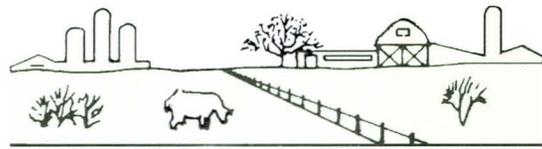
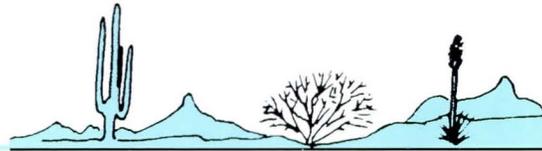
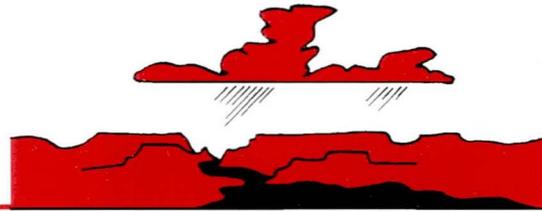


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# FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

**Stormwater Quality Report  
City of Glendale, Arizona**

**Fourth Quarter 2003**

**July 1, 2003**

FLOOD CONTROL  
DISTRICT

OF  
MARICOPA  
COUNTY

# Stormwater Quality Report

Fourth Quarter, Sampling Year 2003

April 1, 2003 through June 30, 2003

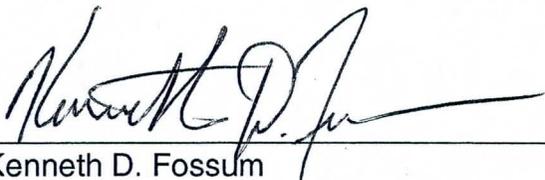
For

**City of Glendale, Arizona**

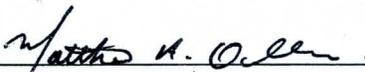
July 1, 2003

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Stormwater Quality Report  
City of Glendale, Arizona

Fourth Quarter 2003

July 1, 2003

## Introduction

The U.S. Geological Survey operates and maintains five land based stormwater monitoring stations for the City of Glendale for compliance with their National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit.

This report details stormwater sampling and equipment upkeep for the five Glendale stations for the period from April 1, 2003 through June 30, 2003.

During storm events, only representative storm events are sampled. A representative storm event has occurred when the following criteria have been met **and there has been no rainfall greater than 0.10 inches within the previous 72 hours.**

<b>GLENDALE</b>	<b>RAINFALL</b>	<b>DURATION</b>
<b>WINTER (October – March)</b>	<b>0.2 – 0.7 INCHES</b>	<b>5.2 – 15.6 HOURS</b>
<b>SUMMER (April – September)</b>	<b>0.2 – 0.8 INCHES</b>	<b>2.2 – 6.5 HOURS</b>

Storm duration is defined as the time period from start to end of a sustained rainfall. Sustained rainfall is defined as rainfall that continues without a gap of greater than 150 consecutive minutes. If a gap greater than 150 consecutive minutes occurs, then the rainfall is considered to be from a separate storm event. Summer months are April through September and winter months are October through March.

## Representative Storm Event Summaries

This is a summary of representative storm events that occurred during the fourth quarter of the 2003 sample year, from April 1 through June 30, 2003. No representative storm events occurred during this period.

Table 1 of this report, lists storm events with rainfall greater than 0.20 inches of rain (Glendale minimum summer rainfall criteria) and also specifies reasons why samples were not collected and/or analyzed. Table 2 of this report, summarizes data retrievals from the sites.

**TABLE 1  
SUMMARY OF GLENDALE STORM EVENTS  
WITH RAINFALL > 0.20 INCHES BUT NOT SAMPLED  
APRIL 1, 2003 – JUNE 30, 2003**

