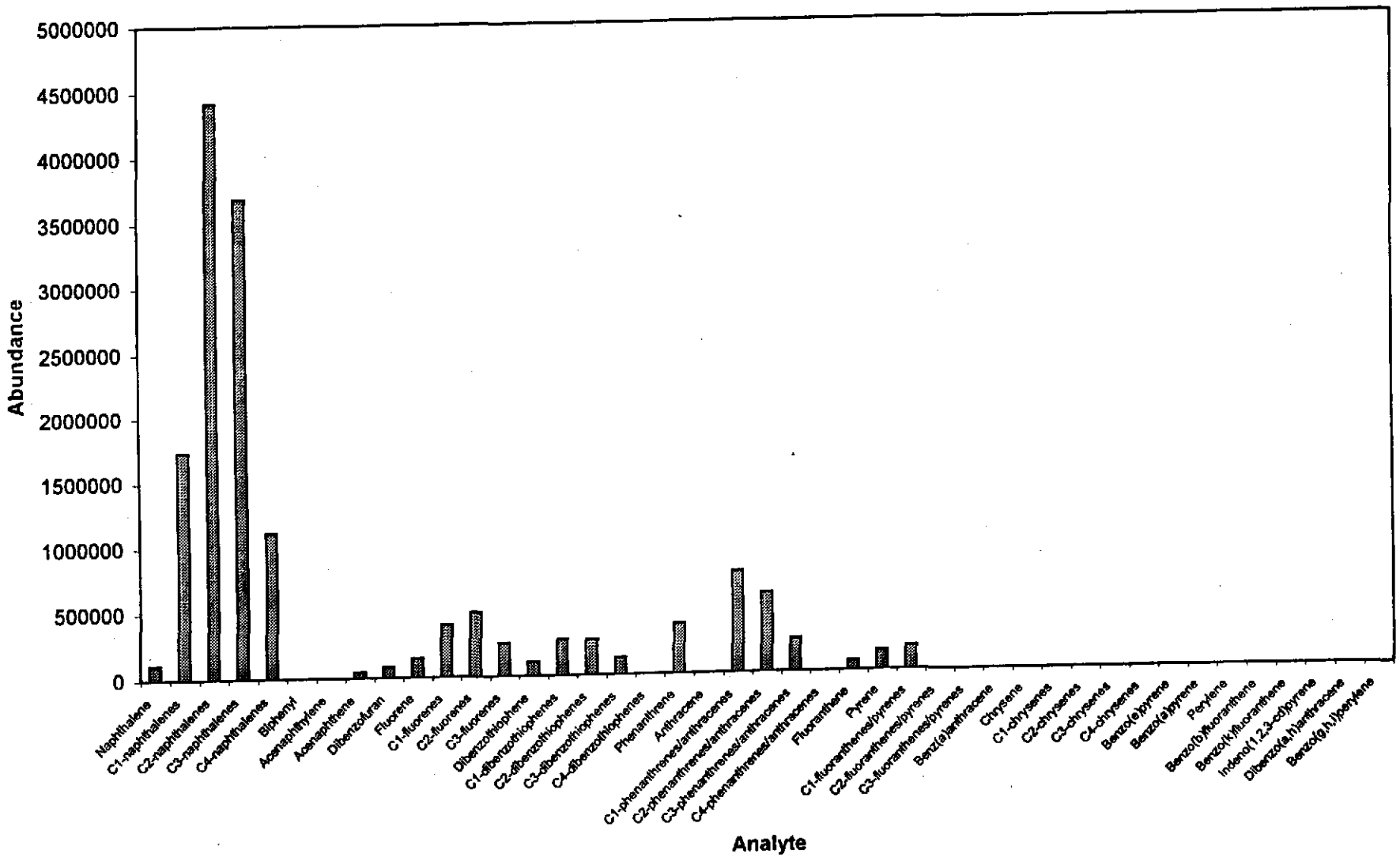
Sample ID: MW-3



Sample ID: MW-1



Sample ID: PZ-F



APPENDIX D

CONE PENETRATION TEST AND PEIZOMETER INSTALLATION GEOTECHNICAL ANALYTICAL RESULTS

COOPER TESTING LABORATORY

1951 Colony St., Unit X, Mountain View, CA 94043
Tel: 650 968-9472 Fax: 650 968-4228
1360-D Industrial Ave., Petaluma, CA 94952
Tel: 707 765-2589 Fax: 707 765-1227
email: cooper@coopertestinglabs.com
www.coopertestinglabs.com

LETTER OF TRANSMITTAL

TO: ITSI
2855 Mitchell Drive, Suite 111
Walnut Creek, CA 94598
Attn: Rachel Hess

DATE: March 12, 2002

PROJECT: 00-152.15 / Port of Oakland

CTL #: 261-014

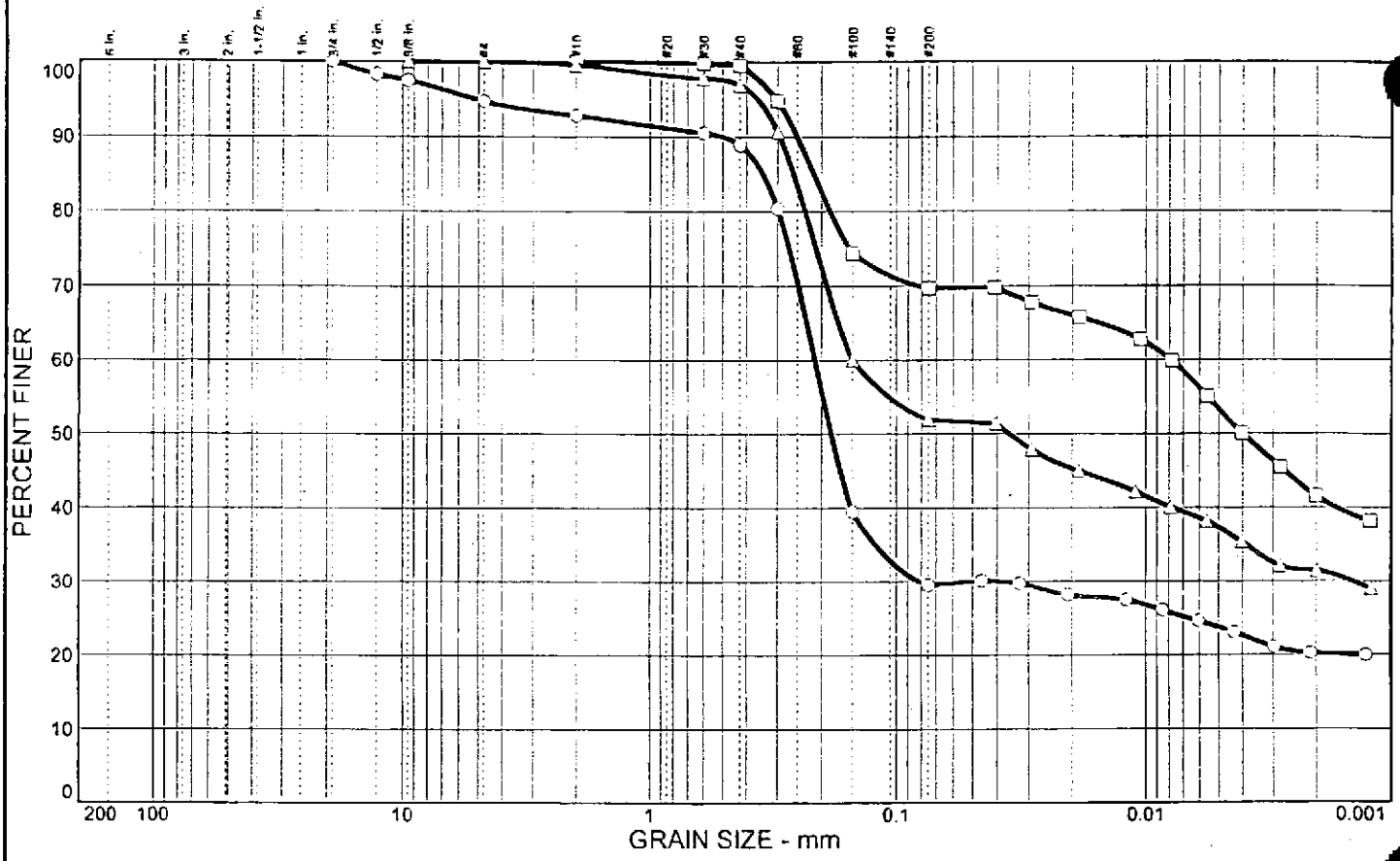
ENCLOSED: Laboratory soil test data.

