9719 Lincoln Village Drive, Suite 310 Sacramento, CA 95827 916/369-8971 FAX 916/369-8370

Industrial Compliance

June 8, 1992

Ms. Jennifer Eberle Alameda County Health Care Services Agency Department of Environmental Health Hazardous Materials Division 80 Swan Way, Room 200 Oakland, California 94621

Subject: Second Quarter 1992 Groundwater Monitoring Report Southern Pacific Transportation Company 5th and Kirkham Streets Site Oakland, California IC Project No. 05032

Dear Ms. Eberle:

Industrial Compliance (IC), on behalf of Southern Pacific Transportation Company (SPTCo), is submitting the second quarter 1992 groundwater monitoring report for the SPTCo property located at 5th and Kirkham Streets in Oakland, California (see Figure 1). Work was performed in accordance with the guidelines presented in the Alameda County Health Care Services Agency (ACHCSA) letter dated June 21, 1991, which required groundwater monitoring at this site. Quarterly groundwater sampling of these wells began in the third quarter of 1991.

Groundwater Sampling

There are currently four wells onsite (MW-1, MW-3, MW-4 and MW-6). Well locations are shown on Figure 2. Wells MW-1, MW-3 and MW-4 were installed adjacent to former underground storage tank (UST) locations. The monitoring well MW-6 is an upgradient well not associated with the UST's, and was therefore not included in the quarterly sampling.

Groundwater samples were collected on April 14, 1992. Prior to sampling, groundwater elevations were measured with an electronic water level probe to calculate saturated well volumes. This data is included in the Purge Characterization and Sample Logs presented as Attachment A. Approximately 3 well volumes were purged from each well using a submersible pump. Prior to initial use and between each well, all sampling and purging equipment was decontaminated by scrubbing with a water and trisodium phosphate (TSP) solution, followed by rinses with potable water. During purging, the groundwater pH, temperature, and electrical conductivity were measured after purging each well volume. The groundwater parameter data is presented in the Purge Characterization and Sample Logs presented as Attachment A.

Samples were collected with disposable polyethylene bailers and transferred into laboratory supplied containers. Samples were analyzed for Total Petroleum Hydrocarbons (TPH)-Gasoline and benzene, toluene, ethylbenzene, and xylenes (BTEX) using Method P/T-GBX-Tri-regional,

5032-3-WSR.LTR\D:\KEYDATA\LTR-MEM

Dedicated to solving your environmental problems.

June 9, 1992 Alameda County Health Care Services Agency (05032) Ms. Jennifer Eberle Page 2

and TPH-Diesel using Method TPH-D-Tri-regional. Analytical results are summarized in Table 1.

Analytical Results

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The results of analyses have been summarized in Table 1. The analytical laboratory reports are included as Attachment B.

The results of analyses indicate TPH in the gasoline range and BTEX are not present above the laboratory reporting limits in any of the samples submitted for analysis from the 3 wells present at the site.

Unidentified hydrocarbons in the diesel range (C8-C30) were detected in MW-1 at a concentration of 69 μ g/L and in MW-4 at a concentration of 70 μ g/L. The unidentified hydrocarbon concentration in MW-3 was 660 μ g/L.

Groundwater Gradient

The 3 monitoring wells which are quarterly sampled are situated linearly and thus, by themselves, do not provide adequate data for measuring the hydraulic gradient.

On April 27, 1992, depth to water measurements were collected from the wells MW-1, MW-4, and MW-6 for the purpose of measuring the hydraulic gradient. The data collected is presented in Table 2. The hydraulic gradient was measured to be south 72° west (see Figure 2) with a dip of 0.0033 (17.4 feet/mile). Assuming a hydraulic conductivity of 0.001 cm/sec, and a porosity of 0.3, then the groundwater could be assumed to be moving at a velocity of approximately 12 feet/year.

Discussion

n not securive!

