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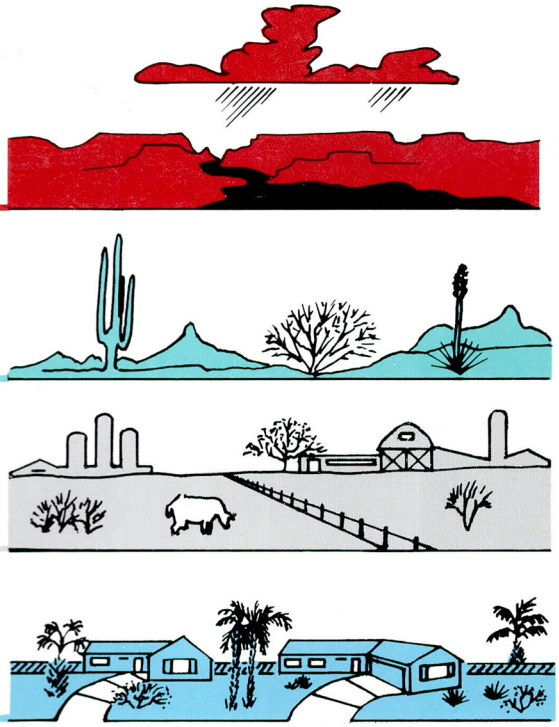

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Stormwater Quality Report
City of Glendale, Arizona

Second Quarter

February 1, 2000

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Stormwater Quality Report

Second Quarter, Sampling Year 2000

October 1, 1999 through December 31, 1999

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2801 W. Durango
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For

City of Glendale, Arizona

February 1, 2000

Stormwater Quality Report
City of Glendale, Arizona

Second Quarter

February 1, 2000

Introduction

This report details the NPDES stormwater sampling activities during the fall of 1999, which includes the period from October 1, 1999 through December 31, 1999.

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.

During storm events, only representative storm events are sampled. A representative event is defined in the following manner.

GLENDALE	RAINFALL	DURATION
SUMMER	**0.2 – 0.8 INCH**	**2.2 – 6.5 HOURS**
WINTER	**0.2 – 0.7 INCH**	**5.2 – 15.6 HOURS**

All storms are to be preceded by 72 hours with rainfall less than 0.10 inches. Summer months are April through September and winter months are October through March.

Storm Summaries

There was no precipitation from October 1 through December 31, 1999.

Maintenance Summary

This section details maintenance activities and problems that occurred during the second quarter. Although there was no precipitation during the second quarter, a Flood Control District (FCD) technician verified sampler operation at least every 30 days. Battery voltage was also checked periodically and was good at all sites.

Arrow

Between December 9 and 16, 1999 the station was vandalized. Wires were cut and the large solar panel was stolen. On December 22, 1999 FCD repaired the cut wires and replaced the solar panel. A metal screen was installed over the solar panels to deter theft.

A low flow channel was cut to eliminate ponded water below the outfall. The ponded water was preventing servicing of the pressure transducer and intake tubing. Additional O&M work may be needed to eliminate the problem.

The sampler was reprogrammed to initiate sampling at 0.10 rather than 0.05 inches of rainfall.

Butler

The sampler was reprogrammed to initiate sampling at 0.10 rather than 0.05 inches of rainfall.

Citrus

The sampler was reprogrammed to initiate sampling at 0.10 rather than 0.05 inches of rainfall.

Industrial Park

The sampler was reprogrammed to initiate sampling at 0.10 rather than 0.05 inches of rainfall.

Olive

The U.S. Geological Survey reported no problems or activities during the second quarter.

Data from Fall 1999

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

- Rainfall data from each monitoring site.
- Copies of maintenance log sheets.

Rainfall Data

Gauge Rainfall

Gage Number	ARROW											
Location	Skunk Creek near 79th Avenue											
	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	1.11											
7												
8												
9												
10												
11												
12			0.12									
13												
14	0.08		0.82									
15	0.80											
16												
17												
18												
19		0.01	0.71									
20												
21												
22												
23			0.15									
24												
25												
26												
27												
28												
29												
30												
31												
Month Total	1.99	0.01	1.80	0.00	0.00	0.00						

Gauge Rainfall

Gage Number	BUTLER											
Location	56th Drive and Orchid Lane											
	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	0.04											
7												
8												
9												
10		0.48										
11			0.17									
12			0.01									
13												
14			0.01									
15	0.54											
16												
17												
18												
19			0.41									
20												
21												
22												
23			0.35									
24			0.06									
25												
26												
27												
28												
29												
30												
31												
Month Total	0.58	0.48	1.01	0.00	0.00	0.00						