REMARKS:

David R. Cooper

COOPER TESTING LABS

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		5.3	65.2	9.3	20.2	SM		19	20
□			30.3	28.1	41.6	CL		20	46
△		0.1	48.0	20.5	31.4	CL		13	29

SIEVE inches size	PERCENT FINER ○	□	△
3/4	100.0		
1/2	98.3		
3/8	97.5		100.0
	GRAIN SIZE		
D_{60}	0.212	0.0079	0.150
D_{30}	0.0392		0.0014
D_{10}			
	COEFFICIENTS		
C_C			
C_U			

SIEVE number size	PERCENT FINER ○	□	△
#4	94.7		99.9
#10	92.8	100.0	99.5
#30	90.5	99.8	97.8
#40	88.9	99.5	96.9
#50	80.4	94.8	90.7
#100	39.5	74.4	60.0
#200	29.5	69.7	51.9

SOIL DESCRIPTION

○ brown silty SAND

□ dark gray sandy lean CLAY

△ brownish sandy lean CLAY

REMARKS:

○

□

△

○ Source: PZ-A Elev./Depth: 6-6.5'

□ Source: PZ-A Elev./Depth: 12.5-13'

△ Source: PZ-B Elev./Depth: 5.5-6'

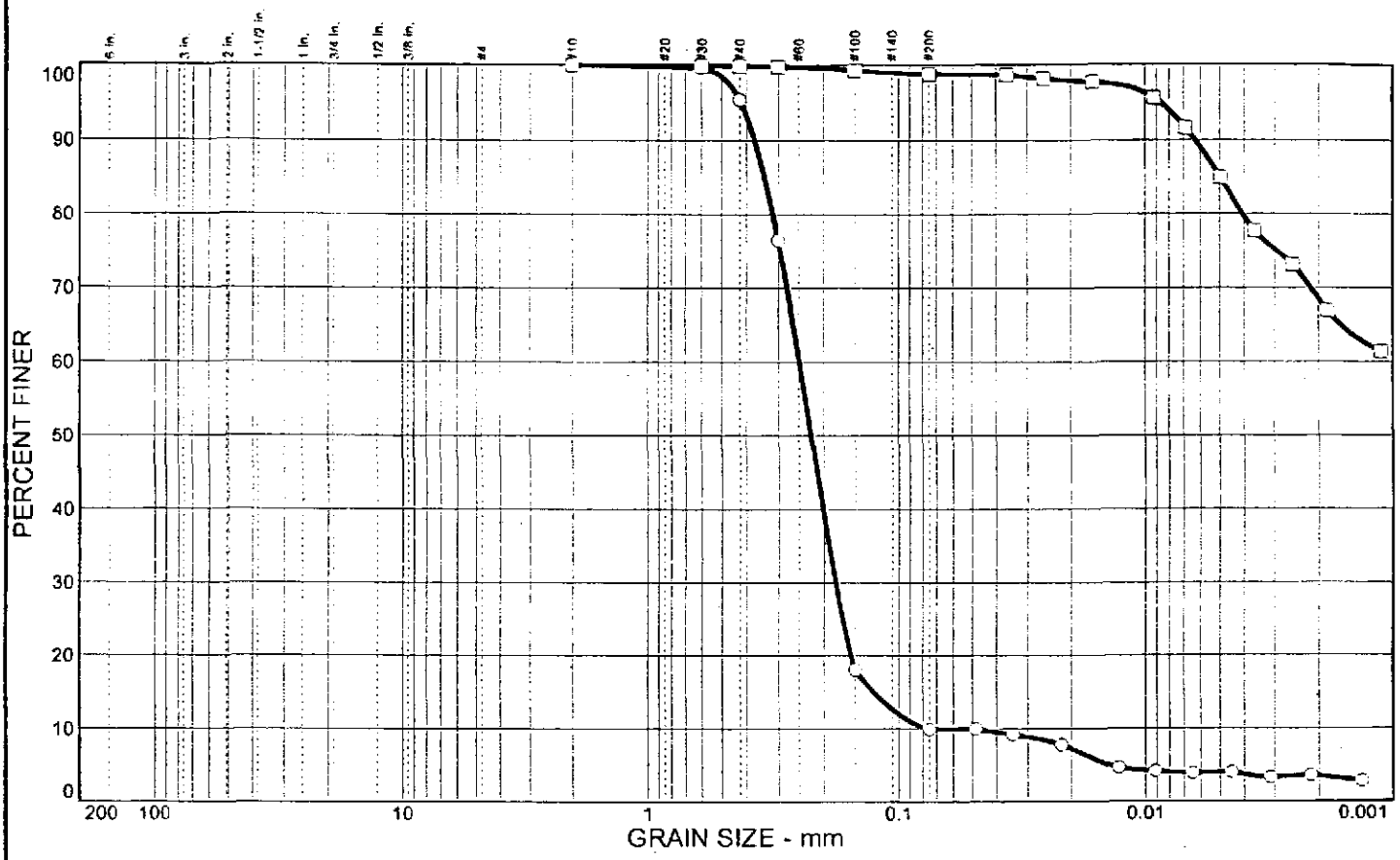
COOPER TESTING LABORATORY

Client: ITSI

Project: 00-152-15 / Port of Oakland

Project No.: 261-014 Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			90.1	6.4	3.5	SP-SM		23	19
□			1.2	30.3	68.5	CH		33	84

SIEVE inches size	PERCENT FINER ○	□
GRAIN SIZE		
D_{60}	0.248	
D_{30}	0.179	
D_{10}	0.0484	
COEFFICIENTS		
C_C	2.66	
C_U	5.13	

SIEVE number size	PERCENT FINER ○	□
#10	100.0	100.0
#30	99.6	99.9
#40	95.4	99.9
#50	76.4	99.8
#100	18.0	99.3
#200	9.9	98.8

SOIL DESCRIPTION

○ gray poorly graded SAND with silt

□ gray fat CLAY

REMARKS:

○ Temperature and deflocculent correction factor had to be increased by 5 to lower hydrometer reading to match 200 sieve reading, probably

□ F.M.=0.01

○ Source: PZ-D Elev./Depth: 7'

□ Source: PZ-E Elev./Depth: 11.5-12'