This sampling event marks the fourth quarter of sampling at this site. During this quarter, detectable concentrations of hydrocarbons were detected in samples from MW-1 and MW-4. IC recommends that the monitoring period be extended beyond 4 quarters. At least 2 more monitoring events should be performed to evaluate if the detected hydrocarbons in MW-1 and MW-4 were a one time event, a variable event, or indicative of actual conditions.

The concentrations of hydrocarbons in the well MW-3 appear to be steadily decreasing. When quarterly sampling was initiated in July 1991, the diesel concentration was 1,700 μ g/L. The sampling in April 1992 indicated 660 μ g/L. Assuming the decrease in TPH concentrations exhibits a first-order decay, a decay constant of 0.00345 may be calculated from the available data, and used to estimate approximately 2.8 years before the TPH concentrations attenuate below 50 μ g/L. It is proposed to continue monitoring of this well on a semi-annual basis.

(MW3)

June 8, 1992 Alameda County Health Care Services Agency (05032) Ms. Jennifer Eberle Page 3

If you have any questions concerning this report, please contact Mr. Walter Floyd at (916) 369-8971.

Sincerely,

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Watun Hungd

Walter D. Floyd Project Geolegist/

Mark \$. Dockym/C.E.G. Project Manager/

Attachment: A - Purge Characterization and Sample Logs. B - Analytical Laboratory Reports

cc: Mr. Lester Feldman





Table 1First Quarter 1992 Groundwater Monitoring Report
Southern Pacific Transportation Company
5th & Kirkham Streets
Oakland, California
Samples Collected April 1992
IC Project No. 05032

| Well ^a | Sample I.D. | TPH-Gasoline ^b Range (µg/L) | TPH-Diesel ^e Range (µg/L) | BTEX ^d (µg/L) |
|-------------------|----------------|---|---|-----------------------------|
| MW-1 | 26713 | ND | 69 | ND |
| MW-3 | 26709 | ND | 660 | ND |
| MW-4 | 26717 | ND | 70 | ND |
| Detection Limit | | 50 | 50 | 0.50 |

Notes:

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- a See Figure 2 for approximate well locations.
- b TPH-Gasoline Total Petroleum Hydrocarbons as gasoline analyzed using Method P/T-GBX-Tri-regional.
- c TPH-Diesel Total Petroleum Hydrocarbons analyzed using Method TPH-D-Tri-regional. The laboratory identified the hydrocarbons present as being in the range of C8-C30 and was quantitated against diesel (C10-C24).
- d BTEX Benzene, Toluene, Ethylbenzene, Xylenes analyzed using Method P/T-GBX-Tri-regional.
- ND Not detected above method detection limit
- µg/I Micrograms per liter

Table 2 Depth to Groundwater Measurements Southern Pacific Transportation Company 5th & Kirkham Streets Oakland, California April 27, 1992 IC Project No. 05032

| Well ^a | Depth to Water (feet) | PVC Casing Elevation ^b | Groundwater Elevation ^c |
|-------------------|--------------------------|--------------------------------------|---------------------------------------|
| MW-1 | 3.10 | 6.22 | 3.12 |
| MW-3 | NM | 6.53 | NM |
| MW-4 | 5.22 | 7.50 | 2.28 |
| MW-6 | 2.13 | 5.78 | 3.65 |

Notes:

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- a See Figure 2 for approximate monitoring well locations.
- b Elevations were measured by a licensed surveyor. Units are in feet above mean sea level.
- c Measured in feet above mean sea level.