SITE	DATE	RAIN (inches)	REMARKS
OLIVE	04/15/03	0.20	DURATION TOO SHORT

**TABLE 2  
SUMMARY OF DATA RETRIEVALS  
APRIL 1, 2003 – JUNE 30, 2003**

SITE	DATE	RETRIEVAL TYPE
ARROW	04/10/03	Onsite
ARROW	04/16/03	Onsite - Storm
ARROW	06/02/03	Onsite
BUTLER	04/10/03	Onsite
BUTLER	04/16/03	Onsite - Storm
CITRUS	04/10/03	Onsite
CITRUS	04/16/03	Onsite - Storm
CITRUS	06/02/03	Onsite
IND PARK	04/11/03	Onsite
IND PARK	04/16/03	Onsite - Storm
IND PARK	06/02/03	Onsite
OLIVE	04/04/03	Phone - Weekly
OLIVE	04/11/03	Phone - Weekly
OLIVE	04/16/03	Phone - Storm
OLIVE	04/25/03	Phone - Weekly
OLIVE	05/02/03	Phone - Weekly
OLIVE	05/09/03	Phone - Weekly
OLIVE	05/16/03	Phone - Weekly
OLIVE	05/23/03	Phone - Weekly
OLIVE	05/30/03	Phone - Weekly
OLIVE	06/06/03	Phone - Weekly
OLIVE	06/13/03	Phone - Weekly
OLIVE	06/20/03	Phone - Weekly
OLIVE	06/27/03	Phone - Weekly

## **Maintenance Summary**

This section details maintenance activities and problems that occurred from April 1 through June 30, 2003. All water quality samplers are SIGMA 900 MAX models with the exception of the Olive stormwater station, which uses an ISCO model 3700 sampler.

### **ARROW**

The sampler was reset on April 10, 16 and June 2. The phone battery was replaced on April 10 and June 2. All sampler tubing and collection bottles were cleaned on April 16. Pulled data with the DTU unit on April 10, 16 and June 2. Reprogrammed sampler for summer sampling criteria on April 10. Raingage was cleaned and calibrated on June 2.

### **BUTLER**

The sampler was reset on April 10, 16. Pulled data with the DTU unit on April 10, 16. Sampler battery was replaced on April 10. Reprogrammed for summer sampling criteria on April 10. Sampler internal battery pack found broken on April 11. Replaced repaired sampler on April 14. Sampler malfunctioned again and was sent in for repair on April 17. Sampler was returned from SIGMA and was tested in the field on June 3. Sampler was still malfunctioning and was returned to SIGMA for further repairs on June 3.

### **CITRUS**

The sampler was reset on April 10, 16 and June 2. All sampler tubing and collection bottles were cleaned on April 16. Pulled data with the DTU unit on April 10, 16 and June 2. Reprogrammed sampler for summer sampling criteria on April 10. Raingage was discovered vandalized on June 2. Raingage was reinstalled and recalibrated on June 2.

### **INDUSTRIAL PARK**

The sampler was reset on April 11, 16 and June 2. All sampler tubing and collection bottles were cleaned on April 16. Pulled data with the DTU unit on April 11, 16 and June 2. Cleaned out raingage on June 2. Reprogrammed sampler for summer sampling criteria on April 11.

### **OLIVE**

All sampler tubing and collection bottle were cleaned on April 14. The data logger battery was replaced on June 3. Pulled empty nitrogen tank on June 3. Replaced nitrogen tank feed line on April 14. The sampler was reset on April 16.

## **Data compiled for April 1 through June 30, 2003**

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

- Rainfall tables for five Glendale NPDES raingages.
- Rainfall data for four Glendale ALERT raingages.
- Operation and maintenance log sheets.

NPDES RAINGAGES

Gauge Rainfall (inches)													
Gage Number	ARROW												
Location	Skunk Creek near 79th Avenue												
	July 2002	August 2002	September 2002	October 2002	November 2002	December 2002	January 2003	February 2003	March 2003	April 2003	May 2003	June 2003	
1		0.02		Gage					0.14				
2				not									
3				working									
4				"									
5				"					0.07				
6				"									
7				"									
8				"			0.37						
9	0.02		Gage	"			0.04						
10			not	"									
11			working	"									
12			"	"				0.22					
13			"	"				3.12					
14	0.24		"	Gage				0.31					
15			"	not						0.07			
16			"	working					0.49				
17			"			0.07			0.73				
18			"										
19			"										
20			"			0.03							
21			"										
22			"										
23	0.40		"			0.10							
24			"										
25			"					1.14					
26			"	0.06				0.18					
27			"					0.05					
28			Gage					0.04					
29			not		0.34								
30			working		0.03								
31													
Month Total	0.66	0.02	0.00	0.06	0.37	0.20	0.41	5.06	1.43	0.07	0.00	0.00	