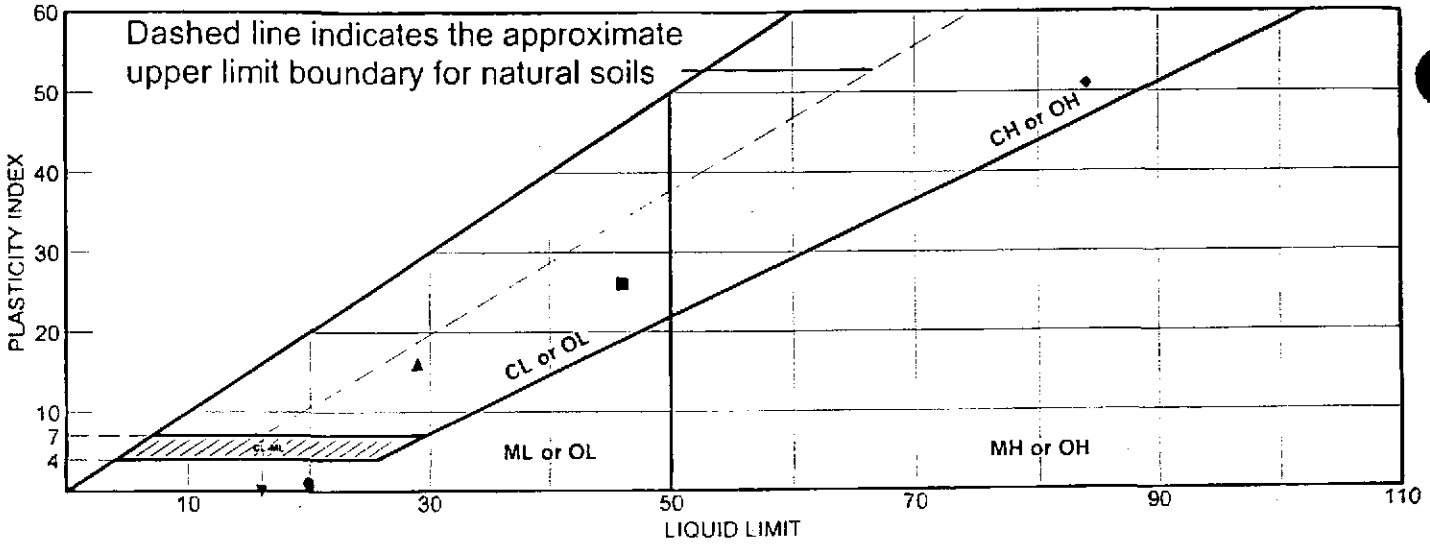
COOPER TESTING LABORATORY

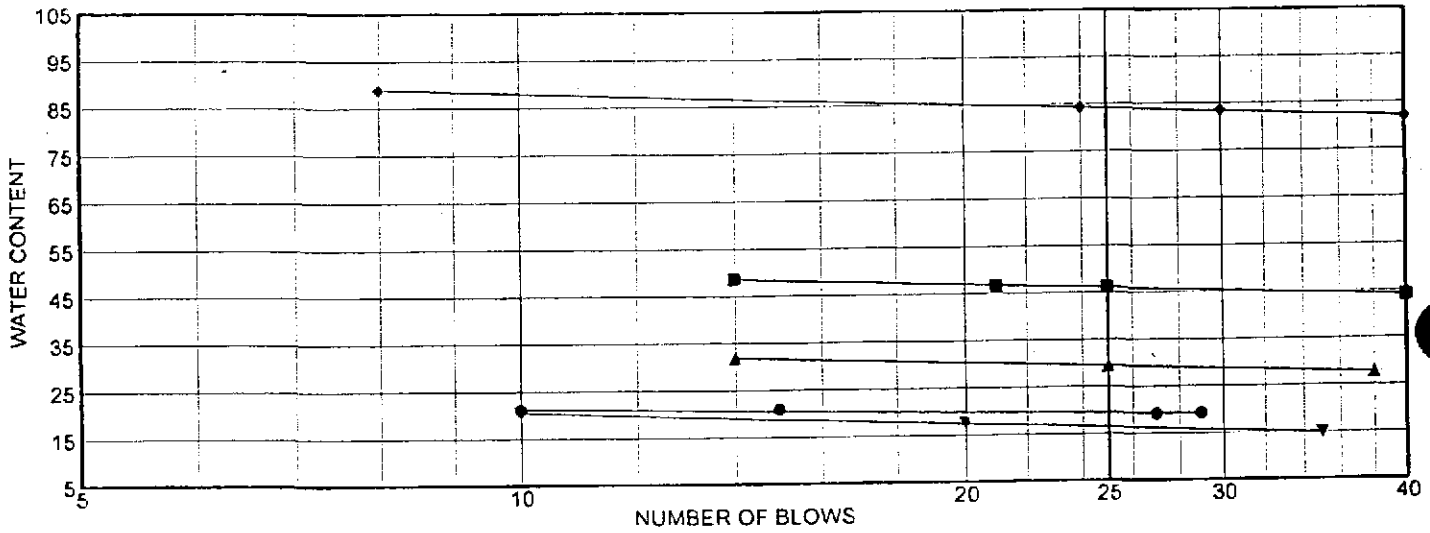
Client: ITSI

Project: 00-152-15 / Port of Oakland

Project No.: 261-014 Plate

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	brown silty SAND	20	19	1	88.9	29.5	SM
■	dark gray sandy lean CLAY	46	20	26	99.5	69.7	CL
▲	brownish sandy lean CLAY	29	13	16	96.9	51.9	CL
◆	gray fat CLAY	84	33	51	99.9	98.8	CH
▼	gray poorly graded SAND with silt	16	23	NP	95.4	9.9	SP-SM

Project No. 261-014 **Client:** ITSI

Project: 00-152-15 / Port of Oakland

● **Source:** PZ-A **Elev./Depth:** 6-6.5'
■ **Source:** PZ-A **Elev./Depth:** 12.5-13'
▲ **Source:** PZ-B **Elev./Depth:** 5.5-6'
◆ **Source:** PZ-E **Elev./Depth:** 11.5-12'
▼ **Source:** PZ-D **Elev./Depth:** 7'

Remarks:

●
■
▲
◆
▼

LIQUID AND PLASTIC LIMITS TEST REPORT

COOPER TESTING LABORATORY

Plate

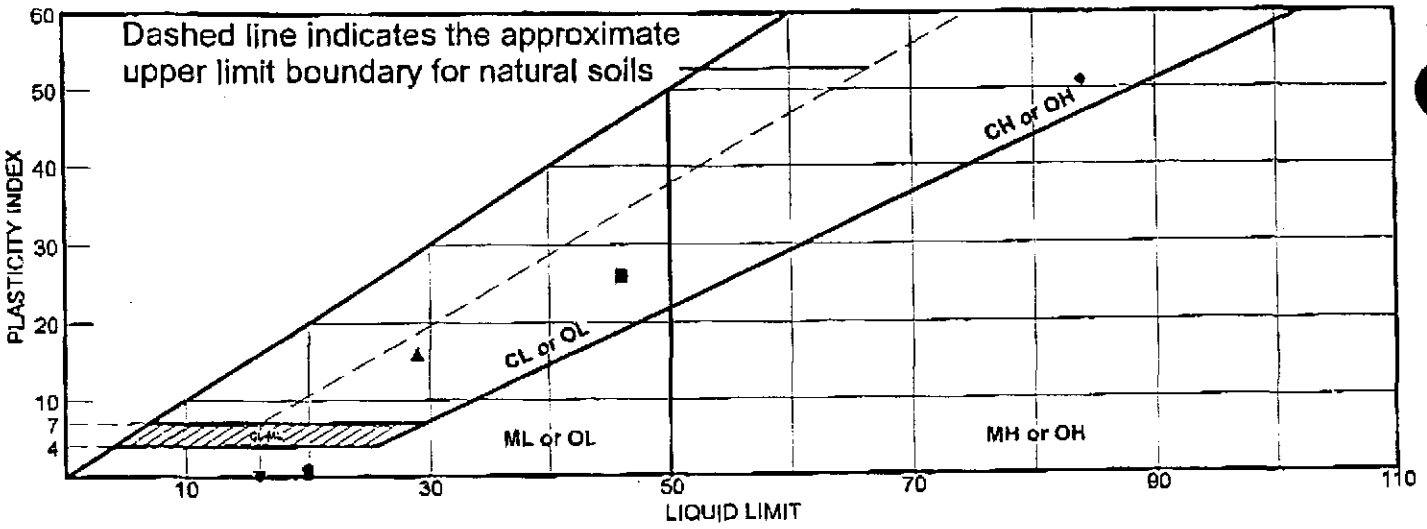
COOPER
HOME PAGE
COOPER TESTING LABORATORY
1369-D Industrial Ave., Petaluma, CA 94952
Tel: 707 765-2589 Fax: 707 765-1227

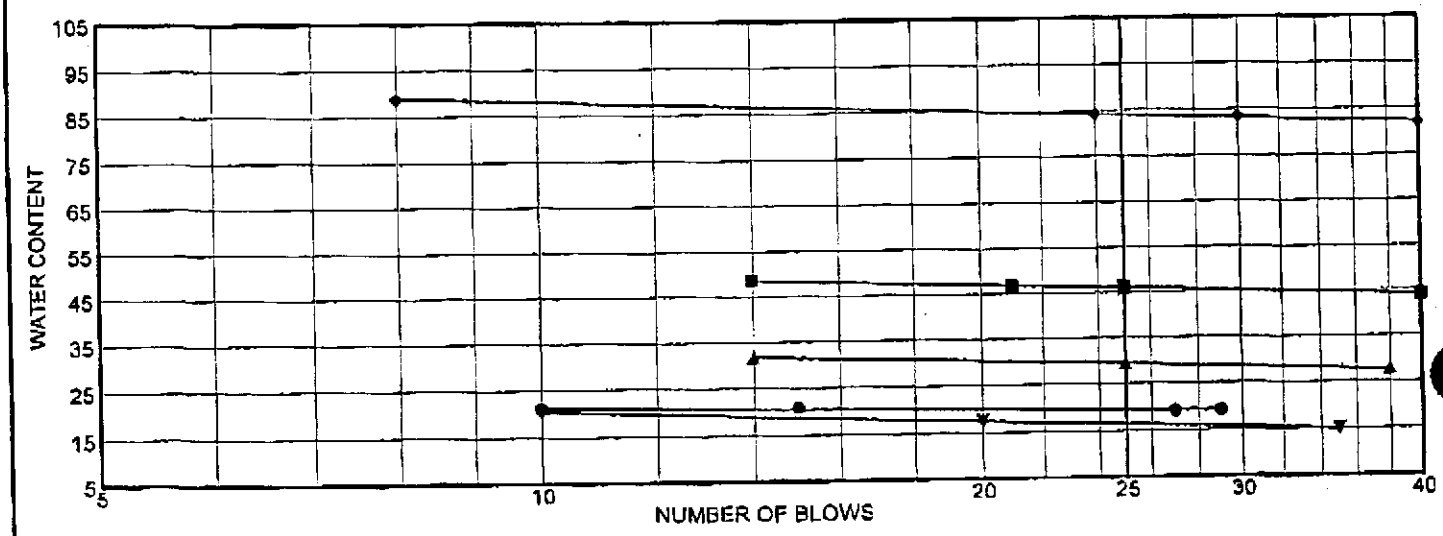
JOB NO.: 00-152.15 CLIENT: I.T.S.I. PROJECT: PORT OF OAKLAND
P.O. # RECEIVED: NEEDED BY:
RESULTS TO: RACHEL HESS (925) 256-8711 ADDITIONAL COPIES TO:

BORING	DEPTH	TEST	INSTRUCTIONS
PZ-D	7'	PI/SA+HYD	
PZ-A	6'	PI/SA+HYD	
PZ-A	12.5'	PI/SA+HYD	
PZ-B	5.5	PI/SA+HYD	
PZ-E	11.5	PI/SA+HYD	

NAME OF TEST	PRICE	No	TOTAL
NC			
MD			
MD 3"			
PI			
SA			
HYD			
SA + HYD			
-200 WASH			
Gs			
% ORGANICS			
POROSITY			
UC			
DS-UU			
DS-CU			
DS RESID.			
DS-CD			
TX-UU			
TX-CU			
TX-CUPP			
CONSOL			
Shrink-Swell			
EXP. PRESS.			
SS + EXP.			
% COLLAPSE			
SHRINK LIMIT			
PERM ch			
PERM fh			
PERM BP-SAT			
PROCTOR STD			
PROCTOR 4"			
PROCTOR 6"			
CAL-IMPACT			
R-VALUE			
SE			
DURABILITY			
pH			
LOGGING			
HOURS			

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	brown silty SAND	20	19	1	88.9	29.5	SM
■	dark gray sandy lean CLAY	46	20	26	99.5	69.7	CL
▲	brownish sandy lean CLAY	29	13	16	96.9	51.9	CL
◆	gray fat CLAY	84	33	51	99.9	98.8	CH
▼	gray poorly graded SAND with silt	16	23	NP	95.4	9.9	SP-SM

Project No. 261-014 **Client:** ITSI

Project: 00-152-15 / Port of Oakland

●	**Source:** PZ-A	**Elev./Depth:** 6-6.5'
■	**Source:** PZ-A	**Elev./Depth:** 12.5-13'
▲	**Source:** PZ-B	**Elev./Depth:** 5.5-6'
◆	**Source:** PZ-E	**Elev./Depth:** 11.5-12'
▼	**Source:** PZ-D	**Elev./Depth:** 7'

