

SEA

SAILORS ENGINEERING ASSOCIATES, INC.

1675 SPECTRUM DRIVE • LAWRENCEVILLE, GEORGIA 30043 • TEL (770) 962-5922 • FAX 962-7964

February 3, 2003

Mr. Chris Thomas
Oconee County Utility Department
P.O. Box 88
Watkinsville, Georgia 30677

RE: First Quarterly 2003 Groundwater Monitoring Report
Rocky Branch Road LAS
Oconee County, Georgia

Dear Mr. Thomas:

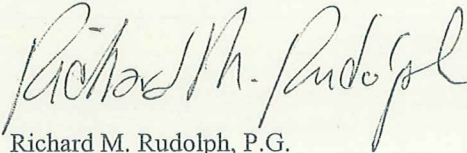
Sailors Engineering Associates, Inc. appreciates the opportunity to submit this report for the above-mentioned facility. The scope of work included the sampling and analysis of five (5) groundwater monitoring wells at the facility.

Prior to purging the wells for sampling, the depth to groundwater in each monitoring well was measured. Well purging was performed using low-flow purging procedures. A peristaltic pump was used to purge the shallow wells until specific conductance, pH, temperature and turbidity stabilize. The turbidity in several wells was above the goal of <5 NTUs. Since all the parameters were stabilized including turbidity, the turbidity of these samples was attributed to formation conditions. Upon parameter stabilization a groundwater sample was collected from each well for laboratory analysis of Nitrate-Nitrogen by EPA Method 353.3. The groundwater samples are unpreserved and must be immediately packed in ice and analyzed within 48 hours of collection. Attached is a summary table, Table 1, of the groundwater parameters measured, the average pumping rate and the nitrate concentration for each well. The nitrate concentrations remained essentially unchanged since the last sampling event on October 21, 2002. A Nitrate Concentration Map with current site conditions could not be prepared since a site plan depicting accurate well locations was not provided.

If we can be of further service to you on this project, please contact us at your convenience.

Respectfully submitted,

SAILORS ENGINEERING ASSOCIATES, INC.



Richard M. Rudolph, P.G.
Project Geologist

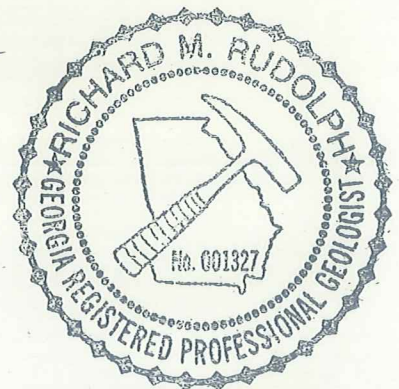


TABLE 1
GROUNDWATER PARAMETERS
QUARTERLY SAMPLING
ROCKY BRANCH LAS
OCONEE COUNTY, GEORGIA
SEA JOB #992-183

EPD Designated Well Number	Original Well Number	Date	Average Pumping Rate (l/min)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (mS/cm)	Nitrate-Nitrogen (mg/l)
UW-1	MW-1U	10/21/02	0.38	125	19.0	4.42	0.058	5.09
		1/27/03	0.33	10	15.1	4.44	0.074	3.90
MW-3	MW-2I	10/21/02	0.50	3	19.8	5.24	0.024	1.64
		1/27/03	0.32	10	16.0	5.44	0.043	1.57
DW-13	MW-3D	10/21/02	0.44	63	19.8	5.66	0.019	0.93
		1/27/03	0.34	143	13.5	6.00	0.030	0.43
MW-4	MW-4D	10/21/02	0.27	9	20.2	5.45	0.039	0.82
		1/27/03	0.24	62	13.9	5.18	0.038	0.56
UW-2	MW-5D	10/21/02	0.50	4	17.9	5.39	0.038	3.16
		1/27/03	0.33	10	15.0	5.16	0.053	3.79



ADVANCED CHEMISTRY LABS, INC.

Phone: (770) 409-1444
Fax: (770) 409-1844
e-mail: acl@mindspring.com

3039 Arnwiler Road • Suite 100 • Atlanta, GA 30360
P.O. Box 88610 • Atlanta, GA 30356
www.advancedchemistrylabs.com

Client: Sailors Engineering Assoc., Inc.
1675 Spectrum Drive
Lawrenceville, GA 30043-0000

Client Proj #: 992-183 / Rocky Branch LAS
ACL Project #: 41016
Date Received: 01/27/2003
Date Reported: 01/30/2003

Contact: Mr. Richard M. Rudolph, P.G.