Gauge Rainfall (inches)													
Gage Number	BUTLER												
Location	56th Drive and Orchid Lane												
	July 2002	August 2002	September 2002	October 2002	November 2002	December 2002	January 2003	February 2003	March 2003	April 2003	May 2003	June 2003	
1												gage	gage
2												not	not
3												working	working
4												--	--
5									0.06			--	--
6			1.20									--	--
7			0.66									--	--
8			0.02				0.59	0.04				--	--
9							0.04					--	--
10			0.13									--	--
11												--	--
12								0.26				--	--
13								3.62				--	--
14	1.29							0.59				--	--
15	0.01									0.13		--	--
16									0.53			--	--
17						0.05			0.66	gage		--	--
18										not		--	--
19										working		--	--
20						0.06	0.08					--	--
21												--	--
22												--	--
23	0.36			0.03		0.14						--	--
24												--	--
25								0.93				--	--
26				0.19				0.03				--	--
27								0.34				--	--
28			0.19					0.07		gage		gage	gage
29					0.45					not	gage	not	not
30					0.09					working	not	working	working
31											working		
Month Total	1.66	0.00	2.20	0.22	0.54	0.25	0.71	5.88	1.25	0.13	0.00	0.00	

Gauge Rainfall (inches)													
Gage Number	CITRUS												
Location	Grovers at 71st Avenue												
	July 2002	August 2002	September 2002	October 2002	November 2002	December 2002	January 2003	February 2003	March 2003	April 2003	May 2003	June 2003	
1									0.17				raingage
2				0.03									vandalized
3													
4													
5									0.04				
6			0.26										
7			0.95										raingage
8			0.02				0.35	0.02					vandalized
9							0.03						--
10													--
11													--
12								0.21					--
13								2.70					--
14	0.11							0.28					--
15	0.02									0.12			--
16									0.71				--
17						0.05			0.70				--
18													--
19													--
20						0.05	0.04						--
21													--
22													--
23	0.42						0.13						--
24													--
25								0.84					--
26				0.05				0.09					--
27								0.07					--
28								0.18					--
29					0.32								--
30					0.04								raingage
31													vandalized
Month Total	0.55	0.00	1.23	0.08	0.36	0.23	0.42	4.39	1.62	0.12	0.00	0.00	

Gauge Rainfall (inches)													
Gage Number		INDUSTRIAL PARK											
Location		New River north of Glendale Avenue											
		July	August	September	October	November	December	January	February	March	April	May	June
		2002	2002	2002	2002	2002	2002	2003	2003	2003	2003	2003	2003
1													
2					0.08								
3													
4													
5													
6				0.83									
7				0.72									
8				0.03				0.58					
9													
10													
11													
12									--				
13									--				
14		0.04							--				
15											0.19		
16										0.78			
17							0.03			0.65			
18													
19													
20							0.16						
21													
22													
23		0.36					0.05						
24													
25									1.19				
26					0.08				0.13				
27									0.14				
28									0.12				
29						0.38							
30						0.01							
31													
Month Total		0.40	0.00	1.58	0.16	0.39	0.24	0.58	1.58	1.33	0.19	0.00	0.00

Gauge Rainfall (inches)													
	Gage Number	OLIVE											
	Location	Olive and 67th Avenue											
	July 2002	August 2002	September 2002	October 2002	November 2002	December 2002	January 2003	February 2003	March 2003	April 2003	May 2003	June 2003	
1													
2													
3													
4													
5									0.10				
6			1.61										
7			1.47										
8			0.04				0.85	0.09					
9							0.06						
10			0.10										
11													
12								0.45					
13								5.08					
14	1.38							0.84					
15	0.04									0.20			
16									0.74				
17						0.19			1.24				
18													
19													
20						0.11	0.18						
21													
22													
23	0.46			0.05		0.22							
24													
25								1.32					
26				0.15				0.11					
27								0.29					
28			0.38					0.13					
29					0.69								
30					0.08								
31													
Month Total	1.88	0.00	3.60	0.20	0.77	0.52	1.09	8.31	2.08	0.20	0.00	0.00	