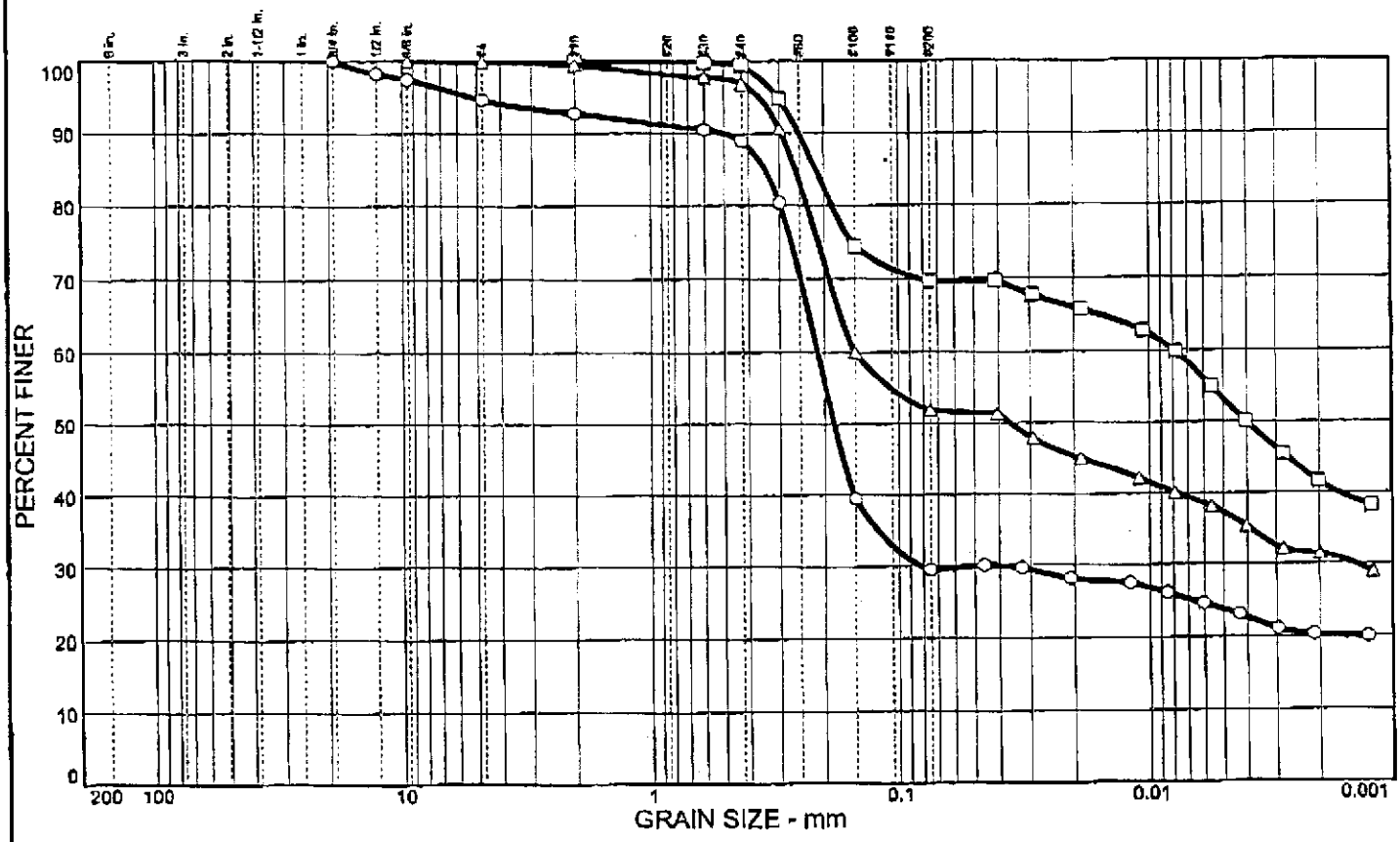
Remarks:

LIQUID AND PLASTIC LIMITS TEST REPORT

COOPER TESTING LABORATORY

Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		5.3	65.2	9.3	20.2	SM		19	20
□			30.3	28.1	41.6	CL		20	46
△		0.1	48.0	20.5	31.4	CL		13	29

SIEVE inches size	PERCENT FINER ○	□	△
3/4	100.0		
1/2	98.3		
3/8	97.5		100.0
	GRAIN SIZE		
D_{60}	0.212	0.0079	0.150
D_{30}	0.0392		0.0014
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○	□	△
#4	94.7		99.9
#10	92.8	100.0	99.5
#30	90.5	99.8	97.8
#40	88.9	99.5	96.9
#50	80.4	94.8	90.7
#100	39.5	74.4	60.0
#200	29.5	69.7	51.9

SOIL DESCRIPTION

○ brown silty SAND

□ dark gray sandy lean CLAY

△ brownish sandy lean CLAY

REMARKS:

○

□

△

○ Source: PZ-A Elev./Depth: 6-6.5'

□ Source: PZ-A Elev./Depth: 12.5-13'

△ Source: PZ-B Elev./Depth: 5.5-6'

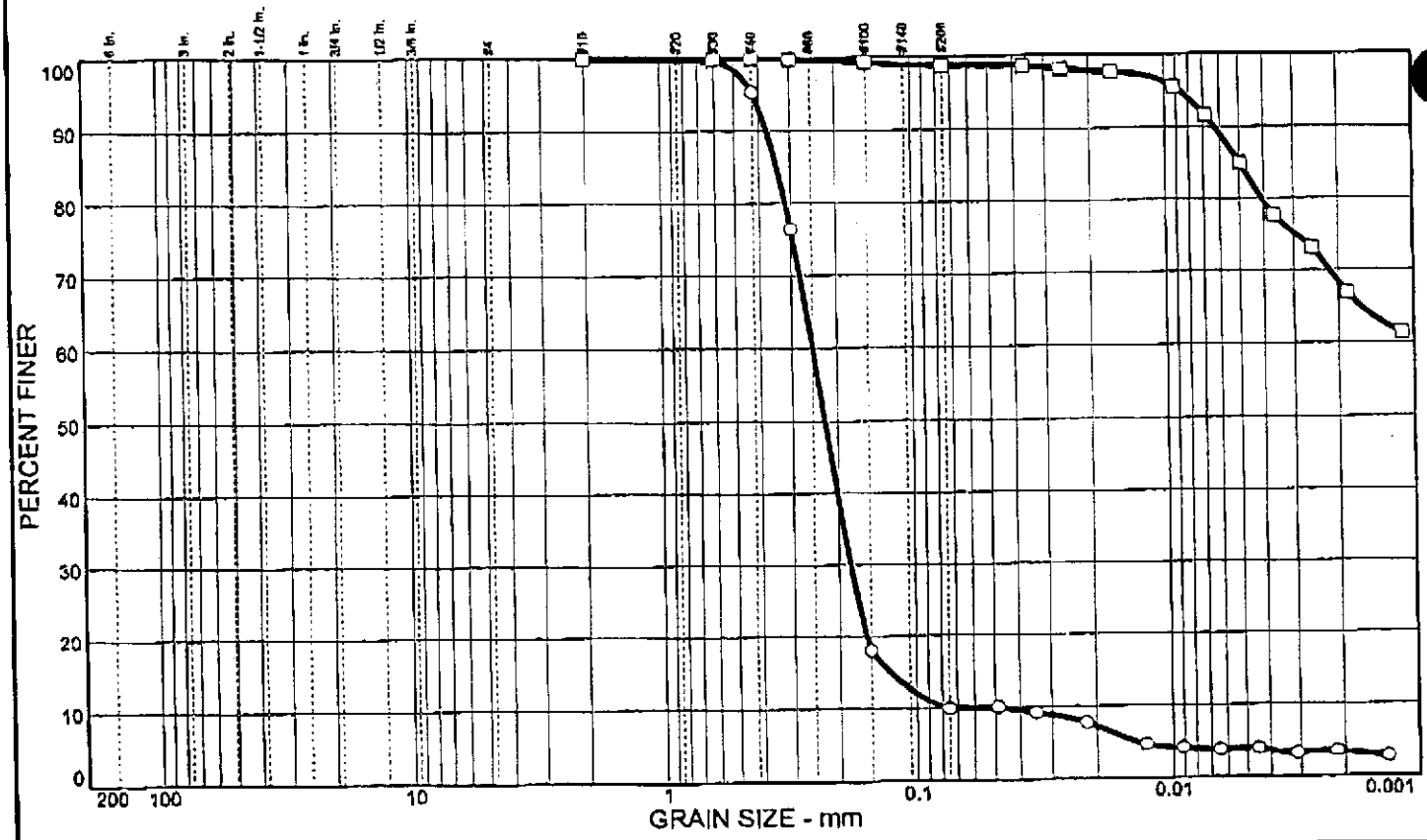
COOPER TESTING LABORATORY

Client: ITSI

Project: 00-152-15 / Port of Oakland

Project No.: 261-014 Plate

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			90.1	6.4	3.5	SP-SM		23	19
□			1.2	30.3	68.5	CH		33	84

SIEVE inches size	PERCENT FINER ○	□

	GRAIN SIZE		
D_{60}	0.248		
D_{30}	0.179		
D_{10}	0.0484		
	COEFFICIENTS		
C_C	2.66		
C_U	5.13		

SIEVE number size	PERCENT FINER ○	□
#10	100.0	100.0
#30	99.6	99.9
#40	95.4	99.9
#50	76.4	99.8
#100	18.0	99.3
#200	9.9	98.8

