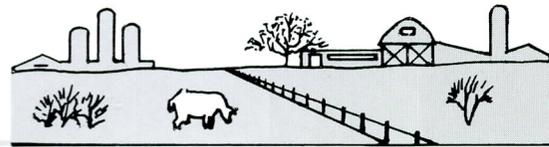


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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Stormwater Quality Report
City of Glendale, Arizona

Fourth Quarter

July 27, 1999

FLOOD CONTROL
DISTRICT

OF
MARICOPA
COUNTY

1102.024

Stormwater Quality Report

Fourth Quarter, Sampling Year 1999

April 1 through June 30, 1999

For
City of Glendale, Arizona

July 27, 1999

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Stormwater Quality Report
City of Glendale, Arizona

Fourth Quarter

July 27, 1999

Introduction

The Flood Control District of Maricopa County operates and maintains four land based stormwater monitoring stations and the United States Geological Survey operates and maintains one land based monitoring station for the City of Glendale for compliance with their National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge permit. This report contains data from the spring 1999 seasonal rainfall, April 1 through June 30, 1999.

Storm Summaries

There were no sampled storm events during the period. However, several rainfall events occurred but were not representative. A large system moved into the area on April 1 and continued through April 2. The rainfall totals and duration were too great for a summer representative event. Rainfall again occurred on April 12, but was too short in duration. Another brief storm occurred on June 2 but rainfall fell too quickly.

Maintenance Summary

This section details maintenance activities and problems during the fourth quarter. In general, sampling equipment worked well. Any problems or difficulties are detailed for each site below.

ARROW – near Skunk Creek and 79th Avenue

The equipment was serviced on June 21. Service included calibration of the pumped volume and depth sensor. The intake tubing was cleaned and the program reset.

BUTLER – near 56th Drive and Orchid Lane

The equipment was serviced on June 21. Service included calibration of the pumped volume and depth sensor. The intake tubing was cleaned and the program reset.

CITRUS – near Grovers and 71st Avenue

The equipment was serviced on June 21. Service included calibration of the pumped volume and depth sensor. The intake tubing was cleaned and the program reset.

INDUSTRIAL PARK – near New River channel

The equipment was serviced on June 21. Service included calibration of the pumped volume and depth sensor. The intake tubing was cleaned and the program reset.

OLIVE – 67th Avenue north of Olive Avenue

The USGS serviced and readied their equipment during the month of June. They did not report any significant service problems with equipment.

Data from Spring 1999

The remainder of this report contains data. The following data are included:

- Rainfall Data from each monitoring site
- Copies of maintenance and storm sheets.

Rainfall Data

Gauge Rainfall												
Gage Number	OLIVE											
Location	Olive and 67th Avenue											
	July 1998	August 1998	September 1998	October 1998	November 1998	December 1998	January 1999	February 1999	March 1999	April 1999	May 1999	June 1999
1										0.20		
2						0.28				0.69		0.26
3										0.04		
4								0.18				
5								0.02				
6						0.36						
7												
8												
9												
10												
11												
12												
13										0.12		
14												
15						0.13						
16									0.33			
17												
18												
19												
20												
21				0.05								
22												
23												
24												
25				0.32			0.03					
26												
27												
28					0.05							
29												
30				0.31								
31												
Month Total	0.00	0.00	0.00	0.68	0.05	0.77	0.03	0.20	0.33	1.05	0.00	0.26

Gauge Rainfall													
Gage Number	INDUSTRIAL PARK												
Location	New River north of Glendale Avenue (sampler gauge and ALERT gauge 5505)												
	July 1998	August 1998	September 1998	October 1998	November 1998	December 1998	January 1999	February 1999	March 1999	April 1999	May 1999	June 1999	
1										0.12			
2						0.16				0.67		0.23	
3													
4								0.31		0.04			
5													
6						0.31							
7													
8													
9													
10													
11													
12													
13										0.09			
14													
15													
16									0.40				
17													
18													
19													
20													
21													
22													
23													
24													
25				0.20									
26				0.44									
27													
28					0.08								
29					0.08								
30				0.24									
31													
Month Total	0.00	0.00	0.00	0.88	0.16	0.47	0.00	0.31	0.40	0.92	0.00	0.23	