<u>Sample ID</u>	<u>ACL #</u>	<u>Analyte</u>	<u>Matrix</u>	<u>Result</u>	<u>PQL</u>	<u>Units</u>	<u>Date Analyzed</u>
MW-1U	196917	Nitrate (N)(353.3)	Water	3.90	0.10	mg/L	01/28/2003
MW-2I	196918	Nitrate (N)(353.3)	Water	1.57	0.10	mg/L	01/28/2003
MW-3D	196919	Nitrate (N)(353.3)	Water	0.43	0.10	mg/L	01/28/2003
MW-4D	196920	Nitrate (N)(353.3)	Water	0.56	0.10	mg/L	01/28/2003
MW-5D	196921	Nitrate (N)(353.3)	Water	3.79	0.10	mg/L	01/28/2003


John Andros, Lab Manager

BQL = Below Quantitation Limit
J = Less than Quantitation Limit, Approximate Value
PQL = Practical Quantitation Limit

ACL

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QUALITY CONTROL SECTION



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www.advancedchemistrylabs.com

Nitrate(N) (353.3) Quality Control Data

<u>Blank:</u>	<u>ACL #</u>	<u>Matrix</u>	<u>Nitrate(N) (353.3) (mg/L)</u>
	Water Blank	Water	< 0.1

<u>Duplicate:</u>	<u>ACL #</u>	<u>Matrix</u>	<u>Nitrate(N) (353.3) (mg/L)</u>	<u>%D</u>
	196920	Water	0.56	1.3
	196920-D	Water	0.56	

<u>Matrix Spike:</u>	<u>ACL #</u>	<u>Expected Value</u>	<u>Actual Value</u>	<u>% Recovery</u>	<u>RPD</u>
	196933-S	0.25	0.25	101	1.8
	196933-SD	0.25	0.25	99	

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Company Name: Sailors Engineering Assoc., Inc. Phone #: 770.962.5922 Fax #: 770.962.7964

Company Address: 1675 Spectrum Drive Lawrenceville, GA 30043 Site Location: COOBBE COUNTY, GA ROCKY HONCH, LFS

Project Manager: Richard M. Rudolph, P.G. Client Project: (#) 092-183

(Name) ROCKY HONCH LFS Sampler Name (Print): RICHARD RUDOLPH

I attest that the proper field sampling procedures were used during the collection of these samples.

CHAIN-OF CUSTODY RECORD AND ANALYSIS REQUEST

ANALYSIS REQUEST

Table with columns for Field Sample ID, Matrix, Method Preserved, Sampling Date, and Remarks. Contains handwritten entries for samples MW-1U, MW-2I, MW-3D, MW-4D, MW-5D.

Special Reporting Requirements section including Cooler Temp. (103 °C), Lab Use Only (41016), and ACL Project #.

Received by section with signature, date (1-27-03), and time (1:05).

Special Detection Limits section with handwritten text 'GA EPD' and '3 copies + QA'.

Received by Laboratory section with signature, date (01/27/03), and time (4:45 PM).



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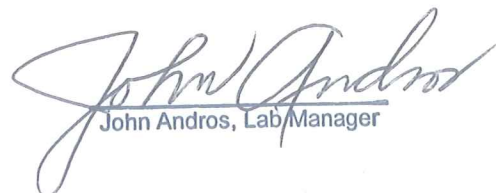
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Client: Sailors Engineering Assoc., Inc.
1675 Spectrum Drive
Lawrenceville, GA 30043-0000

Client Proj #: 992-183 / Rocky Branch LAS
ACL Project #: 41016
Date Received: 01/27/2003
Date Reported: 01/30/2003

Contact: Mr. Richard M. Rudolph, P.G.