SOIL DESCRIPTION

○ gray poorly graded SAND with silt

□ gray fat CLAY

REMARKS:

○ Temperature and deflocculent correction factor had to be increased by 5 to lower hydrometer reading to match 200 sieve reading, probably

□ F.M.=0.01

○ Source: PZ-D Elev./Depth: 7'

□ Source: PZ-E Elev./Depth: 11.5-12'

COOPER TESTING LABORATORY

Client: ITSI

Project: 00-152-15 / Port of Oakland

Project No.: 261-014

Plate

Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 – (925) 256-8998 (fax)

261-014

Chain-Of-Custody

Project Name and Number: PORT OF OAKLAND/00-152.15
Project Manager: RACHEL HESS
Site Location: 2225 & 2277 7TH STREET

Laboratory Name: COOPER TESTING LABORATORY
Address: 1360-D INDUSTRIAL AVE. Contact Name:
PETALUMA, CA. Phone: (707) 765-2589

Date: 11 FEB 2002
Page: 1 of 1

Sample I.D.	Sample Depth	Date	Time	No. of Containers	Sample Matrix	Analysis: SIEVE AND HYDROMETER ATTERBERG LIMITS	Analysis: SIEVE AND HYDROMETER ATTERBERG LIMITS	Special Instructions/Comments
Preservative:						None None	None None	
Container Type:						8oz. 8oz.		
						S.S. S.S.	Gl. Gl.	
PZ-D	7'	11 FEB 2002	0915	1	SOIL	✓ ✓		
PZ-A	6'	11 FEB 2002	1410	1	SOIL		✓ ✓	
PZ-A	12.5'	11 FEB 2002	1420	1	SOIL		✓ ✓	
PZ-B	5.5'	12 FEB 2002	0755	1	SOIL		✓ ✓	
PZ-E	11.5'	13 FEB 2002	1300	1	SOIL		✓ ✓	

NOT USED

Sampled By: JAMES ANDERSON
Signature:
Special Instructions:

Send Results to: RACHEL HESS
(w/fax #) (925) 256-8998

Turnaround Time: STANDARD TURNAROUND

Sampler: JAMES ANDERSON

Relinquished By/Affiliation:	Date:	Time:
(ITSI)	20 FEB 2002	1045

Courier/Airbill No.: SELF DELIVERED

Received By/Affiliation:	Date:	Time:
Cooper testing lab Petaluma	2/20/02	10:45a

Original – Laboratory Yellow – Field/Office

Sequoia
Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

19 October, 2001

Rachel Hess
Innovative Technical Solutions, Inc.
2730 Shadelands Dr., Ste. 100
Walnut Creek, CA 94598

RE: Port of Oakland
Sequoia Report: W110107

Enclosed are the results of analyses for samples received by the laboratory on 05-Oct-01 13:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dimple Sharma
Project Manager

CA ELAP Certificate #1271

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

Innovative Technical Solutions, Inc.	Project: Port of Oakland	
2730 Shadelands Dr., Ste. 100	Project Number: [none]	**Reported:**
Walnut Creek CA, 94598	Project Manager: Rachel Hess	19-Oct-01 16:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-8A	W110107-01	Water	05-Oct-01 11:05	05-Oct-01 13:10
TRIP BLANK	W110107-02	Water	05-Oct-01 11:15	05-Oct-01 13:10

Dimple Sharma, Project Manager

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

Innovative Technical Solutions, Inc.	Project: Port of Oakland	
2730 Shadelands Dr., Ste. 100	Project Number: [none]	**Reported:**
Walnut Creek CA, 94598	Project Manager: Rachel Hess	19-Oct-01 16:16

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-8A (W110107-01) Water Sampled: 05-Oct-01 11:05 Received: 05-Oct-01 13:10									
Purgeable Hydrocarbons (C6-C12)	370	120	ug/l	2.5	1J08002	10-Oct-01	10-Oct-01	EPA 8015M/8021	HC-12
Benzene	ND	1.2	"	"	"	"	"	"	
Toluene	ND	1.2	"	"	"	"	"	"	
Ethylbenzene	ND	1.2	"	"	"	"	"	"	
Xylenes (total)	ND	1.2	"	"	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	6.2	"	"	"	"	"	"	Q-28
Surrogate: a,a,a-Trifluorotoluene		*100 %*	*70-130*		"	"	"	"	
TRIP BLANK (W110107-02) Water Sampled: 05-Oct-01 11:15 Received: 05-Oct-01 13:10									
Purgeable Hydrocarbons (C6-C12)	ND	50	ug/l	1	1J08002	09-Oct-01	09-Oct-01	EPA 8015M/8021	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	2.5	"	"	"	"	"	"	Q-28a
Surrogate: a,a,a-Trifluorotoluene		*101 %*	*70-130*		"	"	"	"	

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

Innovative Technical Solutions, Inc.	Project: Port of Oakland	
2730 Shadelands Dr., Ste. 100	Project Number: [none]	**Reported:**
Walnut Creek CA, 94598	Project Manager: Rachel Hess	19-Oct-01 16:16

Diesel Hydrocarbons (C10-C23) with Silica Gel Cleanup by DHS LUFT

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-8A (W110107-01) Water	**Sampled: 05-Oct-01 11:05**		**Received: 05-Oct-01 13:10**						
Diesel Range Hydrocarbons (C10-C23)	**760**	56	ug/l	1	1J17011	17-Oct-01	18-Oct-01	DHS LUFT	
Motor Oil (C16-C40)	ND	280	"	"	"	"	"	"	HC-12
Surrogate: n-Pentacosane		*131 %*	*50-150*		"	"	"	"	

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

Innovative Technical Solutions, Inc.	Project: Port of Oakland	
2730 Shadelands Dr., Ste. 100	Project Number: [none]	**Reported:**
Walnut Creek CA, 94598	Project Manager: Rachel Hess	19-Oct-01 16:16

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control
Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J08002 - EPA 5030B P/T										
Blank (1J08002-BLK1)				Prepared & Analyzed: 08-Oct-01						
Purgeable Hydrocarbons (C6-C12)	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether (MTBE)	ND	2.5	"							
Surrogate: a,a,a-Trifluorotoluene	*29.7*		"	*30.0*		*99.0*	*70-130*			
Blank (1J08002-BLK2)				Prepared & Analyzed: 09-Oct-01						
Purgeable Hydrocarbons (C6-C12)	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether (MTBE)	ND	2.5	"							
Surrogate: a,a,a-Trifluorotoluene	*28.1*		"	*30.0*		*93.7*	*70-130*			
Blank (1J08002-BLK3)				Prepared & Analyzed: 10-Oct-01						
Purgeable Hydrocarbons (C6-C12)	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether (MTBE)	ND	2.5	"							
Surrogate: a,a,a-Trifluorotoluene	*30.3*		"	*30.0*		*101*	*70-130*			
LCS (1J08002-BS1)				Prepared & Analyzed: 08-Oct-01						
Benzene	18.0	0.50	ug/l	20.0		90.0	70-130			
Toluene	19.1	0.50	"	20.0		95.5	70-130			
Ethylbenzene	20.3	0.50	"	20.0		102	70-130			
Xylenes (total)	60.7	0.50	"	60.0		101	70-130			
Surrogate: a,a,a-Trifluorotoluene	*30.2*		"	*30.0*		*101*	*70-130*			

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

Innovative Technical Solutions, Inc.	Project: Port of Oakland	
2730 Shadelands Dr., Ste. 100	Project Number: [none]	**Reported:**
Walnut Creek CA, 94598	Project Manager: Rachel Hess	19-Oct-01 16:16

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J08002 - EPA 5030B P/T										
LCS (1J08002-BS2)				Prepared & Analyzed: 09-Oct-01						
Benzene	18.1	0.50	ug/l	20.0		90.5	70-130			
Toluene	19.2	0.50	"	20.0		96.0	70-130			
Ethylbenzene	20.1	0.50	"	20.0		100	70-130			
Xylenes (total)	59.7	0.50	"	60.0		99.5	70-130			
Surrogate: a,a,a-Trifluorotoluene	*30.4*		"	*30.0*		*101*	*70-130*			
LCS (1J08002-BS3)				Prepared & Analyzed: 10-Oct-01						
Benzene	18.3	0.50	ug/l	20.0		91.5	70-130			
Toluene	19.4	0.50	"	20.0		97.0	70-130			
Ethylbenzene	20.3	0.50	"	20.0		102	70-130			
Xylenes (total)	60.7	0.50	"	60.0		101	70-130			
Surrogate: a,a,a-Trifluorotoluene	*30.1*		"	*30.0*		*100*	*70-130*			
Matrix Spike (1J08002-MS1)	Source: W110138-07			Prepared: 08-Oct-01 Analyzed: 10-Oct-01						
Benzene	18.6	0.50	ug/l	20.0	ND	93.0	70-130			
Toluene	19.6	0.50	"	20.0	ND	98.0	70-130			
Ethylbenzene	20.1	0.50	"	20.0	ND	100	70-130			
Xylenes (total)	60.3	0.50	"	60.0	ND	100	70-130			
Surrogate: a,a,a-Trifluorotoluene	*30.3*		"	*30.0*		*101*	*70-130*			
Matrix Spike Dup (1J08002-MSD1)	Source: W110138-07			Prepared: 08-Oct-01 Analyzed: 10-Oct-01						
Benzene	19.1	0.50	ug/l	20.0	ND	95.5	70-130	2.65	20	
Toluene	20.0	0.50	"	20.0	ND	100	70-130	2.02	20	
Ethylbenzene	20.8	0.50	"	20.0	ND	104	70-130	3.42	20	
Xylenes (total)	62.7	0.50	"	60.0	ND	104	70-130	3.90	20	
Surrogate: a,a,a-Trifluorotoluene	*30.7*		"	*30.0*		*102*	*70-130*			