ALERT RAINGAGES

Gauge Rainfall (inches)													
Gage Number		4785											
Location		Butler Park											
		July 2002	August 2002	September 2002	October 2002	November 2002	December 2002	January 2003	February 2003	March 2003	April 2003	May 2003	June 2003
	1									0.04			
	2												
	3												
	4												
	5									0.04			
	6			0.91									
	7			0.43									
	8			0.08				0.51	0.04				
	9							0.04					
	10			0.08									
	11												
	12								0.20				
	13								2.36				
	14	1.02							0.67				
	15		--								0.16		
	16		--							0.39			
	17		--				0.08			0.51			
	18		--										
	19												
	20						0.04						
	21							0.08					
	22												
	23	0.31					0.12						
	24												
	25								0.67				
	26				0.16				0.04				
	27								0.28				
	28			0.12					0.04				
	29					0.31							
	30					0.12							
	31												
	Month Total	1.33	0.00	1.62	0.16	0.43	0.24	0.63	4.30	0.98	0.16	0.00	0.00

Gauge Rainfall (inches)													
Gage Number		5505											
Location		New River at Glendale Avenue											
		July 2002	August 2002	September 2002	October 2002	November 2002	December 2002	January 2003	February 2003	March 2003	April 2003	May 2003	June 2003
	1												
	2												
	3												
	4												
	5												
	6			0.59									
	7			0.51									
	8			0.04				0.47					
	9							0.04					
	10												
	11												
	12								0.24				
	13								2.17				
	14	0.04							0.47				
	15										0.12		
	16									0.59			
	17									0.39			
	18												
	19												
	20						0.04						
	21												
	22												
	23	0.08					0.04						
	24												
	25								0.83				
	26				0.08				0.04				
	27								0.12				
	28								0.16				
	29					0.47							
	30												
	31												
	Month Total	0.12	0.00	1.14	0.08	0.47	0.08	0.51	4.03	0.98	0.12	0.00	0.00

Gauge Rainfall (inches)													
Gage Number		5520											
Location		ACDC at 67th Avenue											
		July 2002	August 2002	September 2002	October 2002	November 2002	December 2002	January 2003	February 2003	March 2003	April 2003	May 2003	June 2003
	1									0.08			
	2				0.04								
	3												
	4												
	5			--						0.04			--
	6			0.39									
	7			0.94									
	8			--				0.31	0.04				
	9							0.08					
	10												
	11												
	12								0.16	--			
	13								2.28				
	14	0.24							0.31				
	15										0.08		
	16									0.51			
	17						0.04			0.63			
	18												
	19												
	20						0.04	0.04					
	21												
	22												
	23	0.28					0.12						
	24												
	25								0.75				
	26				0.04				0.08				
	27								0.12				
	28												
	29					0.31							
	30					0.04							
	31												
	Month Total	0.52	0.00	1.33	0.08	0.35	0.20	0.43	3.74	1.26	0.08	0.00	0.00

Gauge Rainfall (inches)													
Gage Number		5595											
Location		New River and Bell Road											
		July 2002	August 2002	September 2002	October 2002	November 2002	December 2002	January 2003	February 2003	March 2003	April 2003	May 2003	June 2003
	1		0.04							0.08			
	2		0.04										
	3												
	4												
	5									0.08			
	6			0.59									
	7			1.30									
	8							0.31					
	9							0.04					
	10												
	11												
	12								0.24				
	13								2.24				
	14	0.16							0.28				
	15	0.04							0.04		0.12		
	16									0.47			
	17						0.04			0.47			
	18												
	19												
	20						0.04						
	21												
	22												
	23	0.39					0.12						
	24												
	25								0.94				
	26				0.08				0.16				
	27				0.04				0.04				
	28								0.12				
	29					0.24							
	30					0.04							
	31												
	Month Total	0.59	0.08	1.89	0.12	0.28	0.20	0.35	4.06	1.10	0.12	0.00	0.00

OPERATION, MAINTENANCE, AND  
STORM EVENT LOG SHEETS

## STORMWATER O&M LOG SHEET

SITE	ARROW			DATE	4/10/03	
ARRIVAL TIME	0950	DEPARTURE TIME	1010	SERVICED BY	FOSSUM	
SAMPLER - MODEL NUMBER				SIGMA - 900	ISCO - 3700	

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	13.3 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	<input checked="" type="radio"/> YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="radio"/> YES <input type="radio"/> NO	depth (In)
CALIBRATED SAMPLE VOLUME	<input checked="" type="radio"/> YES <input type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.
1 PULLED DATA W/DTU, RESET, CHANGED PHONE
2 BATTERY, REPROGRAMMED FOR SUMMER SAMPLING
3 CRITERIA.