NM Not measured

APPENDIX A

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PURGE CHARACTERIZATION AND SAMPLE LOGS

Industrial Compliance



PURGE CHARACTERIZATION AND SAMPLE LOG

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Sampler: <u>E. LICUEN</u> S

0 Date:_

Weather: _

| Cettbration pH: | | | | s.C.: |
|---------------------|---------|------|-----|--|
| Water Level Casing | | | · · | 8" well = 2.61 gallons/foot |
| Color | | | | 6" well = 1.47 galtons/foot |
| Turbidity | | | | 4" well = 0.65 galtons/foot |
| Salinity (0/00) | | | | Mutitpliers = 2" welt = 0.16 geitons/foot |
| Temperature (C) | 3 6 5.5 | 31.5 | | Three casing volumes (3CV): |
| Conductivity 003 | 36.8 | 362 | | One casing volume (CV) = H x multipiler: |
| р И (~ 5 | 2 16 40 | 6.55 | | Height of water column (H) = DB - BW: |
| Purge Rate | | | | Depth to water: $\zeta_{i} < \zeta_{i} \lesssim$ |
| Gellone Purged | 20 | 35 | | Depth to bottom (DB): |
| Milliny Time 1/255 | 125.55 | 1300 | | |

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| | Quantity - | Volume 4Cml L | Type Ucyt Ann | Preserv. 社亡し 治 次4 | Analyste BRY/mK 6 RDXS/D | Lab | Sample Equip. Brt/L2) V | Purge Equip. | Field Comments |
|------------|---------------|---------------------|---------------------|-------------------------|--------------------------------|-----|-------------------------------|--------------|----------------|
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Sampler's Signature:

Industrial Compliance Astroniant of Special Astronomental Specience, Inc.

PURGE CHARACTERIZATION AND SAMPLE LOG

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14-92 Date:__

Weather:_

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| S.C.: | | | | PH: | Calibration |
|--|-------------|----------|------|-------|--------------------|
| 8" welt = 2.61 gelions/foot | | | | | Water Level Casing |
| 6" weil = 1.47 gallons/foot | | | | | Color |
| 4" well ≃ 0.65 gallons/foot | | | | | Turbidity |
| Multipliers = 2° well = 0.16 galions/toot | | | | | Satinity (0/00) |
| Three casing volumes (3CV): | <u>67</u> 2 | 1, J. C. | 472 | 21.9 | Temperature (C) |
| One casing volume (CV) = H x multipiler: | 569 | 593 | 495 | 1251 | Conductivity |
| Height of water column (H) = DB - BW: | 6.96 | 25 0 | 6.36 | 15 51 | PH |
| Depth to water: $(c^2 + f)$ | | | | | Purge Rate |
| Depth to bottom (DB): | 6 | 20 | 15 | C | Gallons Purged |
| | 1434 | 62.14 | 2841 | 0640 | Military Time |

| Sample # | Quantity | Volume | Type | Preserv. | Analysis | Lab | Sample Equip. | Purge Equip. | Fletd Comments |
|-----------|----------|--------|-------|----------|----------|---------------------|---------------|--------------|----------------|
| といためる | ξ | 46-011 | 11 11 | 101 | BUT ATHO | $\langle m \rangle$ | $p_{M}(x)$ | the the way | 1440 Start |
| | - | | Phrvi | m sou | QS122 | 4 | , , | <i>i</i> # | |
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| Cleaning: | | | | | | | | | |
| Comments: | | | | | | | | | |
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Sampler's Signature:

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Industrial Compliance

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PURGE CHARACTERIZATION AND SAMPLE LOG

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261 Date: <u>'/~/'/</u>

Weather: _

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n de la registration d'action

| Military Time | 1.73 | 1451 | 1343 | 1344 | |
|--------------------|------|-------------|-------|-------|---|
| Gallons Purged | С | 15 | 20 | 25 | Depth to bottom (DB): |
| Purge Rate | | | | | Depth to water: $i i - j i j$ |
| ЬН | 693 | 7.15 | 1 dl | N. 20 | Height of water column (H) = DB - BW: |
| Conductivity | 2 20 | 203 | 261 | 760 | One casing volume (CV) = H x multipiler: |
| Temperature (C) | 76.3 | $l_{i} > T$ | 6 S.1 | 67.2 | Three casing volumes (3CV): |
| Salinity (0/00) | | | | | Multipilers = 2" well = 0.16 gallons/foot |
| Turbidity | | | | | 4" welt = 0.65 gallons/foot |
| Color | | | | | 6" well = 1.47 gallons/foot |
| Water Level Casing | | | | | 8" well = 2.61 gallons/foot |
| Calibration | pH: | | | | S.C.: |
| | | | | | |