Gauge Rainfall												
Gage Number	CITRUS											
Location	Grovers at 71st Avenue (sampler gauge and ALERT gauge 5595)											
	July 1998	August 1998	September 1998	October 1998	November 1998	December 1998	January 1999	February 1999	March 1999	April 1999	May 1999	June 1999
1										0.20		
2						0.28				0.48		0.18
3												
4								0.41		0.04		
5												
6						0.39						
7												
8												
9												
10												
11												
12												
13										0.24		
14												
15						0.11						
16									0.13			
17												
18												
19												
20												
21												
22												
23												
24												
25				0.26								
26				0.47								
27												
28					0.12							
29					0.04							
30				0.08								
31												
Month Total	0.00	0.00	0.00	0.81	0.16	0.78	0.00	0.41	0.13	0.96	0.00	0.18

Gauge Rainfall												
Gage Number	BUTLER											
Location	56th Drive and Orchid Lane											
	July 1998	August 1998	September 1998	October 1998	November 1998	December 1998	January 1999	February 1999	March 1999	April 1999	May 1999	June 1999
1												
2						0.16				0.83		0.44
3												
4								0.26		0.08		
5												
6						0.31						
7												
8												
9												
10												
11												
12												
13										0.10		
14												
15						0.08						
16									0.12			
17												
18												
19												
20												
21												
22												
23												
24												
25				0.36								
26				0.36								
27												
28					0.05							
29					0.01							
30				0.20								
31												
Month Total	0.00	0.00	0.00	0.92	0.06	0.55	0.00	0.26	0.12	1.01	0.00	0.44

Gauge Rainfall												
Gage Number	ARROW											
Location	Skunk Creek near 79th Avenue (sampler gauge and ALERT gauges 5520 & 5595)											
	July 1998	August 1998	September 1998	October 1998	November 1998	December 1998	January 1999	February 1999	March 1999	April 1999	May 1999	June 1999
1										0.20		
2						0.31				0.30		0.10
3												
4								0.26		0.06		
5												
6						0.39						
7												
8												
9												
10												
11												
12												
13										0.29		
14												
15						0.07						
16									0.12			
17												
18												
19												
20												
21												
22												
23												
24												
25				0.18								
26				0.47								
27												
28					0.12							
29					0.04							
30				0.08								
31												
Month Total	0.00	0.00	0.00	0.73	0.16	0.77	0.00	0.26	0.12	0.85	0.00	0.10

Gauge Rainfall													
Gage Number	5595												
Location	New River at Bell Road												
	July 1998	August 1998	September 1998	October 1998	November 1998	December 1998	January 1999	February 1999	March 1999	April 1999	May 1999	June 1999	
1										0.20			
2						0.28				0.31		0.12	
3													
4								0.24		0.04			
5								0.12					
6						0.31							
7													
8													
9													
10													
11													
12													
13										0.16			
14													
15						0.04							
16									0.04				
17									0.04				
18													
19													
20													
21													
22													
23													
24													
25				0.08									
26				0.24									
27													
28					0.12								
29					0.04								
30				0.08									
31													
Month Total	0.00	0.00	0.00	0.40	0.16	0.63	0.00	0.36	0.08	0.71	0.00	0.12	

Gauge Rainfall													
Gage Number		5505											
Location		New River at Glendale Avenue											
		July 1998	August 1998	September 1998	October 1998	November 1998	December 1998	January 1999	February 1999	March 1999	April 1999	May 1999	June 1999
1											0.12		
2							0.16				0.67		0.20
3													
4									0.24		0.04		
5									0.08				
6							0.31						
7													
8													
9													
10													
11													
12													
13											0.08		
14													
15													
16										0.43			
17													
18													
19													
20													
21													
22													
23													
24													
25					0.20			0.04					
26					0.43								
27													
28						0.08							
29						0.04							
30					0.24								
31													
Month Total		0.00	0.00	0.00	0.87	0.12	0.47	0.04	0.32	0.43	0.91	0.00	0.20