# STORMWATER O&M LOG SHEET

SITE	ARROW		DATE	4/11/03	
ARRIVAL TIME	1235	DEPARTURE TIME	1240	SERVICED BY	FOSSOM/HEMAUER
SAMPLER - MODEL NUMBER			SIGMA - 900		ISCO - 3700

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	YES NO	volts
SOLAR PANEL CLEAN	YES NO	
CABLES AND CONNECTIONS GOOD	YES NO	
CELLULAR ANTENNA	YES NO	
PHONE TONE	YES NO	
RAINGAGE (screen, funnel, tipping bucket)	YES NO	
SAMPLE TUBING (intake, pump, distributor)	YES NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	YES NO	
CALIBRATED DEPTH SENSOR	YES NO	depth (in)
CALIBRATED SAMPLE VOLUME	YES NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.	
1	DROPPED OFF BOTTLE CAPS
2	
3	

## STORMWATER O&M LOG SHEET

SITE	ARROW		DATE	4/16/03	
ARRIVAL TIME	0945	DEPARTURE TIME	1000	SERVICED BY	HEMAUER/FOSSUM
SAMPLER - MODEL NUMBER			SIGMA - 900		ISCO - 3700

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	12.8 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	<input checked="" type="radio"/> YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="radio"/> YES <input type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input checked="" type="radio"/> YES <input type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.	
1	PULLED DATA W/DTM, CLEANED BOTTLES +
2	INTAKE TUBING, RESET
3	

## STORMWATER O&M LOG SHEET

SITE	ARROW		DATE	6/2/03	
ARRIVAL TIME	0955	DEPARTURE TIME	1015	SERVICED BY	HEMAUER / FOSSUM
SAMPLER - MODEL NUMBER			SIGMA - 900		ISCO - 3700

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	<del>12.9</del> 12.9 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	<input checked="" type="radio"/> YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	CHANGED BATTERY
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	CLEANED / CALIBRATED
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="radio"/> YES <input type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input checked="" type="radio"/> YES <input type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.	
1	PULLED DATA / W DTU, RESET, CHANGED PHONE
2	BATTERY, CLEANED AND CALIBRATED
3	RAINGAGE. RESET SAMPLER TIME

## STORMWATER O&M LOG SHEET

SITE	BUTLER		DATE	4/10/03	
ARRIVAL TIME	1040	DEPARTURE TIME	1055	SERVICED BY	FOSSUM
SAMPLER - MODEL NUMBER			SIGMA - 900	ISCO - 3700	

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	MEMORY BATTERY ERROR. 12.8 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	<input type="radio"/> YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="radio"/> YES <input type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input checked="" type="radio"/> YES <input type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.
1 PULLED DATA W/DTU, RESET, CHANGED SIGMA
2 BATTERY, REPROGRAMMED FOR SUMMER
3 SAMPLING CRITERIA.

## STORMWATER O&M LOG SHEET

SITE	BUTLER		DATE	4/11/03	
ARRIVAL TIME	1205	DEPARTURE TIME	1215	SERVICED BY	Fossim/HEMAUER
SAMPLER - MODEL NUMBER			SIGMA - 900		ISCO - 3700

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	YES NO	volts
SOLAR PANEL CLEAN	YES NO	
CABLES AND CONNECTIONS GOOD	YES NO	
CELLULAR ANTENNA	YES NO	
PHONE TONE	YES NO	
RAINGAGE (screen, funnel, tipping bucket)	YES NO	
SAMPLE TUBING (intake, pump, distributor)	YES NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	YES NO	
CALIBRATED DEPTH SENSOR	YES NO	depth (in)
CALIBRATED SAMPLE VOLUME	YES NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.
1 INTERNAL BATTERY PACK BROKEN - PULLED UNIT HEAD
2 FOR REPAIR
3

# STORMWATER O&M LOG SHEET

SITE	BUTLER			DATE	4/14/03		
ARRIVAL TIME	0900	DEPARTURE TIME	0955	SERVICED BY	FOSSOM / HEMAUER		
SAMPLER - MODEL NUMBER				SIGMA - 900		ISCO - 3700	

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	volts
SOLAR PANEL CLEAN	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
CELLULAR ANTENNA	<input type="checkbox"/> YES <input type="checkbox"/> NO	
PHONE TONE	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
CALIBRATED DEPTH SENSOR	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.