<u>Sample ID</u>	<u>ACL #</u>	<u>Analyte</u>	<u>Matrix</u>	<u>Result</u>	<u>PQL</u>	<u>Units</u>	<u>Date Analyzed</u>
MW-1U	196917	Nitrate (N)(353.3)	Water	3.90	0.10	mg/L	01/28/2003
MW-2I	196918	Nitrate (N)(353.3)	Water	1.57	0.10	mg/L	01/28/2003
MW-3D	196919	Nitrate (N)(353.3)	Water	0.43	0.10	mg/L	01/28/2003
MW-4D	196920	Nitrate (N)(353.3)	Water	0.56	0.10	mg/L	01/28/2003
MW-5D	196921	Nitrate (N)(353.3)	Water	3.79	0.10	mg/L	01/28/2003


John Andros, Lab Manager

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J = Less than Quantitation Limit, Approximate Value
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Nitrate(N) (353.3) Quality Control Data

<u>Blank:</u>	<u>ACL #</u>	<u>Matrix</u>	<u>Nitrate(N) (353.3) (mg/L)</u>
	Water Blank	Water	< 0.1

<u>Duplicate:</u>	<u>ACL #</u>	<u>Matrix</u>	<u>Nitrate(N) (353.3) (mg/L)</u>	<u>%D</u>
	196920	Water	0.56	1.3
	196920-D	Water	0.56	

<u>Matrix Spike:</u>	<u>ACL #</u>	<u>Expected Value</u>	<u>Actual Value</u>	<u>% Recovery</u>	<u>RPD</u>
	196933-S	0.25	0.25	101	1.8
	196933-SD	0.25	0.25	99	

ACL

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Company Name: Sailors Engineering Assoc., Inc. Phone #: 770.962.5922 Fax #: 770.962.7964

Company Address: 1675 Spectrum Drive Lawrenceville, GA 30043 Project Manager: Richard M. Rudolph, P.G.

Site Location: COVINGE COUNTY, GA ROCKY MOUNTAIN LFS Client Project: (#) 092-183 (Name) ROCKY MOUNTAIN LFS Sampler Name (Print): RICHARD RUDOLPH

I attest that the proper field sampling procedures were used during the collection of these samples.

CHAIN-OF CUSTODY RECORD AND ANALYSIS REQUEST

ANALYSIS REQUEST

Table with columns: Field Sample ID, Matrix (Water, Air, Soil, Sledge, Product, Other), Method Preserved (H2O2, HNO3, HCl, Other), Sampling (Date, Time), and Remarks. Contains handwritten entries for samples MW-1U through MW-5D.

Special Detection Limits (GA EPID), Special Reporting Requirements (Lab Use Only: 41016, Cooler Temp: 103 °C), and CUSTODY RECORD (Relinquished by: [Signature], Date: 1-27-03).

Received by Laboratory: N. Williams 01/27/03 4:45 PM

SEA

SAILORS ENGINEERING ASSOCIATES, INC.

1675 SPECTRUM DRIVE • LAWRENCEVILLE, GEORGIA 30043 • TEL (770) 962-5922 • FAX 962-7964

September 29, 2003

Mr. Chris Thomas
Oconee County Utility Department
P.O. Box 88
Watkinsville, Georgia 30677

RE: **Second Quarterly 2003 Groundwater Monitoring Report**
Rocky Branch Road LAS
Oconee County, Georgia

Dear Mr. Thomas:

Sailors Engineering Associates, Inc. appreciates the opportunity to submit this report for the above-mentioned facility. The scope of work included the sampling and analysis of five (5) groundwater monitoring wells at the facility.

Prior to purging the wells for sampling, the depth to groundwater in each monitoring well was measured. Well purging was performed using low-flow purging procedures. A peristaltic pump was used to purge the shallow wells until specific conductance, pH, temperature and turbidity stabilize. The turbidity in several wells was above the goal of <5 NTUs. Since all the parameters were stabilized including turbidity, the turbidity of these samples was attributed to formation conditions. Upon parameter stabilization, a groundwater sample was collected from each well for laboratory analysis of Nitrate (NO₃) by EPA Method 300. The groundwater samples are unpreserved and must be immediately packed in ice and analyzed within 48 hours of collection. Attached is a summary table, Table 1, of the groundwater parameters measured, the average pumping rate and the nitrate concentration as Nitrate-Nitrogen and Nitrate (NO₃) for each well. The nitrate concentrations remained essentially unchanged since the last sampling event on June 19, 2003 with the exception of MW-3. The estimated Nitrate-Nitrogen concentration increased to 4.49 mg/l from 1.03 mg/l in June 2003. A Nitrate Concentration Map with current site conditions could not be prepared since a site plan depicting accurate well locations was not provided.

