

Bioassays of

Amoco Petroleum Products

Tampa, Hillsborough County, Florida

NPDES #FL0001627

Sampled 8/6/01

December 2001

Biology Section

Division of Resource Assessment & Management

Comprehensive Quality Assurance Plan #870346G

Bioassays of

Amoco Petroleum Products

Tampa, Hillsborough County, Florida

NPDES #FL0001627

Biology Section
Bureau of Laboratories
December 2001

Introduction

Amoco Petroleum Products, 848 McCloskey Boulevard, Tampa, Hillsborough County, Florida, NPDES #FL0001627, tests performed on 7 to 9 August 2001.

This facility is a bulk terminal for petroleum products. It has a monthly average flow during a discharge event of 0.11 MGD. Stormwater is collected in the tank farm and is released through Outfalls 001 and 002 into the Class III marine waters of Sparkman Channel, which flows into Hillsborough Bay. The stormwater receives no treatment prior to being discharged. This facility has not discharged through Outfall 002 for the past 12 months.

The facility has circular mixing zones for total recoverable iron (3.4 meters), total recoverable lead (11.2 meters), total recoverable copper (100 meters), and pH (3.4 meters) (facility summary provided by Andrea Grainger, FDEP, Tampa).

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1993, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition, EPA/600/4-90/027F.

Results and Discussion

The FDEP Biology Section performed two 48-hour static acute screening toxicity bioassays on a sample of effluent collected from this facility. The test species used for these bioassays were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi*. The test results did not indicate toxicity to either test species within 48 hours (Table 1).

Total residual chlorine and total ammonia were not detected in the sample in the laboratory. Further chemical analyses were performed on the sample, and several metals and an herbicide were identified (Table 2).

Conclusion

The sample of effluent collected from this facility on August 6, 2001 did not show acute toxicity to the either test species within 48 hours.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Amoco Petroleum Porducts, 848 McCloskey Boulevard, Tampa, Hillsborough County, Florida, NPDES# FL0001627 performed on 7 to 9 August 2001.

Facility:	**Amoco Petroleum Products**	**NPDES #**	**FL0001627**	Facility Type:	**Bulk Terminal for**	**Analysts:**	Della Parker-Hanson
Location:	848 McCloskey Boulevard	Contact/District:	Grainger/Southwest		**Petroleum Products**		Shannon Gerardi
County:	Hillsborough	Test type:	static acute screen				Joshua Ayres
Sample Collection Date:	8/6/01 Time: 0910	# tests:	2	Receiving Water:	Sparkman Channel		Marshall Faircloth
Test Beginning Date:	8/7/01 Time: 1330	Chlorination Type:	Non-chlorinated				
Test Ending Date:	8/9/01 Time: 1330				**Page 1 of 1**	**Reviewer:**	David Whitin

Organism: ***Ceriodaphnia dubia*** Life stage: < 24 hours

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[A]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/20	5	5	5	8.3	-	8.5	24.9	-	23.2	7.6	-	8.1	170	195
Control B	0/20	5	5	5	-	-	8.4	-	-	23.0	-	-	8.1	-	185
Control C	0/20	5	5	5	-	-	8.4	-	-	22.9	-	-	8.2	-	185
Control D	0/20	5	5	5	-	-	8.4	-	-	22.8	-	-	8.1		190
100% A	20/0	5	5	5	8.1	-	8.5	24.4	-	22.9	7.3	-	8.1	865	985
100% B	20/0	5	5	5	-	-	8.5	-	-	23.0	-	-	8.1	-	930
100% C	20/0	5	5	5	-	-	8.6	-	-	22.8	-	-	8.2	-	1015
100% D	20/0	5	5	5	-	-	8.6	-	-	22.8	-	-	8.1	-	1040

[A] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 23.5-26.0°C.
Incubator #2 temperature range for the test period was 24.0-25.5°C.