| Fleid Comments | 1350 30ml | | | A A A A A A A A A A A A A A A A A A A | | | | | | - | |
|----------------------------|---------------------|----------|--|---------------------------------------|--|--|--|-----------|-----------|---|--|
| Purge Equip. | durityh | 4" Pume | | | | | | | | | |
| Semp l e Equip. | $g_{\eta_1(\mu_1)}$ | Popla | | | | | | | | | |
| del | erS | 4 | | | | | | | | | |
| Analysis | 9811/1218 | SCOS Ù | | | | | | | | | |
| Preserv. | うま | 11/2 304 | | | | | | | | | |
| Type | VON | Ann | | | | | | | | · | |
| Volume | 40ml | L . | | | | | | | | | |
| Quantity | 2 | 1 | | | | | | | | | |
| Sample # | SILAZ | | | | | | | Cleaning: | Comments: | | |

Contraction and a state of the state of the

Sampler's Signature:

APPENDIX B

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ANALYTICAL LABORATORY REPORTS

California Analytical Laboratory



May 1, 1992 ENSECO CAL LAB PROJECT NUMBER: 063689 PO/CONTRACT: NA

Walt Floyd Industrial Compliance 9719 Lincoln Village Dr. Suite 310 Sacramento, CA 95827

Dear Mr. Floyd:

5

This report contains the analytical results for the four aqueous samples which were received under chain of custody by Enseco Cal Lab on 15 April 1992. These samples are from your BoBo Project Number 05032.

The case narrative is an integral part of this report.

If you have any questions, please call me at (916) 374-4300.

Sincerely, Cindy/Rhatigan) Program Administrator

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Enseco A Corning Company

TABLE OF CONTENTS

ENSECO CAL LAB PROJECT NUMBER 063689

Case Narrative

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Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

Total Petroleum Hydrocarbons (Gasoline) and BTEX P/T-GBX-Triregional Includes Sample: 1 through 4 Sample Data Sheets Method Blank Report Laboratory Control Sample Report (DCS) Total Petroleum Hydrocarbons (Triregional) TPH-D-Triregional Includes Sample: 1 through 3 Sample Data Sheets Method Blank Report

Laboratory Control Sample Report (DCS)

Enseco A Corning Company

CASE NARRATIVE

ENSECO CAL LAB PROJECT NUMBER 063689

Total Petroleum Hydrocarbons (Gasoline) and BTEX TPH-D-Triregional

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The % RPDs for benzene and toluene in the DCS associated with this project are slightly outside the internal control limits we have determined from past DCS results. The % recovery for these analytes were all between 91% and 103% which is very reasonable for this method. We are confident that the DCS recoveries and RPDs are acceptable for this methodology and that sample data has not been adversely effected.

No other anomalies were associated with this report.

ENSECO CAL LAB'S QUALITY ASSURANCE PROGRAM

Enseco Cal Lab has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documentable quality. A key element of this program is Enseco's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample reanalyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

<u>Laboratory Control Samples - (LCS)</u>

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Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

<u>Duplicate Control Samples.</u> A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

<u>Single Control Samples</u>. An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

<u>Method Blank Results.</u> A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

SAMPLE DESCRIPTION INFORMATION for Industrial Compliance

| Lab ID | Client ID | Matrix | Sample Date | ed Time | Received Date |
|--|---------------------------------------|--|---|-------------------------|---|
| 063689-0001-SA 063689-0002-SA 063689-0003-SA 063689-0004-SA | 26717 26709 26713 Trip Blank | AQUEOUS AQUEOUS AQUEOUS AQUEOUS | 14 APR 92 14 APR 92 14 APR 92 14 APR 92 14 APR 92 | 13:15 14:40 13:50 | 15 APR 92 15 APR 92 15 APR 92 15 APR 92 15 APR 92 |