Gauge Rainfall

Gage Number	CITRUS											
Location	Grovers at 71st Avenue											
	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	1.09											
7												
8												
9												
10		0.05										
11			0.22									
12												
13												
14	0.09		0.61									
15	0.62											
16												
17												
18												
19		0.03	0.63									
20												
21												
22												
23			0.14									
24												
25												
26												
27												
28												
29												
30												
31												
Month Total	1.80	0.08	1.60	0.00	0.00	0.00						

Gauge Rainfall

Gage Number	INDUSTRIAL PARK
Location	New River north of Glendale Avenue

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	0.08											
7												
8												
9												
10		0.07										
11			0.04									
12												
13												
14			0.02									
15	0.48											
16												
17												
18												
19		0.07	0.22									
20												
21												
22												
23			0.05									
24												
25		0.07										
26												
27												
28												
29												
30												
31												
Month Total	0.56	0.21	0.33	0.00	0.00	0.00						

Gauge Rainfall

Gage Number	OLIVE
Location	Olive and 67th Avenue

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	0.12											
7	0.10											
8												
9												
10		0.34										
11			0.44									
12												
13												
14	0.12		0.10									
15	0.80											
16												
17												
18												
19			0.62									
20												
21												
22												
23			0.17									
24												
25												
26												
27	0.03											
28												
29												
30												
31												
Month Total	1.17	0.34	1.33	0.00	0.00	0.00						

Gauge Rainfall

Gage Number	4785
Location	Butler Park

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	0.04											
7	0.04											
8												
9												
10	0.08	0.43										
11			0.28									
12			0.04									
13												
14	0.04											
15	0.91											
16												
17												
18												
19			0.47									
20												
21												
22												
23			0.35									
24												
25												
26												
27		0.08										
28		0.04										
29												
30												
31												
Month Total	1.11	0.55	1.14	0.00	0.00	0.00						

Gauge Rainfall

Gage Number: 5505

Location: New River at Glendale Avenue

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6												
7	0.20											
8												
9												
10	0.08	0.04										
11			0.04									
12												
13												
14												
15	0.31											
16												
17												
18		0.04										
19			0.12									
20												
21												
22												
23			0.04									
24												
25		0.04										
26												
27	0.08											
28												
29												
30												
31		0.04										
Month Total	0.67	0.16	0.20	0.00	0.00	0.00						

Gauge Rainfall

Gage Number 5520

Location ACDC at 67th Avenue

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	0.75											
7	0.16											
8												
9												
10												
11			0.04									
12			0.04									
13												
14			0.35									
15	0.43											
16												
17												
18		0.16										
19		0.04	0.43									
20												
21												
22												
23			0.31									
24												
25												
26												
27	0.08											
28												
29												
30												
31												
Month Total	1.42	0.20	1.17	0.00	0.00	0.00						

Gauge Rainfall

Gage Number: 5595

Location: New River at Bell Road

	July 1999	August 1999	September 1999	October 1999	November 1999	December 1999	January 2000	February 2000	March 2000	April 2000	May 2000	June 2000
1												
2												
3												
4												
5												
6	0.71											
7	0.20											
8												
9												
10	0.16											
11	0.04		0.08									
12			0.04									
13												
14	0.12		0.51									
15	0.55											
16												
17												
18												
19			0.63									
20												
21												
22												
23			0.28									
24												
25												
26												
27	0.04											
28												
29												
30												
31												
Month Total	1.82	0.00	1.54	0.00	0.00	0.00						

Records

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	Arrowhead	[redacted]	12/22/99
[redacted]		[redacted]	Ren
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]	[redacted]			[redacted]
BATTERY VOLTAGE	~~YES~~ NO	~~GOOD~~ FAIR POOR	YES ~~NO~~	YES ~~NO~~	volts
SOLAR PANEL 13.2 / 13.1	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	
SAMPLER DISTRIBUTOR 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 Replace Solar Panel, repair cut wires. Install metal screen over Solar panels, check voltage and Batteries. check Sampler, everything okay.