Gauge Rainfall													
Gage Number	5520												
Location	ACDC at 67th Avenue												
		July 1998	August 1998	September 1998	October 1998	November 1998	December 1998	January 1999	February 1999	March 1999	April 1999	May 1999	June 1999
1											0.16		
2							0.31				0.67		0.20
3													
4									0.20		0.08		
5									0.08				
6							0.31		0.04				
7													
8													
9													
10													
11													
12													
13											0.24		
14													
15							0.12						
16										0.08			
17							0.04						
18													
19													
20													
21													
22													
23													
24													
25					0.39								
26					0.52								
27													
28						0.12							
29													
30					0.20								
31													
Month Total		0.00	0.00	0.00	1.11	0.12	0.78	0.00	0.32	0.08	1.15	0.00	0.20

Records

SITE	ARROW		
DATE	6-21-99	TIME	1030
SERVICED BY	RWN DEG		
MODEL NUMBER	900MAX	SERIAL NUMBER	16010

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE volts	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING feet in length	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

Water Quality Sampler Maintenance Log Sheet

SITE	BUTLER		
DATE	6-21-99	TIME	0810
SERVICED BY	RWN / DEG		
MODEL NUMBER	900 MAY	SERIAL NUMBER	FA0798MPC016012

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE 12.1 volts	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	YES NO	YES NO	
SOLAR PANEL	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO N/A	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	YES NO	YES NO	
CONNECTION CABLES	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING feet in length	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
SAMPLER PUMP TUBING	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
DEPTH SENSOR	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
CALIBRATE DEPTH SENSOR	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	N/A	N/A	7.5"
CALIBRATE SAMPLE VOLUME	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	N/A	N/A	450mL
CLEANED SAMPLE INTAKE TUBING	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS

Water Quality Sampler Maintenance Log Sheet

SITE	CITRUS		
DATE	6-21-99	TIME	0930
SERVICED BY	RWN / DEG		
MODEL NUMBER	900 MAX	SERIAL NUMBER	16011

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE <small>volts</small>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	13.0
SOLAR PANEL	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO N/A	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
CONNECTION CABLES	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
RAINGAGE	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	16 fips
SAMPLE INTAKE TUBING <small>feet in length</small>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
SAMPLER PUMP TUBING	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
DEPTH SENSOR	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
CALIBRATE DEPTH SENSOR	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	N/A	N/A	7.50'
CALIBRATE SAMPLE VOLUME	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	N/A	N/A	452ml
CLEANED SAMPLE INTAKE TUBING	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> GOOD <input type="checkbox"/> FAIR <input type="checkbox"/> POOR	N/A	N/A	

NOTES / ACTIONS

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	IND PK	DATE	6-21-99
ARRIVAL TIME	1145	DEPARTURE TIME	
		SERVICED BY	RWN DEG
SAMPLER MODEL NUMBER	900 MAX	SAMPLER SERIAL/ASSET NUMBER	16009
PT SERIAL NUMBER/ASSET NUMBER	NC	RAINGAGE SERIAL/ASSET NUMBER	NC

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	13.2 volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	7.70'
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	900 mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS
 SMP battery 13.3 program running 6/16/99
 Industrial 13.3
 difficult to calibrate sample vol during calibration - 880-940 mL
 grab sample ~ 400-410 mL (450)
 changed tubing setting to vinyl.

EQUIPMENT CLEANING CHECKLIST

Site Arrow

Date 6/8/99 Time

Serviced By: (Signature)

Yes ^{# 3} _{cells} Data Downloaded to DTU?

1. Halt program *Key pad making funny noise when selecting options. ?*
2. Connect extension tubing to the distributor tubing on the underside of the sampler. *≡*
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

Pump approximately 1/2 gallon of Liquinox through tubing.

Pump approximately 1/2 gallon tap water through tubing.