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

novative Technical Solutions, Inc.	Project: Port of Oakland	
2730 Shadelands Dr., Ste. 100	Project Number: [none]	**Reported:**
Walnut Creek CA, 94598	Project Manager: Rachel Hess	19-Oct-01 16:16

Diesel Hydrocarbons (C10-C23) with Silica Gel Cleanup by DHS LUFT - Quality Control

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1J17011 - EPA 3510B										
Blank (1J17011-BLK1)				Prepared & Analyzed: 17-Oct-01						
Diesel Range Hydrocarbons (C10-C23)	ND	50	ug/l							
Motor Oil (C16-C40)	ND	250	"							
Surrogate: n-Pentacosane	*45.0*		"	*33.3*		*135*	*50-150*			
LCS (1J17011-BS1)				Prepared & Analyzed: 17-Oct-01						
Diesel Range Hydrocarbons (C10-C23)	460	50	ug/l	500		92.0	35-125			
Surrogate: n-Pentacosane	*46.1*		"	*33.3*		*138*	*50-150*			
LCS Dup (1J17011-BSD1)				Prepared & Analyzed: 17-Oct-01						
Diesel Range Hydrocarbons (C10-C23)	439	50	ug/l	500		87.8	35-125	4.67	50	
Surrogate: n-Pentacosane	*46.3*		"	*33.3*		*139*	*50-150*			

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

Innovative Technical Solutions, Inc.	Project: Port of Oakland	
2730 Shadelands Dr., Ste. 100	Project Number: [none]	**Reported:**
Walnut Creek CA, 94598	Project Manager: Rachel Hess	19-Oct-01 16:16

Notes and Definitions

HC-12	Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
Q-28	The opening calibration verification standard was outside acceptance criteria by -21%. Although the Laboratory Control Sample verified the accuracy of the batch, this should be considered in evaluating the data for its intended purpose.
Q-28a	The opening calibration verification standard was outside acceptance criteria by -23%. Although the Laboratory Control Sample verified the accuracy of the batch, this should be considered in evaluating the data for its intended purpose.
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
RPD	Relative Percent Difference

APPENDIX E

MONITORING WELL MW-8A INSTALLATION
FIELD ACTIVITY DOCUMENTATION

Alameda County Drilling Permit
Daily Activity Reports
Tailgate Safety Meetings
MW-8a Borelogs
Well Completion Form
Well Development and Sampling Forms
Chain of Custody
Groundwater Analytical Results

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 2277 - 7th Street, Oakland
Well to be installed approx 80ft north of Building C401 (see attached map).

CLIENT
Name Port of Oakland - EH&S dept.
Address 530 WATER ST Phone 5106271373
City Oakland CA Zip 94604

APPLICANT
Name Innovative Technical Solutions, Inc.
Fax 9252568998
Address 2730 Shadelands, Ste100 Phone 9259463105
City Walnut Creek CA Zip 94598

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	0	General	0
Water Supply	0	Contamination	0
Monitoring	X	Well Destruction	0

PROPOSED WATER SUPPLY WELL USE

New Domestic	0	Replacement Domestic	0
Municipal	0	Irrigation	0
Industrial	0	Other	[redacted]

DRILLING METHOD:

Mud Rotary	0	Air Rotary	0	Auger	X
Cable	0	Other	0		

DRILLER'S NAME Precision
DRILLER'S LICENSE NO. (C57) 636387

WELL PROJECTS
Drill Hole Diameter 6"-8" in. Maximum
Casing Diameter 2" in. Depth 30 ft.
Surface Seal Depth 5 ft. Owner's Well Number MWBA

GEOTECHNICAL PROJECTS NONE
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE Sept. 19, 2001
ESTIMATED COMPLETION DATE Sept. 19, 2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Rachel B Hess DATE 9/5/01

PLEASE PRINT NAME RACHEL B HESS

Rev. 5-13-00

FOR OFFICE USE

PERMIT NUMBER #W01-821
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 9-5-01

Innovative Technical Solutions, Inc.
1730 Franklin Street, Suite 301
Oakland, California 94612
(510) 286-8888 (Tel), (510) 286-8889 (Fax)

PROJECT NAME: Port of Oakland
PROJECT NUMBER: 00-152.01
SITE LOCATION: 2277 7TH Street

DAILY ACTIVITY REPORT

DATE: 20 Oct 2001
PAGE 1 OF 1

DESCRIPTION OF FIELD ACTIVITIES AND EVENTS

0735 Arrive at Pacific Container Lot. Begin paperwork.

0750 Meet with Precision Drilling's crew. Hold Health and Safety meeting. Show drillers proposed well location.

0830 Begin drilling.

0905 Boring completed to just below 20'. Abundant water. Driller pulls augers in order to place plug in the bottom auger for well construction (heaving sands).

0940 Casing measured and placed into augers. Bottom of well set at 20.75' so that top of screen is at 5'. Water was encountered at approximately 7.5'.

0945 Filter pack begun - first auger pulled.

1010 All augers pulled. Filter pack at 4'. After surging filter pack drops roughly 3' - topped back off to 4'.

1030 Driller booms down. Bentonite chips added from 4' to 2' - hydrated with deionized water.

1110 Grout added above bentonite.

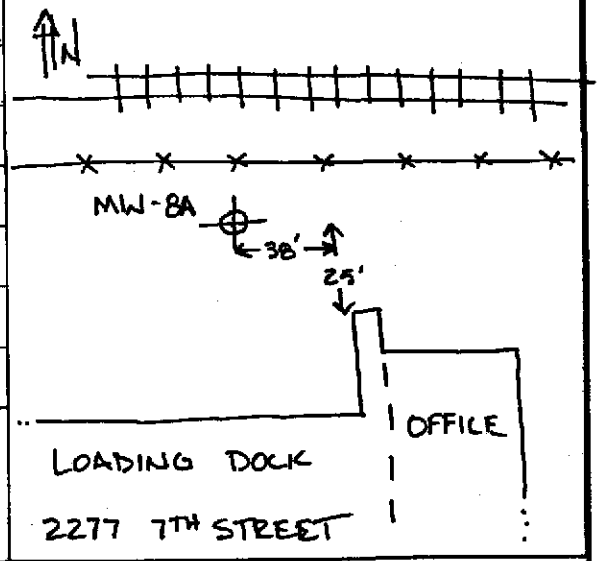
1125 Cristy box cemented into place.

1135 Drillers depart. I complete paperwork.

1215 Phone Rachel Hess with job update.

1220 Depart site.

REFERENCE SKETCH



PREPARED BY: James Anderson
DATE: 20 October 2001
CHECKED BY*:
DATE:
DISTRIBUTION:

PREPARERS SIGNATURE:
REVIEWERS SIGNATURE:

* Not appropriate for a field activity report when only one responsible person is in the field.

Innovative Technical Solutions, Inc.
1730 Franklin Street, Suite 301
Oakland, California 94612
(510) 286-8888 (Tel), (510) 286-8889 (Fax)

PROJECT NAME: PORT OF OAKLAND
PROJECT NUMBER: 00-152.01
SITE LOCATION: 2277 7TH ST.

DAILY ACTIVITY REPORT

DATE: 5 Oct 2001
PAGE 1 OF 1

DESCRIPTION OF FIELD ACTIVITIES AND EVENTS

0910 ARRIVE AT SITE. MEET WITH ISRAEL FROM PRECISION DRILLING. HOLD TAILGATE SAFETY MEETING. GO OVER TODAYS PLAN OF ACTION.

0920 SET UP AT MW-8A. OPEN WELL COVER. INSIDE WELL COVER INTACT (RUN OVER ON 2ND OR 3RD OF OCTOBER). TAKE WATER LEVEL - 8.32', MEASURE TOTAL DEPTH - 20.6'.

0930 SET UP TO PURGE WELL. CALIBRATE HORIBA U-22 WITH STANDARD SOLUTION.

1000 BEGIN PURGING.

1010 PURGING HALTED. PURGE PUMP DISASSEMBLED AND REPAIRED.

1025 PURGING RESUMES. PUMP FUNCTIONING PROPERLY.

1045 FINISH PURGING. 10 WELL VOLUMES REMOVED.

1050 PREPARE TO SAMPLE WELL.

1100 BEGIN SAMPLING MW-8A.

1105 FINISH SAMPLING. PLACE SAMPLES ON ICE.

1110 SECURE WELL. PLACE PURGE WATER IN DECON WATER DRUM FROM TUESDAY'S DRILLING ACTIVITIES.

1130 DEPART FROM SITE.

1215 ARRIVE AT OFFICE. INVENTORY SAMPLES

1310 DELIVER SAMPLES TO LAB.

REFERENCE SKETCH

PREPARED BY: JAMES ANDERSON
DATE: 5 OCTOBER 2001
CHECKED BY*:
DATE:

DISTRIBUTION:

PREPARERS SIGNATURE: James Anderson
REVIEWERS SIGNATURE:

* *Not appropriate for a field activity report when only one responsible person is in the field.*

Innovative Technical Solutions, Inc.