Ren

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	Arrowhead	[redacted]	12/16/99
[redacted]		[redacted]	Allen
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]	[redacted]			[redacted]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	13.1 volts
SOLAR PANEL Small Solar left Large Cell Stolen	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	14.2
CONNECTION CABLES Repaired	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	
SAMPLER DISTRIBUTOR 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 Found Station vandalized, Large Solar panel removed wires cut and material pulled on Floor. Repair wiring, check equipment out, okay. Cover hole on side, I will install new Solar panel, make a cover of expansed metal to protect them. Site is secured. Allen

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	Arrowhead	[redacted]	12/9/99
[redacted]		[redacted]	Ran
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]				
BATTERY VOLTAGE Cell 14.7	~~YES~~ NO	~~GOOD~~ FAIR POOR	YES NO	YES NO	13.9 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	
SAMPLER DISTRIBUTOR 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 Station, Batteries, restart program
Low flow channel has NOT been cutyet. will contact
OSM and request work be done

Ran

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Arrow Park	DATE	11/10/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY			
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	GOOD FAIR POOR	YES (NO)	YES (NO)	15.1 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	
SAMPLER DISTRIBUTOR 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 Station + program, Battery, Solar panel Voltage. Clean Solar panels. check Drain outlet. Water remains, no low flow cut made. ReStart Program (Ran)

Cell Phone Battery: 13.6

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Arrow	DATE	10/25/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	[illegible]		
SAMPLER MODEL NUMBER		SAMPLER SERIAL ASSET NUMBER	
PT SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

	CHECKED SERVICED CALIBRATED	CONDITION	REPLACED	NEED 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	cleaned
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	
SAMPLER DISTRIBUTOR 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 Station, Battery and air filter.
water back in outlet.

[illegible]

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Arrow	DATE	10/18/99
ARRIVAL TIME		DEPARTURE TIME	SERVICED BY: RW
SAMPLER MODEL NUMBER		SAMPLER SERIAL / ASSET NUMBER	
PT SERIAL NUMBER / PT 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)	15.3 sampler 14.2 volts cell
SOLAR PANEL	(YES) NO N/A	(GOOD) FAIR POOR	YES (NO)	YES (NO)	clean
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	
SAMPLER DISTRIBUTOR 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 station and program. outlet pretty dry. check sensors, in place remove garbage from around them. change rainfall from 0.05" to 0.10". check program. confirm running.

RW

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Butler Park	DATE	12/16/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	Rev		
[illegible] MODEL NUMBER		[illegible] SERIAL ASSET NUMBER	
[illegible] SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

	CHECKED SERVICED CALIBRATED	CONDITION	[illegible]	[illegible]	[illegible]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	~~YES NO~~	~~YES NO~~	12.6 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	
SAMPLER DISTRIBUTOR 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 Clean trash, leaves from around sensors.

Everything looked good.

Rev

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Butler Park	DATE	12/9/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	Rem		
SAMPLER MODEL NUMBER		SAMPLER SERIAL ASSET NUMBER	
PC SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

	CHECKED SERVICED CALIBRATED	CONDITION	[illegible]	[illegible]	[illegible]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	12.5 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	
SAMPLER DISTRIBUTOR 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 Stations Battery restart program

Rem

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Butter Park	DATE	11/10/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	[redacted]		
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	(GOOD) FAIR POOR	YES (NO)	YES (NO)	12.6 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	
SAMPLER DISTRIBUTOR 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 station, Battery voltage and Solar Panel voltage output. Clean Solar panels, check channel. Restart Program.

[redacted]

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Butler Park	DATE	10/25/99
ARRIVAL TIME	DEPARTURE TIME	TECHNICIAN	Russ
SAMPLER MODEL NUMBER		RAINGAGE TRIAD ASSET NUMBER	
FLOWMETER SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

	CHECKED SENSOR CALIBRATION	CONDITION	CLEANED	REPLACED	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	cleaned
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	
SAMPLER DISTRIBUTOR 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 station, program and Battery, check air filter, cleaned

Russ

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Butler Park	DATE	10/18/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	RLM		
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	(GOOD) FAIR POOR	YES (NO)	YES (NO)	12.6 volts
SOLAR PANEL	(YES) NO N/A	(GOOD) FAIR POOR	YES (NO)	YES (NO)	cleaned
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	
SAMPLER DISTRIBUTOR 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 station, channel, battery, change Rainfall from 0105 to 0101, confirm station running

RLM

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Citrus Park	DATE	12/16/99
OPERATOR		FLOWMETER	Keen
SAMPLER MODEL		SAMPLER SERIAL NUMBER	
RAINGAGE MODEL		RAINGAGE SERIAL NUMBER	

BATTERY VOLTAGE	YES ~~NO~~	GOOD FAIR POOR	~~YES~~ NO	YES NO	13.7 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	
SAMPLER DISTRIBUTOR 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 drain, station looked good. Loose dirt around drain from work in channel.