If we can be of further service to you on this project, please contact us at your convenience.

Respectfully submitted,

SAILORS ENGINEERING ASSOCIATES, INC.

Richard M. Rudolph
Richard M. Rudolph, P.G.
Project Geologist



TABLE 1
GROUNDWATER PARAMETERS
QUARTERLY SAMPLING
ROCKY BRANCH LAS
OCONEE COUNTY, GEORGIA
SEA JOB #992-183

EPD Designated Well Number	Original Well Number	Date	Average Pumping Rate (l/min)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (mS/cm)	Nitrate-Nitrogen (mg/l)	Nitrate (NO ₃) (mg/l)
UW-1	MW-1U	10/21/02	0.38	125	19.0	4.42	0.058	5.09	5.09
		1/27/03	0.33	10	15.1	4.44	0.074	3.90	3.90
		6/19/03	0.49	302	20.0	5.21	0.044	1.37 ^A	5.47
		9/22/03	0.43	75	19.4	4.37	0.055	1.05 ^A	4.18
MW-3	MW-2I	10/21/02	0.50	3	19.8	5.24	0.024	1.64	1.64
		1/27/03	0.32	10	16.0	5.44	0.043	1.57	1.57
		6/19/03	0.47	0	19.1	5.14	0.320	1.03 ^A	4.11
		9/22/03	0.36	9	19.4	4.17	0.070	4.49 ^A	17.97
DW-13	MW-3D	10/21/02	0.44	63	19.8	5.66	0.019	0.93	0.93
		1/27/03	0.34	143	13.5	6.00	0.030	0.43	0.43
		6/19/03	0.50	76	16.9	5.40	0.027	1.22 ^A	4.88
		9/22/03	0.46	260 ^C	19.2 ^C	5.51 ^C	0.922 ^C	1.59 ^A	6.37
MW-4	MW-4D	10/21/02	0.27	9	20.2	5.45	0.039	0.82	0.82
		1/27/03	0.24	62	13.9	5.18	0.038	0.56	0.56
		6/19/03	0.47	44	18.5	4.94	0.034	0.62 ^A	2.46
		9/22/03	0.48	17	20.4	3.79	0.043	1.73 ^A	6.91
UW-2	MW-5D	10/21/02	0.50	4	17.9	5.39	0.038	3.16	3.16
		1/27/03	0.33	10	15.0	5.16	0.053	3.79	3.79
		6/19/03	0.50	425 ^B	17.8	4.90	0.053	3.94 ^A	15.75
		9/22/03	0.41	0	18.5	3.82	0.054	3.90 ^A	15.60

A = Estimated [NO₃ concentration ÷ 4 = Nitrate-Nitrogen concentration]

B = Turbidity sensor failed

C = Instrument malfunction

MicroMacro

Analytical Laboratories

Micro-Macro International, Inc
183 Paradise Blvd. Suite 108, Athens GA 30607 USA
Telephone 706 | 548 4557 Fax 706 | 548 4891

Sailors Engineering Associates, Inc.
1675 Spectrum Drive
Lawrenceville, GA 30043

Sample ID#: 031909
Date Received: 09/22/03
Date Completed: 09/23/03

Phone: 770-962-5922
Fax: 770-962-7964

Nitrate Analysis

Sample ID#	Description	Nitrate ppm
031909-1	UW-1	4.18
031909-2	MW-3	17.97
031909-3	DW-13	6.37
031909-4	MW-4	6.91
031909-5	UW-2	15.60

