Bay Area Air Quality Management District

939 Ellis Street, San Francisco, CA 94109 (415) 749-5014

REPORT OF LABORATORY ANALYSIS — FL-2

Technical Division
Laboratory Services Section

To: Glen Colwell
Person Submitting Sample
Technical Services Division, Source Test Section

HYDROCARBON SPECIATION ANALYSIS SHEET

Sample Location: Phillips 66 Company, 1380 San Pablo Ave., Rodeo, CA 94572 **Lab No: 02-164**
Source Operation # S-427 , Marine Loading Berth B2 **PLT #** 16

Date Received 6/19/02 Analyst: D. Patel **Tank # ST-450**
Date of Analysis 6/20/02 Reference: DP-11/276
Column: DB-1 Detector: FID Sys:VA3800#2
Column: 25 M Plot Al2O3/KCL 0.53 mm; Detector: FID & PID Sys:Shimadzu14 A-2
Column: 20 ft x 1/8 inch. Carboxene-1000 Detector: TCD Sys:VA3800#2

HYDROCARBON	LOD	Conc. (PPM)		HYDROCARBON	LOD	Conc. (PPM)	
Compound	(PPM)	FID/PID	as C1	Compound	(PPM)	FID/PID	as C1
Methane	**0.5**	1204	1204	Me-Cy-C6	**0.5**	28.2	197.4
Ethane	**0.5**	366.7	733.4	n-Heptane	**0.5**	15.7	109.9
Ethylene	**0.5**	67.8	135.6	C7-Olefin	**0.5**	32.3	226.1
Propylene	**0.5**	351.3	1054	Benzene	**0.5**	29.6	177.6
Propane	**0.5**	355.8	1067	C8-Olefin	**0.5**	41.2	329.6
Iso-butane	**0.5**	287.8	1151	Toluene	**0.5**	81.1	567.7
n-Butane	**0.5**	294.5	1178	MTBE	**0.5**	<0.5	<0.5
C4- Olefin	**0.5**	354.6	1418	Octane	**0.5**	8.3	66.4
Iso-Pentane	**0.5**	306.1	1531	C8-Paraffins	**0.5**	18.1	144.8
n-Pentane	**0.5**	317.0	1585	C9-Olefin	**0.5**	3.0	27.0
Methylcyclopentar	**0.5**	79.5	477.0	Nonane	**0.5**	5.6	50.4
C5-Paraffins	**0.5**	<0.5	<0.5	C9-Paraffin	**0.5**	10.9	98.1
C5-Olefin	**0.5**	174	870	C9+ Paraffin	**0.5**	5.6	56.0
Cyclohexane	**0.5**	11.2	67.2	Ethylbenzene	**0.5**	13.4	107.2
n-Hexane	**0.5**	45.9	275.4	p/m-Xylene	**0.5**	51.1	408.8
C6-Paraffins	**0.5**	55.1	330.6	O-xylene	**0.5**	21.6	172.8
C6-Olefin	**0.5**	120.8	724.8	Cumene	**0.5**	<0.5	<0.5
3-Methylpentane	**0.5**	194.6	1167.6	C9+Olefin	**0.5**	<0.5	<0.5
C7-Paraffins	**0.5**	11.2	78.4	n-Propylbenzene	**0.5**	<0.5	<0.5
2 Me C6	**0.5**	116.7	816.9	C9+ Aromatics	**0.5**	44.1	441.0
2,2,4 TriMeC5	**0.5**	1.0	8.0				
TOTAL AS C 1							**19054**
THC as C1 by B-400							**21376**

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Person Submitting Sample
Technical Services Division, Source Test Section

HYDROCARBON SPECIATION ANALYSIS SHEET

Sample Location: Phillips 66 Company, 1380 San Pablo Ave., Rodeo, CA 94572 **Lab No: 02-164**