1 RETURNED REPAIRED SAMPLER HEAD BUT PROGRAMMING
2 MALFUNCTION PREVENTED RESETTING SAMPLER -
3 WILL TROUBLESHOOT @ FCDMC.

# STORMWATER O&M LOG SHEET

SITE	BUTLER		DATE	4/16/03	
ARRIVAL TIME	1030	DEPARTURE TIME	1105	SERVICED BY	FOSSOM / HEMAUER
SAMPLER - MODEL NUMBER			SIGMA - 900	ISCO - 3700	

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	12.9 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	YES <input checked="" type="radio"/> NO	
CALIBRATED DEPTH SENSOR	YES <input checked="" type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	YES <input checked="" type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.
1 PULLED DATA, RESET SAMPLER, RS-485 TIME OUT
2 ERROR, CAN'T GET SAMPLER TO WORK
3

# STORMWATER O&M LOG SHEET

SITE	BUTLER		DATE	4/17/03	
ARRIVAL TIME	0730	DEPARTURE TIME	0820	SERVICED BY	HEMAUER/FOSSUOY/NAUD
SAMPLER - MODEL NUMBER			SIGMA - 900	ISCO - 3700	

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	13.0 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	YES <input checked="" type="radio"/> NO	
CALIBRATED DEPTH SENSOR	YES <input checked="" type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	YES <input checked="" type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.	
1	WORKED ON SAMPLER, PULLED PT FOR REPAIR
2	
3	

## STORMWATER O&M LOG SHEET

SITE	Butler		DATE	6/3/03	
ARRIVAL TIME	0945	DEPARTURE TIME	1030		
SAMPLER - MODEL NUMBER			SIGMA - 900		ISCO - 3700
			SERVICED BY FOSSUM / HEMAUER		

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	13.1 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	<input type="radio"/> YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="radio"/> YES <input type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input checked="" type="radio"/> YES <input type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.
1 RE INSTALLED AND TESTED / CALIBRATED NEW REMOTE
2 SENSOR CANISTER, TIMED OUT CONDITION PERSISTS, PULLED
3 SAMPLER HEAD AND CANISTER TO RETURN TO SIGMA

# STORMWATER O&M LOG SHEET

SITE	CITRUS		DATE	4/10/03	
ARRIVAL TIME	0930	DEPARTURE TIME	0940	SERVICED BY	FOSSUM
SAMPLER - MODEL NUMBER			SIGMA - 900		ISCO - 3700

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	13.6 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="radio"/> YES <input type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input checked="" type="radio"/> YES <input type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.
1 PULLED DATA W/DTU, RESET, REPROGRAMMED
2 FOR SUMMER SAMPLING CRITERIA.
3

## STORMWATER O&M LOG SHEET

SITE	CITRUS		DATE	4/16/03	
ARRIVAL TIME	0925	DEPARTURE TIME	0940	SERVICED BY	Fossum / Hemauer
SAMPLER - MODEL NUMBER			<u>SIGMA - 900</u>	ISCO - 3700	

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	13.0 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="radio"/> YES <input type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input checked="" type="radio"/> YES <input type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.
1 PULLED DATA, RESET SAMPLER, CLEANED BOTTLES, INTAKE
2 TUBING + INTAKE
3

# STORMWATER O&M LOG SHEET

SITE	CITRUS		DATE	6/2/03	
ARRIVAL TIME	0925	DEPARTURE TIME	0950	SERVICED BY	Fossom/Hemauer
SAMPLER - MODEL NUMBER			SIGMA - 900 ISCO - 3700		

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	12.9 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	<input type="radio"/> YES <input checked="" type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input type="radio"/> YES <input checked="" type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input type="radio"/> YES <input checked="" type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input type="radio"/> YES <input checked="" type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.	
1	PULLED DATA, RESET SAMPLER, RE-INSTALLED/RE-CALIBRATED
2	VANDALIZED RAIN GAGE, RE-SET TIME
3	

# STORMWATER O&M LOG SHEET

SITE	IND PARK		DATE	4/11/03	
ARRIVAL TIME	1302	DEPARTURE TIME	1335		SERVICED BY
SAMPLER - MODEL NUMBER			<del>SIGMA - 900</del>		ISCO - 3700
Fossum / HEMAUER					