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Total Petroleum Hydrocarbons (Gasoline) and BTEX P/T-GBX-Triregional

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method P/T-GBX-TRIREGIONAL

| Client Name: Client ID: Lab ID: | Industrial Comp 26717 063689-0001-SA | iance which mw? | mw. | - |
|--|--|------------------------------------|--|--|
| Matrix: Authorized: | AQUEOUS 15 APR 92 | Sampled: 14 APR 92 Prepared: NA | | Received: 15 APR 92 Analyzed: 17 APR 92 |
| Parameter | | Result | Units | Reporting Limit |
| Benzene Toluene Ethylbenzene Xylenes (tota Gasoline Unknown hydro | 1) ocarbon | ND ND ND ND ND ND | ug/L ug/L ug/L ug/L ug/L ug/L | 0.50 0.50 0.50 0.50 50 50 |

ND = Not detected NA = Not applicable

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Reported By: Allison Kempt

Approved By: Marcia Reed

The cover letter is an integral part of this report. Rev 230787

Enseco A Corning Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method P/T-GBX-TRIREGIONAL

| Client Name: Client ID: Lab ID: Matrix: Authorized: | Industrial Com 26709 063689-0002-SA AQUEOUS 15 APR 92 | pliance かんし Sampled: 14 APR 92 Prepared: NA |) > | Received: 15 Analyzed: 17 | APR 92 APR 92 |
|--|---|---|--|--|------------------|
| Parameter | | Result | Units | Reporting Limit | |
| Benzene Toluene Ethylbenzene Xylenes (tota Gasoline Unknown hydro | l) carbon | ND ND ND ND ND ND | ug/L ug/L ug/L ug/L ug/L ug/L | 0.50 0.50 0.50 0.50 50 50 | |

ND = Not detected NA = Not applicable

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Reported By: Allison Kempt

Approved By: Marcia Reed

The cover letter is an integral part of this report. Rev 230787

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method P/T-GBX-TRIREGIONAL

| Client Name: Client ID: Lab ID: Matrix: Authorized: | Industrial Compli 26713 063689-0003-SA AQUEOUS 15 APR 92 | ance MW-l Sampled: 14 APR 92 Prepared: NA | | Received: 15 Analyzed: 17 | APR APR | 92 92 |
|--|--|--|--|--|------------|----------|
| Parameter | | Result | Units | Reporting Limit | | |
| Benzene Toluene Ethylbenzene Xylenes (tota Gasoline Unknown hydro | 1]) Dearbon | ND ND ND ND ND ND | ug/L ug/L ug/L ug/L ug/L ug/L | 0.50 0.50 0.50 0.50 50 50 | | |

ND = Not detected NA = Not applicable

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Reported By: Allison Kempt

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Approved By: Marcia Reed

The cover letter is an integral part of this report. Rev 230787

Total Petroleum Hydrocarbons (Gasoline) and BTEX

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Method P/T-GBX-TRIREGIONAL

| Client Name: Client ID: Lab ID: Matrix: Authorized: | Industrial Compl Trip Blank 063689-0004-SA AQUEOUS 15 APR 92 | iance Sampled: 14 APR 92 Prepared: NA | | Received: 15 Analyzed: 17 | APR APR | 92 92 |
|--|--|---|--|--|------------|----------|
| Parameter | | Result | Units | Reporting Limit | | |
| Benzene Toluene Ethylbenzene Xylenes (tota Gasoline Unknown hydro | 1) carbon | ND ND ND ND ND ND | ug/L ug/L ug/L ug/L ug/L ug/L | 0.50 0.50 0.50 0.50 50 50 | | |

ND = Not detected NA = Not applicable Reported By: Allison Kempt Approved By: Marcia Reed The cover letter is an integral part of this report. Rev 230787