Pump approximately 1/2 liter Nitric Acid (pH 3 - 4) through tubing.

Pump approximately 1 - 2 gallons deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

*Check battery voltage. Program restarted, copy data.
Unknown reason sampler PF left running and check phone.*

EQUIPMENT CLEANING CHECKLIST

Site Butler Park

Date 6/8/99 Time

Serviced By: (Signature)

yes cell #1

Data Downloaded to DTU?

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

Pump approximately 1/2 gallon of Liquinox through tubing.

Pump approximately 1/2 gallon tap water through tubing.

Pump approximately 1/2 liter Nitric Acid (pH 3 - 4) through tubing.

Pump approximately 1 - 2 gallons deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

#Note: Removed netting from intake line. Line flushed, everything seems ok, Restart program.

EQUIPMENT CLEANING CHECKLIST

Site Citrus Park

Date 6/5/99 Time _____

Serviced By: (Signature)

see #4 Data Downloaded to DTU?

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

Pump approximately 1/2 gallon of Liquinox through tubing.

Pump approximately 1/2 gallon tap water through tubing.

Pump approximately 1/2 liter Nitric Acid (pH 3 - 4) through tubing.

Pump approximately 1 - 2 gallons deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

clean bottles, flush restart program.
(Signature)

EQUIPMENT CLEANING CHECKLIST

Site *Industrial Park*

Date *6/8/99* Time

Serviced By: *(Signature)*

yes *cool* #2 Data Downloaded to DTU?

Checked intake line in drain, and PT.

1. Halt program *change battery old 11.3 new 13.6*
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

Pump approximately 1/2 gallon of Liquinox through tubing.

Pump approximately 1/2 gallon tap water through tubing.

Pump approximately 1/2 liter Nitric Acid (pH 3 - 4) through tubing.

Pump approximately 1 - 2 gallons deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

Try and correct distribution arm. Reset angle of hose.

STORM EVENT LOG SHEET

STATION: ARROW

DATE: 6-2-99 TIME: 1205

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

sampler was OFF

FIELD PARAMETERS:

Discharge at time of Grabs YES

Effluent pH YES

Effluent Temperature YES

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples taken?

YES

NO

Preservatives added to bottles?

YES

NO

STORM EVENT LOG SHEET

STATION BUTLER

DATE 6-2-99 TIME 1100

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

- jammed distributor
- 0.44" rain - very quickly
- runoff had passed - only 1 partial bottle

FIELD PARAMETERS:

Discharge at time of Grab

Effluent pH

Effluent Temperature

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?

YES

NO

Preservatives added to bottles?

YES

NO

STORM EVENT LOG SHEET

DATE: CITRUS

DATE: 6-2-99 TIME: 1145

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

0.18" rain - storm ended - very
little runoff nothing collected

FIELD PARAMETERS:

Discharge at time of Grabs —

Effluent pH —

Effluent Temperature —

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?

YES

NO

Preservatives added to bottles?

YES

NO

STORM EVENT LOG SHEET

STATE **IND ~~AK~~**

DATE **6-2-99** TIME **1240**

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES **NO**

IF NO, WHAT WERE PROBLEM(S):

jammed distributor
0.23" rain
base completely filled with water
storm over, but runoff was present
during visit.

FIELD PARAMETERS:

Discharge at time of Grabs	—	dis
Effluent pH	—	Site
Effluent Temperature	—	°C

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples Taken?	YES	NO
Preservatives added to bottles?	YES	NO

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	<i>Arrowhead</i>	DATE	<i>5/24/99</i>
ARRIVAL TIME		DEPARTURE TIME	
		SERVICED BY	<i>(Signature)</i>
SAMPLER MODEL NUMBER		SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER		RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	<u>GOOD</u> FAIR POOR	<u>YES</u> NO	YES NO	<i>11.2 old 13.3 - volts</i>
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS *check program, drain and battery, change out battery, check phone. Everything checked out.*

(Signature)

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Outlen Park	DATE	5/24/99
ARRIVAL TIME	DEPARTURE TIME	SERVICED BY	
SAMPLER MODEL NUMBER		<i>(Signature)</i>	
PT SERIAL NUMBER / ASSET NUMBER		SAMPLER SERIAL / ASSET NUMBER	
		RAINGAGE SERIAL / ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS *check program and battery. Some standing water in channel and park. Channel clear*

(Signature)

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	citrus Park	DATE	5/24/99
ARRIVAL TIME		DEPARTURE TIME	
SAMPLER MODEL NUMBER		SAMPLER SERIAL ASSET NUMBER	
PT SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

(Signature)

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS check battery and program. Drain clear.