**CHAIN OF
CUSTODY
RECORD**

MicroMacro International

183 Paradise Blvd., Suite 108
Athens, Georgia 30607

Ph: 706-548-4557/Fax: 706-548-4891

PROJECT NO. 992-183		LAB SAMPLE NOS.			
PROJECT NAME: OGDON (10 ROCKY ROAD) LAS		PRESERVATIVE REQUIRED			
SAMPLER(S): (Print & Sign) RICHARD RUSSELL		NONE			
PHONE: 770-962-5922 (FAX: 770-962-7964)		ANALYSES REQUIRED			
REPORT TO: SAVERS ENGINEERING ASSOCIATES INC		(NONE)			
1675 SPEC TRAIL DRIVE		NO. OF CONTAINERS SUBMITTED			
LAURENCEVILLE, GA		ZIP 30043			
PHONE:		FAX:			
STA. NO	DATE	TIME	SAMPLE DESCRIPTION	MATRIX	REMARKS/TAG NUMBERS
GW-1	7-22-03	1630	ROCKY ROAD W-66	GW	GW-1
MW-3		1435	MW-3	GW	
MW-13		1335	MW-13	GW	
MW-4		1120	MW-4	GW	
MW-2		1530	MW-2	GW	
Relinquished By: (Signature) Richard Russell		Date/Time 7-22-03/1707		Received By: (Signature) Par Davis 9/22/03	
Relinquished By: (Signature)		Date/Time		Received for Laboratory By: (Signature)	
LAB USE ONLY:		TEMP ON RECEIPT: _____ °C		ICE PRESENT: _____ Yes _____ No	
		CUSTODY SEALS: _____ Intact _____ Broken _____ NA		PRESERVATION CONFIRMED: _____ Yes _____ No (see remarks)	
		REMARKS:		REMARKS:	

SAILORS ENGINEERING ASSOCIATES, INC.
1675 SPECTRUM DRIVE
LAWRENCEVILLE, GEORGIA 30043
(770) 962-5922; FAX (770) 962-7964

FACSIMILE TRANSMITTAL SHEET

TO: Chris Thomas	FROM: Rick Rudolph
COMPANY: Oconee County Utility Department	DATE: 11/01/02
FAX NUMBER: 706-769-3997	TOTAL NO. OF PAGES INCLUDING COVER: 4
PHONE NUMBER: 706-769-3960	SENDER'S REFERENCE NUMBER: 992-183
RE: First Quarterly Groundwater Monitoring Report Rocky Branch Road LAS Oconee County, GA	YOUR REFERENCE NUMBER:

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

NOTES/COMMENTS:

A hard copy of report and invoice will be mailed. Call if you have any questions

Thanks,




SEA

SAILORS ENGINEERING ASSOCIATES, INC.

1675 SPECTRUM DRIVE • LAWRENCEVILLE, GEORGIA 30043 • TEL (770) 962-5922 • FAX 962-7964

October 31, 2002

Mr. Chris Thomas
Oconee County Utility Department
P.O. Box 88
Watkinsville, Georgia 30677

RE: First Annual Groundwater Monitoring Report
Rocky Branch Road LAS
Oconee County, Georgia

Dear Mr. Thomas:

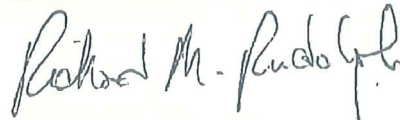
Sailors Engineering Associates, Inc. appreciates the opportunity to submit this report for the above-mentioned facility. The scope of work included the sampling and analysis of nineteen (19) groundwater monitoring wells at the facility.

Prior to purging the wells for sampling, the depth to groundwater in each monitoring well including the two piezometers were measured. Attached is the summary table, Table 1, of the water levels measured on October 19, 2002. The groundwater elevations could not be determined since the ground surface and top of casing (TOC) elevations were not provided. Well purging was performed using low-flow purging procedures. A monitoring well purge pump was used to purge the deep wells and a peristaltic pump was used to purge the shallow wells until specific conductance, pH, temperature and turbidity stabilize. The turbidity in several wells were above the goal of <5 NTUs. Since all the parameters were stabilized including turbidity, the turbidity of these samples was attributed to formation conditions. Upon parameter stabilization a groundwater sample was collected from each well for laboratory analysis of Nitrate-Nitrogen by EPA Method 353.3. The groundwater samples are unpreserved and must be immediately packed in ice and analyzed within 48 hours of collection. Attached is a summary table, Table 2, of the groundwater parameters measured, the average pumping rate and the nitrate concentration for each well. The water level measured in monitoring well UW-9R (SW-8) indicated that less than one foot of water was contained within the well casing and could not be sampled. Based on the boring log, the boring was terminated due to auger refusal on rock at a depth of 28.3 feet prior to encountering the water table. The water table is most likely located above the rock, but due to the recent drought conditions, is below the well screen. A Potentiometric Surface Map and a Nitrate Concentration Map with current site conditions could not be prepared since the groundwater elevations and an site plan depicting accurate well locations was not provided.

If we can be of further service to you on this project, please contact us at your convenience.