Source Operation # S-427 , Marine Loading Berth B2 **PLT #** 16

Date Received 6/12/02 Analyst: D. Patel **Tank # ST-414**

Date of Analysis 6/13/02 Reference: DP-11,273

Column: DB-1 Detector: FID Sys:VA3800#2

Column: 25 M Plot Al2O3/KCL 0.53 mm; Detector: FID & PID Sys:Shimadzu14 A-2

Column: 20 ft x 1/8 inch. Carboxene-1000 Detector: TCD Sys:VA3800#2

HYDROCARBON	LOD	Conc. (PPM)		HYDROCARBON	LOD	Conc. (PPM)	
Compound	(PPM)	FID/PID	as C1	Compound	(PPM)	FID/PID	as C1
Methane	**0.5**	84.0	84.0	Me-Cy-C6	**0.5**	8.8	61.6
Ethane	**0.5**	18.8	37.6	n-Heptane	**0.5**	12.1	84.7
Ethylene	**0.5**	2.1	4.2	C7-Olefin	**0.5**	2.6	18.2
Propylene	**0.5**	6.8	20.4	Benzene	**0.5**	4.0	24.0
Propane	**0.5**	26.7	80.1	C8-Olefin	**0.5**	9.5	76.0
Iso-butane	**0.5**	11.8	47.2	Toluene	**0.5**	12.8	89.6
n-Butane	**0.5**	52.4	210	MTBE	**0.5**	<0.5	<0.5
C4- Olefin	**0.5**	14.7	58.8	Octane	**0.5**	9.2	73.6
Iso-Pentane	**0.5**	27.6	138	C8-Paraffins	**0.5**	15.9	127.2
n-Pentane	**0.5**	376	1882	C9-Olefin	**0.5**	1.9	17.1
Methylcyclopentar	**0.5**	11.7	70.2	Nonane	**0.5**	8.5	76.5
C5-Paraffins	**0.5**	3.4	17.0	C9-Paraffin	**0.5**	14.1	126.9
C5-Olefin	**0.5**	6.4	32.0	C9+ Paraffin	**0.5**	7.5	75.0
Cyclohexane	**0.5**	5.2	31.2	Ethylbenzene	**0.5**	5.6	44.8
n-Hexane	**0.5**	21.0	126.0	p/m-Xylene	**0.5**	12.5	100.0
C6-Paraffins	**0.5**	10.4	62.4	O-xylene	**0.5**	8.4	67.2
C6-Olefin	**0.5**	15.3	91.8	Cumene	**0.5**	<0.5	<0.5
3-Methylpentane	**0.5**	30.7	184.2	C9+Olefin	**0.5**	<0.5	<0.5
C7-Paraffins	**0.5**	3.4	23.8	n-Propylbenzene	**0.5**	<0.5	<0.5
2 Me C6	**0.5**	19.0	133.0	C9+ Aromatics	**0.5**	18.0	180.0
2,2,4 TriMeC5	**0.5**	<0.5	<0.5	Ethanol	5.0	<0.5	<0.5
TOTAL AS C 1							**4575**
THC as C1 by B-400							**6829**

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REPORT OF LABORATORY ANALYSIS — FL-2

Technical Division Laboratory Services Sectio	To: E. Stevenson/ G. Colwell Person Submitting Sample Source Test Section

Lab Method: Method 44A **Lab No:** 02-164

Sample Location: Phillips 66 Company, 1380 San Pablo Ave., Rodeo, CA 94572

Sample Type: Hydrocarbon Vapors from barge product loading operation. Product loaded was fuel oil # 6

Source Operation: S-427, Marine Loading Berth B2 **PLT #:** 16

Date Received: 6/12/2002 **Date Analyzed:** 6/18/2002

Analyst: C. V. David **Lab Ref:** CVD20:82-85

RESULTS OF GAS CHROMATOGRAPHIC ANALYSIS FOR TRS and SO_2

COMPOUNI	CONCENTRATION (ppm) Canister # ST-408	Canister # ST-414*
Sulfur Dioxide (SO_2)	<0.10	<0.10
Hydrogen Sulfide (H_2S)	<0.10	<0.10
Methyl Mercaptan (MeSH)	<0.10	0.11
Ethyl Mercaptan (EtSH)	<0.10	<0.10
Dimethylsulfide (DMS)	<0.10	<0.10
Carbonyl Sulfide (COS)	<0.10	0.15
Carbon Disulfide (CS_2)	<0.10	<0.10
Isopropyl Mercaptan (i-PrSH)	<0.10	0.14
n-Propyl Mercaptan (n-PrSH)	<0.10	<0.10
n-Butyl Mercaptan (n-BuSH)	<0.10	<0.10
Unknown Sulfur Compounds (calculated as H2S)	2.87	6.76

Note: ST-414 was diluted with N_2 prior to GC analysis (Dilution Factor = 1.52).

V. N. Recommended:

- ☐ YES REG.____ RULE____ SEC.____
- ☐ NO
- ☐ FURTHER EVALUATION NEEDED
- X FOR INFORMATION ONLY

Signed by James Hesson 7/23/02

James Hesson **Date**

Laboratory Services Manager

Bay Area Air Quality Management District

939 Ellis Street, San Francisco, CA 94109 (415) 749-5014

REPORT OF LABORATORY ANALYSIS — FL-2

Technical Division
Laboratory Services Section

To: G.Colwell
Person Submitting Sample
Tecnical Division-Source Test Section

HYDROCARBON SPECIATION ANALYSIS SHEET

Sample Location: Phillips 66 Company, 1380 San Pablo Ave., Rodeo, CA 94572 **Lab No: 02-166**

Source Operation #: S-427 , Marine Loading Berth B2 **PLT #** 16

Date Received	6/12/2002	Analyst: D. Patel	
Date of Analysis	7/17/2002	Reference: DP-11,274	
Column: DB-1		Detector: FID	Sys: VA3800#2
Column: 25 M Plot Al2O3/KCL 0.53 mm;		Detector: FID & PID	Sys:Shimadzu14 A-2
Column: 20 ft x 1/8 inch. Carboxene-1000		Detector: TCD	Sys:VA3800#2

Carbon disulfide extract of this liquid sample was analyzed by gas chromatography.
The estimated hydrocarbons were found ~0.1 % (w/w) in the original sample.

V. N. Recommended:

- ☐ **YES REG.** **RULE** **SEC.**
- ☐ **NO**
- ☐ **FURTHER EVALUATION NEEDED**
- ☐ **FOR INFORMATION ONLY**

James Hesson
Laboratory Services Manager

Date