QC LOT ASSIGNMENT REPORT Hydrocarbon Work Cell

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| Laboratory Sample Number | QC Matrix | QC Category | QC Lot Number (DCS) | QC Run Number (SCS/BLANK) |
|--|--|--|---|---|
| 063689-0001-SA 063689-0002-SA 063689-0003-SA 063689-0004-SA | AQUEOUS AQUEOUS AQUEOUS AQUEOUS | TPH-BTEX-A TPH-BTEX-A TPH-BTEX-A TPH-BTEX-A | 17 APR 92-20A 17 APR 92-20A 17 APR 92-20A 17 APR 92-20A 17 APR 92-20A | 17 APR 92-20A 17 APR 92-20A 17 APR 92-20A 17 APR 92-20A 17 APR 92-20A |

METHOD BLANK REPORT Hydrocarbon Work Cell

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| Analyte | Result | Units | Reporting Limit |
|--|----------------------------------|--|--|
| Test: TPH-G-BTEX-TR-A Matrix: AQUEOUS QC Lot: 17 APR 92-20A QC Run: 1 | 17 APR 92-20A | | |
| Benzene Toluene Ethylbenzene Xylenes (total) Gasoline Unknown hydrocarbon | ND ND ND ND ND ND | ug/L ug/L ug/L ug/L ug/L ug/L | 0.50 0.50 0.50 0.50 50 50 |
| Test: TPH-G-BTEX-TR-A Matrix: AQUEOUS QC Lot: 17 APR 92-20A QC Run: 1 | 17 APR 92-20A | | |
| Benzene Toluene Ethylbenzene Xylenes (total) Gasoline Unknown hydrocarbon | ND ND ND ND ND ND | ug/L ug/L ug/L ug/L ug/L ug/L | 0.50 0.50 0.50 0.50 50 50 |

DUPLICATE CONTROL SAMPLE REPORT Hydrocarbon Work Cell

A

| Analyte | Conc Spiked | entration DCS1 | n Measured DCS2 | AVG | Acc Aver DCS | uracy age(%) Limits | Precisi (RPD) DCS Lim | on iit |
|---|----------------------|----------------------|-----------------------|----------------------|--------------------|----------------------------|-----------------------------|-------------|
| Category: TPH-BTEX-A Matrix: AQUEOUS QC Lot: 17 APR 92-20A Concentration Units: ug/L | | | | | | | | |
| Benzene Toluene Gasoline | 5.00 5.00 1000 | 4.53 4.65 1010 | 5.11 5.14 996 | 4.82 4.90 1000 | 96 98 100 | 79-121 76-120 80-117 | 12* 10* 1.4 | 6 7 9 |

* = RPD outside QC Limits

Calculations are performed before rounding to avoid round-off errors in calculated results.

Total Petroleum Hydrocarbons (Gasoline) and BTEX TPH-D-Triregional

4

Total Petroleum Hydrocarbons by GC/FID (Triregional)

Method TPH-D-TRIREGIONAL

| Client Name: Client ID: | Industrial Complia 26717 | nce MW4 | | | |
|-----------------------------------|--|---|--------------|------------------------------|------------------|
| Lab ID: Matrix: Authorized: | 063689-0001-SA AQUEOUS 15 APR 92 | Sampled: 14 APR 92 Prepared: 17 APR 92 | | Received: 15 Analyzed: 21 | APR 92 APR 92 |
| Parameter | | Result | Units | Reporting Limit | |
| Diesel Fuel Unknown hydro | carbon | ND 70 | ug/L ug/L | 50 50 | 1 |

Note 1 : The hydrocarbon pattern present in this sample represent an unknown mixture in the range of about C8-C25. Quantitation was based upon a diesel reference in the range of C10-C24 only.