Organism: ***Cyprinella leedsi*** Life stage: 12 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[B]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/500	5	5	5	8.4	8.4	8.6	24.6	24.1	24.5	9.0	7.7	7.4	255	260
Control B	0/500	5	5	5	8.4	8.5	8.6	24.6	23.9	24.4	8.9	7.7	7.4	255	260
Control C	0/500	5	5	5	8.4	8.5	8.6	24.5	23.8	24.6	9.0	7.8	7.4	255	265
Control D	0/500	5	5	5	8.4	8.5	8.6	24.6	23.6	24.8	8.9	7.8	7.4	255	265
100% A	500/0	5	5	5	8.1	8.2	8.4	24.4	24.0	24.6	7.2	7.5	7.5	885	905
100% B	500/0	5	5	5	8.1	8.2	8.4	24.3	23.5	24.3	7.2	7.3	7.3	895	905
100% C	500/0	5	5	5	8.1	8.2	8.4	24.3	23.9	24.5	7.3	7.3	7.3	895	930
100% D	500/0	5	5	5	8.1	8.2	8.4	24.2	24.0	24.4	7.3	7.2	7.2	895	920

[B] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 23.5-26.0°C.
Incubator #3 temperature range for the test period was 24.5-25.5°C.

Data Transcription Verification	
date:	11/28/01
by:	Victor Brunell
	Della Parker-Hanson

Total Residual CL2	mg/L	Method
Field:	-	-
Lab:	<0.03	Hach

Ammonia	Total (mg/L)	Unionized (mg/L)
Control Water (fish):	< 0.017	<0.017
20% Dilute Mineral Water (cladocerans):	< 0.017	<0.017
100% Sample:	<0.017	<0.017

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	139	139
20% Dilute Mineral Water (cladocerans):	73	80
100% Sample:	122	200

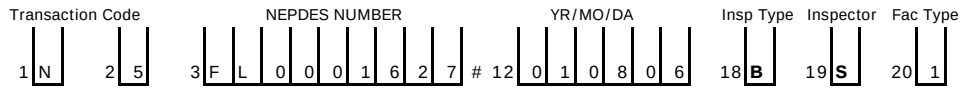
Table 2. Results of chemical analyses on the effluent from Amoco Petroleum Products sampled on August 6, 2001.

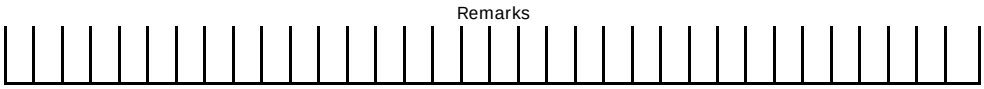
Metals		
Arsenic	3.3	µg/L [I]
Calcium	55.9	mg/L
Copper	2.64	µg/L
Iron	46	µg/L [I]
Magnesium	14.2	mg/L
Selenium	1.4	µg/L [I]
Zinc	4.8	µg/L [I]
Pesticides and Herbicides		
Atrazine	0.16	µg/L [I]
Base, Neutral, & Acid Extractable Organics		
None detected		

[I] Value reported is less than the minimum quantitation limit, and greater than or equal to the minimum detection limit.

The Bioassay of Amoco Petroleum Products effluent sampled on August 6, 2001, NPDES #FL0001627.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

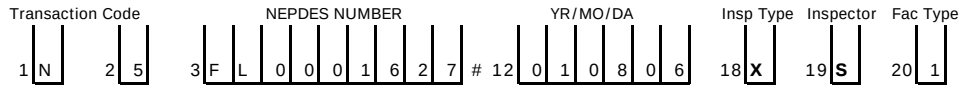


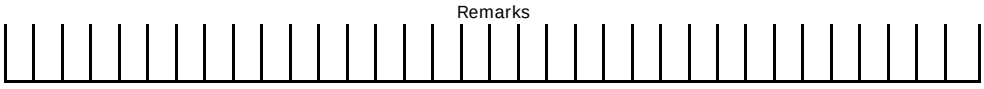


66

The Priority Pollutants Analysis for Bioassay of Amoco Petroleum Products effluent sampled on August 6, 2001, NPDES #FL0001627.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)





66