(Signature)

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	<i>Industrial Park</i>	DATE	<i>5/24/99</i>
ARRIVAL TIME	DEPARTURE TIME	SERVICED BY	
SAMPLER MODEL NUMBER	SAMPLER SERIAL/ ASSET NUMBER	<i>(Signature)</i>	
PT SERIAL NUMBER/ ASSET NUMBER	RAINGAGE SERIAL/ ASSET NUMBER		

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	<u>GOOD</u> FAIR POOR	YES <u>NO</u>	YES <u>NO</u>	volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	length (feet)
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	depth (inch)
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	mL
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS *check sampler program and battery.*

channel clear.

(Signature)

Water Quality Sampler Maintenance Log Sheet

SITE	Arvo		
DATE	4/14/99	TIME	0840
SERVICED BY	<i>(Signature)</i>		
MODEL NUMBER		SERIAL NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE volts	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING feet in length	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS *clean and flush intake line, replace clean bottles, Restart program Down load data*

Water Quality Sampler Maintenance Log Sheet

SITE	Butler		
DATE	4/14/99	TIME	0915
SERVICED BY	<i>(Signature)</i>		
MODEL NUMBER		SERIAL NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE volts	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING feet in length	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS *clean and flush intake line,*

Insert new batteries, restart program

(Signature)

Water Quality Sampler Maintenance Log Sheet

SITE	Citrus Park		
DATE	4/14/99	TIME	0800
SERVICED BY	RM		
MODEL NUMBER		SERIAL NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE volts	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING feet in length	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS clean and flush intake line. Replace bottles,
Restart program
RM

STORM EVENT LOG SHEET

GLENDALE ARROW

4-13-99 1125

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

0.29" rain in 119min - ground didn't appear too wet; sampling started on 4/11 when it was sunny. will check download.

FIELD PARAMETERS:

Discharge at time of event
Flow rate
Air temperature

GRAB SAMPLES:

Take grab samples from discharge only!

Grab samples taken	YES	NO
Grab samples analyzed	YES	NO

STORM EVENT LOG SHEET

STATION: **GLENDALE BUTLER**

DATE: **4-13-99** TIME: **1045**

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

0.10" rain began sampling
collected bottles for cleaning

FIELD PARAMETERS:

~~Discharge at time of Grab~~
~~Location of~~
~~Em. or Temperature~~

GRAB SAMPLES:

Take grab samples from discharge only!

~~Grabs Samples Taken?~~

YES NO

~~Problems encountered with grab samples?~~

YES NO

STORM EVENT LOG SHEET

GLENDALE CITRUS

4-13-99 1140

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

0.24" rain, very little runoff,
possible too much sample collected in
bottle 2 - 2 samples taken, yet bottle
over filled.

FIELD PARAMETERS:

~~Discharge at time of event~~
~~Duration of~~
~~Event duration~~

GRAB SAMPLES:

Take grab samples from discharge only!

Grab Samples taken	YES	NO
Grab Samples taken	YES	NO

STORM EVENT LOG SHEET

GLENDALE INDRK

4-13-99 1105

DID EQUIPMENT OPERATE PROPERLY DURING EVENT: YES NO

IF NO, WHAT WERE PROBLEM(S):

0.09" rain, no flow ∴ no samples taken
reset/restarted program.

FIELD PARAMETERS:

Discharge during event
Flow rate
Flow direction

GRAB SAMPLES:

Take grab samples from discharge only!