TAILGATE SAFETY MEETING

DIVISION/SUBSIDIARY FACILITY

DATE 2 OCTOBER 2001 TIME 0800 JOB NUMBER 00-152.01

CUSTOMER PORT OF OAKLAND ADDRESS 530 WATER STREET OAKLAND

SPECIFIC LOCATION 2277 7TH STREET

TYPE OF WORK REINSTALLIATION OF MONITORING WELL

CHEMICALS USED DIESEL FUEL, GASOLINE

SAFETY TOPICS PRESENTED

PROTECTIVE CLOTHING/EQUIPMENT LEVEL D - HARD HAT, SAFETY GLASSES, REFLECTIVE VESTS, STEEL TOED BOOTS.

CHEMICAL HAZARDS DIESEL, GASOLINE, GREASE

PHYSICAL HAZARDS MOVING MACHINE PARTS, SLIPS, TRIPS, HEAVY ITEMS

EMERGENCY PROCEDURES SECURE AREA, CALL 911, FOLLOW EMERGENCY DIRECTIONS

HOSPITAL SUMMIT MEDICAL CENTER PHONE (510) 869-4000 AMBULANCE PHONE 911

HOSPITAL ADDRESS 350 HAWTHORNE AVE. OAKLAND

SPECIAL EQUIPMENT DRILL RIG, DECON EQUIPMENT

OTHER

ATTENDEES

PRINTED NAME	SIGNATURE
Mitch Gaudinier	
CHRIS TATUM	
Roberto Estrada	
Rachel Hess	

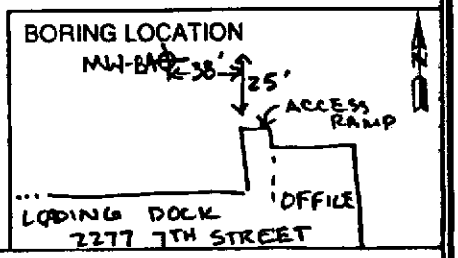
CONDUCTED BY: JAMES ANDERSON SIGNATURE:

SUPERVISOR

LOCATION 2277 7TH STREET OAKLAND
SURFACE ELEVATION NOT AVAILABLE
DRILLING METHOD 6½" HOLLOW STEM AUGER
SAMPLING METHOD CA. MODIFIED SPLIT SPOON

BORING DEPTH 20.75'
DATE BEGAN 2 OCT 2001
DATE FINISHED 2 OCT 2001
LOGGED BY J. ANDERSON
EDITED BY
CHECKED BY

BORING NO. MW-8A
SHEET 1 OF 2

BORING LOCATION


DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) B-zone/Slem/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0	BOX CEMENT		0/0/0.0			AC		ASPHALT
	BENTONITE CHIPS				GRAB	SW		OLIVE BROWN, WELL GRADED SAND WITH GRAVEL, (SW), (2.5Y4/4), MOIST, LOOSE, 45-55% FINE TO COARSE SAND, 35-45% FINE TO COARSE GRAVEL TO 1.5, SAND AND GRAVEL ANGULAR, 0-5% FINES.
			1/0.0		GRAB	GW		@1' VERY DARK GRAY, WELL GRADED GRAVEL WITH SAND, (GW) (5Y3/1), 60-70% GRAVEL, 25-35% FINE TO COARSE SAND, 0-5% FINES, GRAVEL TO 2.5" CONSISTING OF CHERT AND GRANITE ROCK.
			1/1.2		GRAB	SW		@2' BLACK, WELL GRADED SAND WITH GRAVEL, (SW), (5Y2.5/1), 50-60% FINE TO COARSE SAND, 20-30% FINE TO COARSE GRAVEL, 5-10% FINES, 5-10% WOOD FRAGMENTS, GRAVEL TO 2.5", CREOSOTE ODOR
								HARD MATERIAL AT 2.5' (DRILLER STATES CONCRETE)
5			45/4.5/15.1		GRAB	SC		@3' VERY DARK GRAY, CLAYEY SAND WITH GRAVEL, (SC), (2.5Y3/1), 40-50% FINE TO MEDIUM SAND, 25-35% CLAY, 10-20% GRAVEL TO 1", 10-20% WOOD FRAGMENTS, STRONG CREOSOTE ODOR.
			1/11.4		GRAB			@4' OLIVE GRAY, CLAYEY SAND, (SC), (5Y4/1), 40-50% FINE TO MEDIUM SAND, 36-45% FAT CLAY, 5-10% SILT, SAND ANGULAR, CLAY MEDIUM TO HIGH PLASTICITY.
			1/8.1		GRAB	CH		@4.5' MOTILED DARK OLIVE GRAY, OLIVE & PALE YELLOW, SANDY FAT CLAY, (CH), (5Y3/2, 5Y4/4 & 5Y7/3). SOFT TO FIRM, 60-70% FAT CLAY, 20-30% FINE SAND, 5-15% SILT, HIGH PLASTICITY, STRONG ODOR.
5.0	FILTER PACK		0.0//					
			1/1.5	2/4/4	SPLIT SPOON	SC		@6' SAME AS ABOVE (S.A.A.)
			1/1.8					@7' OLIVE, CLAYEY SAND, (SC), (5Y4/3), FIRM, WET, 45-55% FINE TO MEDIUM SAND, 40-50% FAT CLAY, 5-10% SILT.
10								LIGHT OLIVE GRAY
				4/6/8	SPLIT SPOON	CH		@8' MOTILED OLIVE, GRAYISH GREEN & BLACK, SANDY FAT CLAY, (CH), (5Y4/4, 5Y6/2, 5G5/2 & 5Y2.5/1), SOFT, MOIST, 50-60% FAT CLAY, 40-50% FINE SAND
								@8.5' DARK GRAY, FAT CLAY, (CH), (5Y4/1), MOIST, FIRM, MEDIUM PLASTICITY, 95-100% CLAY, 0-5% SAND.
								: FROM THIS POINT ON CUTTINGS WERE AUGER MIXED.
10.0			1/1.0		GRAB	CH		@10' DARK GREENISH GRAY, FAT CLAY, (CH), (10Y3/1), HIGH PLASTICITY.
					GRAB	CH		@12' BLACK (5Y2.5/1).
15.0								

Innovative Technical Solutions, Inc.

PROJECT Port of Oakland
PROJECT NO. 00-152.01

LOCATION 2277 7TH STREET OAKLAND | BORING DEPTH 20.75' | **BORING NO. MW-8A**

SURFACE ELEVATION NOT AVAILABLE | DATE BEGAN 20 OCT 2001 | SHEET 2 OF 2

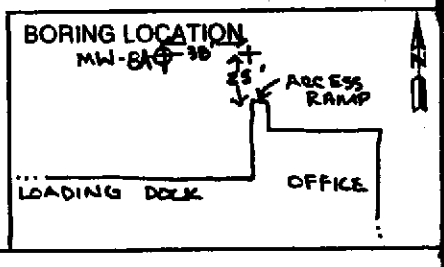
DRILLING METHOD 6 1/2" HOLLOW STEM AUGER | DATE FINISHED 20 OCT 2001

SAMPLING METHOD GRAB | LOGGED BY J. ANDERSON

EDITED BY

CHECKED BY

BORING LOCATION



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) B-zone/stem/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
15.0						CH		FROM ABOVE: BLACK, FAT CLAY, (CH), (5Y2.5/1), SOFT TO FIRM, MOIST, 95-100% FAT CLAY, 0-5% FINE SAND, HIGH PLASTICITY. SAND INCREASING / CLAY DECREASING.
			N.D.		GRAB	SC		@17' DARK GREENISH GRAY, CLAYEY SAND, (SC), ( ), SOFT, SATURATED, 50-60% FINE TO MEDIUM SAND, 30-40% CLAY, 5-10% SILT.
			N.D.		GRAB	SP		@19' OLIVE BROWN, POORLY GRADED SAND, (SP), (2.5Y4/4), FIRM, SATURATED, 95-100% FINE TO MEDIUM SAND, 0-5% FINES.
20.0								BOTTOM OF BORING AT 20.75'
25.0								
30.0								

ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

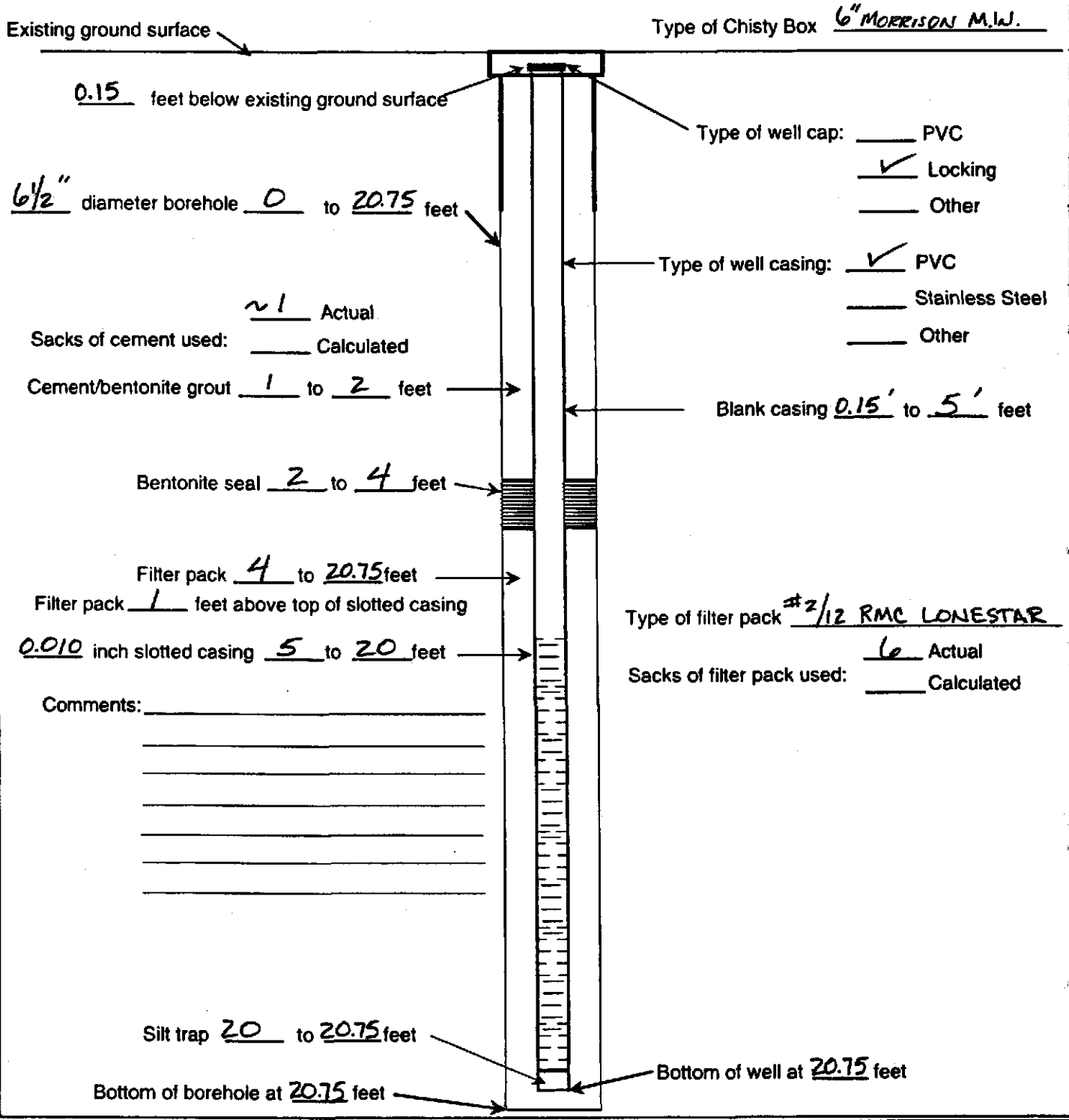
PROJECT NO. 00-152.01

LOCATION 2277 7TH STREET OAKLAND BORING DEPTH 20.75' **BORING NO.** MW-8A

SURFACE ELEVATION NOT DETERMINED DATE BEGAN 20 OCT 2001 LOGGED BY J. ANDERSON

DRILLING METHOD 6½" HOLLOW STEM AUGER DATE FINISHED 20 OCT 2001

BELOW GROUND COMPLETION



ITSI **Innovative Technical Solutions, Inc.**

PROJECT PORT OF OAKLAND 00-152.01 (WC)

PROJECT NO. 00-152.01

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

ITSI Innovative Technical Solutions, Inc.

MONITORING WELL DEVELOPMENT AND SAMPLING FORM

Project Name: PORT OF OAKLAND Project No.: 00-152.01

Well No.: MW-8A Tested By: J. ANDERSON Date: 5 OCTOBER 2001

Measuring Point Description:	MARK ON TOP OF CASING	Total Well Depth (ft.):	20.6'
Water Level Measurement Method:	SLOPE INDICATOR	Sample Method:	DISPOSABLE BAILER
Development Method(s):	1½" SURGE PUMP	Time Sampled:	1105
Time Start Develop:	1000	Sample Depth (ft):	8.6 - 11.6
Time End Develop:	1045	Field Filtering:	N.A.
Initial/Static Water Level (ft.):	8.32'	Field Preservation:	HCl & 4°C
Final Water Level (ft.):	8.59'	Comments:	N.M.-NOT MEASURED

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2 / 0.16	4 / 0.64	6 / 1.44	=	Casing Volume (gal)
	20.6		8.32		12.28						19.7

Time	1001	1004	1008	1028	1033	1035	1037	1039	1041	1043
Depth to water	8.32'	N.M.	N.M.	8.8'	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.
Volume purged (gals)	0	2	2	2	2	2	2	2	2	2
Σ volume purged (gals)	0	~2	~4	~6	~8	~10	~12	~14	~16	~18
Σ casing volumes	0	1	2	3	4	5	6	7	8	9
Purge rate (gpm)	~1 GPM	~1 GPM	~1 GPM	~1 GPM	1 GPM	1 GPM	1 GPM	1 GPM	1 GPM	1 GPM
Temperature (°F/C°)	20.19	20.91	20.71	19.70	20.77	21.00	21.01	21.08	21.12	21.24
pH	6.12	7.48	7.82	7.84	7.74	7.63	7.55	7.54	7.37	7.38
Specific conductivity (µmhos/cm)	2.52	2.17	2.34	2.33	2.34	2.38	2.39	2.45	2.56	2.55
Dissolved oxygen (mg/L)	>19.99	15.46	12.05	9.66	7.99	8.23	8.02	7.73	7.18	7.04
Turbidity or Color	>1000 CHOC. BRN.	→								→
Odor?	CREOSOTE	→								→
De-watered?										

Innovative Technical Solutions, Inc.

MONITORING WELL DEVELOPMENT AND SAMPLING FORM

Project Name: PORT OF OAKLAND Project No.: 00-152.01

Well No.: MW-8A Tested By: J. ANDERSON Date: 5 OCTOBER 2001

Measuring Point Description:	MARK ON TOP OF CASING	Total Well Depth (ft.):	20.6'
Water Level Measurement Method:	SLOPE INDICATOR	Sample Method:	DISPOSABLE BAILER
Development Method(s):	1½" SURGE PUMP	Time Sampled:	1105
Time Start Develop:	1000	Sample Depth (ft):	8.6' - 11.6'
Time End Develop:	1045	Field Filtering:	N.A.
Initial/Static Water Level (ft.):	8.32'	Field Preservation:	HCl / 4°C
Final Water Level (ft.):	8.59'	Comments:	

Well Volume Calculation	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
~~20.6~~ 20.6	20.6	-	8.32	=	12.28	x	2	4	6	=	19.7
							0.16	0.64	1.44		

Time	1045										
Depth to water	8.59'										
Volume purged (gals)	2										
Σ volume purged (gals)	20										
Σ casing volumes	10										
Purge rate (gpm)	1GPM										
Temperature (F°/C°)	21.20										
pH	7.37										
Specific conductivity (µmhos/cm)	2.60										
Dissolved oxygen (mg/L)	6.82										
Turbidity or Color	>1000 CHOC. BRN.										
Odor?	CREOSOTE										
De-watered?											

SEQUOIA ANALYTICAL CHAIN OF CUSTODY

☐ 885 Jarvis Drive • Morgan Hill, CA 95037 • (408) 776-9600 • FAX (408) 782-6308
☐ 1455 McDowell Blvd. North, Suite D • Petaluma, CA 94954 • (707) 792-1865 • FAX ([illegible]) 792-0342
☐ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 • FAX (916) 921-0100
☐ 1551 Industrial Road • San Carlos, CA 94070 • (650) 232-9600 • FAX (650) 232-9612
☒ 404 N. Wiget Lane • Walnut Creek, CA 94598 • (925) 988-9600 • FAX (925) 988-9673

Company Name: Innovative Technical Solutions, Inc.	Project: Port of Oakland Attn: John Prall
Mailing Address: 2730 Shadelands Drive Suite 100	Billing Address (if different): 530 Water Street 2nd Fl
City: Walnut Creek State: CA Zip Code: 94598	Oakland CA 94607
Telephone: (925) 946-3100 Fax #: (925) 256-8998	P.O. #: Port Contract
Report To: R Hess E-Mail: RHess@itsi.com	QC Data: ☒ Level II (Standard) ☐ Level III ☐ Level IV
Sampler: James Anderson Date / Time Results Required: 10/15/01 / Normal TAT	Sequoia's Work Order #

Turnaround Time: ☒ 10 - 15 Working Days (Standard TAT) ☐ 7 Working Days ☐ 5 Working Days ☐ 72 Hours ☐ 48 Hours ☐ 24 Hours ☐ 2-8 Hours

MANDATORY: ☐ SDWA (Drinking Water) ☐ CWA (Waste Water) ☐ RCRA (Hazardous Waste) ☐ Other

ANALYSES REQUESTED (Please provide method)

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Container Type	Sequoia's Sample #	TPH as gasoline EPA 8015M	BTEX/MTBE EPA 8021B	TPH as diesel EPA 8015M	TPH as motor oil EPA 8015M						Comments/ Temp.(If required)
1. MW-8A	5 Oct 2001/1105	Water	5	3 VOA/2 Amber Glass		✓	✓	✓	✓						
2. Trip Blank	5 Oct 2001/1115	Water	1	1 VOA		✓	✓								
3.															
4.															
5.															
6.															
7.															
8.															
9.															
10.															

Relinquished By: [signature] / ITSI	Received By: Michael Gorin	Date / Time: 10/5/01 1310
Relinquished By:	Received By:	Date / Time:
Relinquished By:	Received By:	Date / Time
Relinquished By:	Received By:	Date / Time:

Were Samples Received in Good Condition? ☐ Yes ☐ No Samples on Ice? ☐ Yes ☐ No Method of Shipment ______ Page ____ of ____

Pink - Client Yellow - Sequoia White - Sequoia