ND = Not detected NA = Not applicable

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| Reported By: Allison Kempt | Approved By: | Kris Rogers |
|----------------------------|--------------|-------------|
|----------------------------|--------------|-------------|

The cover letter is an integral part of this report. Rev 230787 Total Petroleum Hydrocarbons by GC/FID (Triregional)

Method TPH-D-TRIREGIONAL

| Client Name: Client ID: Lab ID: Matrix: Authorized: | Industrial Complia 26709 063689-0002-SA AQUEOUS 15 APR 92 | nce M Sampled: Prepared: | \W 14 17 | APR APR | 92 92 | | Received: Analyzed: | 15 21 | APR APR | 92 92 |
|---|---|--------------------------------|----------------|------------|----------|--------------|------------------------|----------|------------|----------|
| Parameter | | | Resu | ilt | | Units | Reporti Limit | ng | | |
| Diesel Fuel Unknown hydro | carbon | | ND 660 |) | | ug/L ug/L | 150 50 | | | R 1 |

Note R : Raised reporting limit(s) due to high analyte level(s).

Note 1 : The hydrocarbon pattern present in this sample reresent an unknown mixture in the range of about C9-C30. Quantitation was based upon a diesel reference in the range of C10-C24 only.

ND = Not detected NA = Not applicable

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> Reported By: Allison Kempt Approved By: Kris Rogers The cover letter is an integral part of this report. Rev 230787

Enseco

Total Petroleum Hydrocarbons by GC/FID (Triregional)

Method TPH-D-TRIREGIONAL

| Client Name: Client ID: Lab ID: Matrix: Authorized: | Industrial Complia 26713 063689-0003-SA AQUEOUS 15 APR 92 | nce MUÚ Sampled: Prepared: | 14 APR | 92 92 | Received: 1 Analyzed: 2 | 5 APR 92 1 APR 92 |
|---|---|----------------------------------|----------|--------------|----------------------------|----------------------|
| Parameter | | | Result | Units | Reportin Limit | g |
| Diesel Fuel Unknown hydro | carbon | | ND 69 | ug/L ug/L | 50 50 | 1 |

Note 1 : The hydrocarbon pattern present in this sample represent an unknown mixture in the range of about C8-C30. Quantitation was based upon a diesel reference in the range of C10-C24 only. This sample also contains 2 single peaks between C20-C21.

ND = Not detected NA = Not applicable

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Reported By: Allison Kempt Approved By: Kris Rogers
The cover letter is an integral part of this report.
Rev 230787

QC LOT ASSIGNMENT REPORT Hydrocarbon Work Cell

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| Laboratory Sample Number | QC Matrix | QC Category | QC Lot Number (DCS) | QC Run Number (SCS/BLANK) |
|-----------------------------|-----------|-------------|------------------------|------------------------------|
| 063689-0001-SA | AQUEOUS | TPH-D-TR-A | 17 APR 92-A | 17 APR 92-A |
| 063689-0002-SA | AQUEOUS | TPH-D-TR-A | 17 APR 92-A | 17 APR 92-A |
| 063689-0003-SA | AQUEOUS | TPH-D-TR-A | 17 APR 92-A | 17 APR 92-A |

METHOD BLANK REPORT Hydrocarbon Work Cell

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| Analyte | Result | Units | Reporting Limit |
|--|-----------------|--------------|--------------------|
| Test: TPH-D-TR-A Matrix: AQUEOUS QC Lot: 17 APR 92-A QC Ru | ın: 17 APR 92-A | | |
| Diesel Fuel Unknown hydrocarbon | ND ND | ug/L ug/L | 50 50 |

Enseco A Corning Company

DUPLICATE CONTROL SAMPLE REPORT Hydrocarbon Work Cell

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| Analyto | | Concentration Spiked Measured | | | | Acc Aver | uracy age(%) | Precision (PPD) | |
|--|------|----------------------------------|------|------|-----|-------------|-----------------|--------------------|-----|
| Analyte | | эрткей | DCS1 | DCS2 | AVG | DCS | Limits | DCS Li | mit |
| Category: TPH-D-TR-A Matrix: AQUEOUS QC Lot: 17 APR 92-A Concentration Units: | ug/L | | | | | | | | |
| Diesel Fuel | | 300 | 281 | 299 | 290 | 97 | 56-122 | 6.2 | 26 |

Calculations are performed before rounding to avoid round-off errors in calculated results.