Grab samples taken?

YES NO

Flow rate noted to nearest?

YES NO

Water Quality Sampler Maintenance Log Sheet

SITE	Industrial Park		
DATE	4/7/99	TIME	0800
SERVICED BY	(Signature)		
MODEL NUMBER		SERIAL NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	REPLACED?	NEEDS REPLACING?	NOTES
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	old 11.3 New 13.2 volts done
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	
CONNECTION CABLES	YES NO	GOOD FAIR POOR	YES NO	YES NO	
RAINGAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	
SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	feet in length
SAMPLER PUMP TUBING	YES NO	GOOD FAIR POOR	YES NO	YES NO	
DEPTH SENSOR	YES NO	GOOD FAIR POOR	YES NO	YES NO	
CALIBRATE DEPTH SENSOR	YES NO	GOOD FAIR POOR	N/A	N/A	
CALIBRATE SAMPLE VOLUME	YES NO	GOOD FAIR POOR	N/A	N/A	
CLEANED SAMPLE INTAKE TUBING	YES NO	GOOD FAIR POOR	N/A	N/A	

NOTES / ACTIONS *change out battery, check and clean drain by inlet.*

(Signature)

EQUIPMENT CLEANING CHECKLIST

Site

ARROW

Date

4/5/99

Time

1025

Serviced By:

(Signature)

cell 5

Data Downloaded to DTU?

Took samples 7 full bottles, 1 with one water.

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

After doing data error sign - came up, tried 3 times

Pump approximately 1/2 gallon of Liquinox through tubing.

Pump approximately 1/2 gallon tap water through tubing.

Pump approximately 1/2 liter Nitric Acid (pH 3 - 4) through tubing.

Pump approximately 1 - 2 gallons deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

EQUIPMENT CLEANING CHECKLIST

Site **59th Ave (Butler Park)**

Date **4/15/99** Time **0940**

Serviced By: _____

Trid to copy data # cell 3 # cell 3

Data Downloaded to DTU?

Remove bottles left program running

1. Halt program *7 bottles full 1 had 1 inch*
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

Pump approximately 1/2 gallon of Liquinox through tubing.

Pump approximately 1/2 gallon tap water through tubing.

Pump approximately 1/2 liter Nitric Acid (pH 3 - 4) through tubing.

Pump approximately 1 - 2 gallons deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

EQUIPMENT CLEANING CHECKLIST

Site Citrus Park

Date 4/5/99 Time 1040

Serviced By: Ran

7
 0 cell # 6
Data Downloaded to DTU?

Sampler took 4 bottle samples, other 1 inch

1. Halt program *3 day*
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

Pump approximately 1/2 gallon of Liquinox through tubing.

Pump approximately 1/2 gallon tap water through tubing.

Pump approximately 1/2 liter Nitric Acid (pH 3 - 4) through tubing.

Pump approximately 1 - 2 gallons deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.

EQUIPMENT CLEANING CHECKLIST

Site Industrial Park

Date 4/5/99 Time 0830

Serviced By: (Ru)

Sampler off, had trouble getting started

Data Downloaded to DTU?

Take sampler bottles into cleaning. Sampler did sample all bottles (half full 4) Full 4

1. Halt program
2. Connect extension tubing to the distributor tubing on the underside of the sampler.
3. Press the Purge Key on 800 models or the Manual key on 900 models.
4. On 900 models, press the Pump Operation key and then the select Purge.
5. Follow the steps below and check each as it is done.

Pump approximately 1/2 gallon tap water through tubing.

Pump approximately 1/2 gallon of Liquinox through tubing.

Pump a large quantity of tap water through tubing.

Pump a small amount of Nitric Acid (pH 3 - 4) through tubing.

Pump approximately 1/2 - 1 gallon deionized water through tubing.

6. Disconnect the extension tubing and make sure the distributor tubing is seated properly.
7. Replace the base and clean bottles.
8. If the data has been downloaded to the DTU, START the program from the beginning.
9. If the data has not been downloaded, RESUME the program.