Keen

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

[redacted]	Citrus Park	[redacted]	12/9/99
[redacted]		[redacted]	Allen
[redacted]		[redacted]	
[redacted]		[redacted]	

	[redacted]			
BATTERY VOLTAGE	~~YES~~ NO	~~GOOD~~ FAIR POOR	YES ~~NO~~	YES ~~NO~~	13.7 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	
SAMPLER DISTRIBUTOR 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 Station, drain and Battery. ReStart program

Allen

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Citrus Park	DATE	11/10/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	RWD		
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	(GOOD) FAIR POOR	YES (NO)	YES (NO)	12.7 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	
SAMPLER DISTRIBUTOR 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 Station program, Battery + Solar Panel voltage. clean Solar Panels. check drain pipe ReStart program.

RWD

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Citrus Park	DATE	10/25/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	Rem		
SAMPLER MODEL NUMBER		SAMPLER SERIAL/ ASSET NUMBER	
PT SERIAL NUMBER/ ASSET NUMBER		RAINGAGE SERIAL/ ASSET NUMBER	

	CHECKED SERVICED CALIBRATED	CONDITION	RELEASED	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	Cleaned
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	
SAMPLER DISTRIBUTOR 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 Station, Battery. check air filter

Rem

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Acton Park	DATE	10/18/99
ARRIVAL TIME		DEPARTURE TIME	
		SERVICED BY	[signature]
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	(GOOD) FAIR POOR	YES (NO)	YES (NO)	12.7 volts
SOLAR PANEL	(YES) NO N/A	(GOOD) FAIR POOR	YES (NO)	YES (NO)	clean
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	
SAMPLER DISTRIBUTOR 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 station, program and battery. Clean Solar panels. Reset rainfall from 0.05 to 0.10" confirm change and program running.

[signature]

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Industrial Park	DATE	12/16/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	Ruen		
SAMPLER MODEL NUMBER		SAMPLER SERIAL ASSET NUMBER	
FLOWSERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

	CHECKED SERVICED CALIBRATED	CONDITION	REPLACED	[illegible]	[illegible]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	12.7 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	
SAMPLER DISTRIBUTOR 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 Stationary Site

Ruen

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Industrial Park	DATE	12/9/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	Reen		
SAMPLER MODEL NUMBER		SAMPLER SERIAL ASSET NUMBER	
PC SERIAL NUMBER ASSET NUMBER		RAINGAGE SERIAL ASSET NUMBER	

	CHECKED / SERVICED / CALIBRATED	CONDITION	[illegible]	[illegible]	[illegible]
BATTERY VOLTAGE	YES NO	GOOD FAIR POOR	YES NO	YES NO	12.7 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	
SAMPLER DISTRIBUTOR 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 Station, drain and Battery. Restart program

Reen

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE ID	Industrial Pond	DATE	11/10/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY			
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	(GOOD) FAIR POOR	YES (NO)	YES (NO)	13.1 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	
SAMPLER DISTRIBUTOR 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 Station, drain, Battery and Solar Voltage clean Solar panels. ReStart program

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	10/25/99		Industrial Park
ARRIVAL TIME			

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	Cleaned
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	
SAMPLER DISTRIBUTOR 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 Station, Battery and air filter.
Confirm program running.

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

SITE	Industrial Park	DATE	10/18/99
ARRIVAL TIME		DEPARTURE TIME	
SERVICED BY	[signature]		
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	GOOD FAIR POOR	YES NO	YES NO	12.9 volts
SOLAR PANEL	YES NO N/A	GOOD FAIR POOR	YES NO	YES NO	Good Clea
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	
SAMPLER DISTRIBUTOR 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 station, program and battery. Change rainfall to 0.10' from 0.05. confirm program running.

[signature]

WATER QUALITY SAMPLER MAINTENANCE LOG SHEET

67th Ave + Olive

	09513925		12-10-99
	4:20 p.m	4:30	KDF + BJW
	ISCO		

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	
SAMPLER DISTRIBUTOR 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 Switch bottles for 1 Large bottle.

Date: 12/3/99