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	12.9 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	<input type="radio"/> YES <input checked="" type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input type="radio"/> YES <input checked="" type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input type="radio"/> YES <input checked="" type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input type="radio"/> YES <input checked="" type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.
1 PULLED DATA, RESET SAMPLER, CHANGED SAMPLER
2 PROGRAM TO SUMMER SCHEDULE
3

# STORMWATER O&M LOG SHEET

SITE	IND. PARK			DATE	4/16/03		
ARRIVAL TIME	1145	DEPARTURE TIME	1200	SERVICED BY	Fossum/Henauer		
SAMPLER - MODEL NUMBER				<u>SIGMA - 900</u>		ISCO - 3700	

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	12.7 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="radio"/> YES <input type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input checked="" type="radio"/> YES <input type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.

1 Pulled DATA, RESET SAMPLER, CLEANED BOTTLES,

2 INTAKE & TUBING

3

# STORMWATER O&M LOG SHEET

SITE	IND PARK		DATE	6/2/03		
ARRIVAL TIME	1030	DEPARTURE TIME	<del>1050</del>		SERVICED BY	HEMAUER / FOSSUM
SAMPLER - MODEL NUMBER			SIGMA - 900		ISCO - 3700	

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	12.4 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	<input type="radio"/> YES <input checked="" type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	CLEANED
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input type="radio"/> YES <input checked="" type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input type="radio"/> YES <input checked="" type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input checked="" type="radio"/> YES <input type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.	
1	PULLED DATA w/DTU, RESET, CLEANED RAINGAGE,
2	RESET TIME
3	

# STORMWATER O&M LOG SHEET

SITE	OLIVE		DATE	4/14/03	
ARRIVAL TIME	1000	DEPARTURE TIME	1015	SERVICED BY	Fossum / Kemmer
SAMPLER - MODEL NUMBER			SIGMA - 900 <span style="float: right;">ISCO - 3700</span>		

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	<input type="radio"/> YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input type="radio"/> YES <input checked="" type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="radio"/> YES <input type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input type="radio"/> YES <input checked="" type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.	
1	REPLACED NITROGEN FEED LINE TO CONO FLOW
2	N TANK @ 580 psi
3	

# STORMWATER O&M LOG SHEET

SITE	OLIVE		DATE	4/16/03	
ARRIVAL TIME	1010	DEPARTURE TIME	1020	SERVICED BY	HEMAUER/FOSSUM
SAMPLER - MODEL NUMBER			SIGMA - 900 <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">ISCO - 3700</span>		

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="radio"/> YES <input type="radio"/> NO	12.6 volts
SOLAR PANEL CLEAN	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CELLULAR ANTENNA	YES <input type="radio"/> NO	
PHONE TONE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input checked="" type="radio"/> YES <input type="radio"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="radio"/> YES <input type="radio"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input checked="" type="radio"/> YES <input type="radio"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.	
1	CLEANED BOTTLE & INTAKE TUBING, RESET,
2	CLEANED INTAKE AREA
3	

# STORMWATER O&M LOG SHEET

SITE	① LIVE		DATE	6/3/03	
ARRIVAL TIME	0925	DEPARTURE TIME	0931	SERVICED BY	FOSSUM/HEMAUER
SAMPLER - MODEL NUMBER			SIGMA - 900 <span style="float: right;">ISCO - 3700</span>		

EQUIPMENT CHECKED		COMMENTS
BATTERY VOLTAGE OK	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	12.8 volts
SOLAR PANEL CLEAN	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
CABLES AND CONNECTIONS GOOD	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
CELLULAR ANTENNA	<input type="checkbox"/> YES <input type="checkbox"/> NO	
PHONE TONE	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
RAINGAGE (screen, funnel, tipping bucket)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
SAMPLE TUBING (intake, pump, distributor)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
CLEANED SAMPLE TUBING AND COLLECTION BOTTLE	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
CALIBRATED DEPTH SENSOR	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	depth (in)
CALIBRATED SAMPLE VOLUME	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	ml

SPECIFY ITEMS REMOVED/REPLACED/REPAIRED/INSTALLED. INCLUDE SERIAL NO IF SAMPLER OR PT INSTALLED/REMOVED.
1 CHANGED CR 10 BATTERY, PULLED EMPTY N TANK
2
3