Respectfully submitted,

SAILORS ENGINEERING ASSOCIATES, INC.



Richard M. Rudolph, P.G.
Project Geologist



TABLE 1
GROUNDWATER ELEVATIONS
October 19, 2002
ROCKY BRANCH LAS
OCONEE COUNTY, GEORGIA
SEA JOB #992-183

EPD Designated Well Number	Original Well Number	Ground Surface Elevation (feet)	Top of Casing Elevation (feet)	Depth to Groundwater from TOC (feet)	Total Depth of well from TOC (feet)	Screened Interval (BLS)	Groundwater Elevation (feet)
UW-1	MW-1U			24.16	31.08	13.5 to 28.5	
MW-3	MW-2I			13.90	22.77	10 to 25	
DW-13	MW-3D			5.39	18.35	5 to 15	
MW-4	MW-4D			12.23	16.43	3 to 13	
UW-2	MW-5D			16.98	21.12	5 to 20	
	PZ-1			23.20	25.61	8 to 23	
P-1	PZ-2			21.81	34.99	16 to 33	
DW-7S	SW-3			9.52	21.34	8.5 to 18.5	
DW-5S	SW-4			6.57	16.91	5 to 15	
DW-4R	SW-5			10.10*	15.67*	7.75 to 12.75	
DW-11R	SW-6			22.17	32.26	19.45 to 29.45	
UW-8S	SW-7			28.28	33.80	20.98 to 30.98	
UW-9R	SW-8			30.38	31.33	18.37 to 28.37	
UW-10R	RW-1			35.02	104.80	91.94 to 101.94	
DW-12R	RW-2			13.28	104.10	81.43 to 101.43	
DW-6	RW-3			9.82	64.78	52.14 to 62.14	
	RW-4			1.00	104.66	92.34 to 102.34	
DW-4S	RW-5			5.46	104.22	91.73 to 101.73	
DW-11S	RW-6			16.07	104.39	91.81 to 101.81	
UW-8R	RW-7			27.89	104.67	91.89 to 101.89	
UW-9S	RW-8			31.21	64.76	52.35 to 62.35	

TABLE 2
GROUNDWATER PARAMETERS
OCTOBER 21, 22 & 23, 2002
ROCKY BRANCH LAS
OCONEE COUNTY, GEORGIA
SEA JOB #992-183

EPD Designated Well Number	Original Well Number	Average Pumping Rate (l/min)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (mS/cm)	Nitrate-Nitrogen (mg/l)
UW-1	MW-1U	0.38	125	19.0	4.42	0.058	5.09
MW-3	MW-2I	0.50	3	19.8	5.24	0.024	1.64
DW-13	MW-3D	0.44	63	19.8	5.88	0.019	0.93
MW-4	MW-4D	0.27	9	20.2	5.45	0.039	0.82
UW-2	MW-5D	0.50	4	17.9	5.39	0.038	3.16
	PZ-1			not sampled			
P-1	PZ-2			not sampled			
DW-7S	SW-3	0.26	57	17.6	5.89	0.020	<0.10
DW-5S	SW-4	0.41	22	17.9	5.89	0.050	<0.10
DW-4R	SW-5	0.40	97	17.9	5.71	0.025	<0.10
DW-11R	SW-6	0.37	5	16.3	5.44	0.028	2.10
UW-8S	SW-7	0.28	6	18.4	4.82	0.031	2.86
UW-9R	SW-8			not sampled			
UW-10R	RW-1	0.23	152	15.9	7.34	0.379	<0.10
DW-12R	RW-2	0.25	8	18.8	7.50	0.175	3.67
DW-6	RW-3	0.30	1	16.6	8.84	0.166	<0.10
	RW-4	0.40	2	16.2	7.49	0.114	<0.10
DW-4S	RW-5	0.27	17	16.7	7.04	0.159	<0.10
DW-11S	RW-6	0.33	40	17.7	11.08	0.343	0.14
UW-8R	RW-7	0.27	27	18.7	7.31	0.182	0.22
UW-8S	RW-8	0.46	2	17.8	7.38	0.095	0.14

SEA

SAILORS ENGINEERING ASSOCIATES, INC.

1675 SPECTRUM DRIVE • LAWRENCEVILLE, GEORGIA 30043 • TEL (770) 962-5922 • FAX 962-7964

June 26, 2002

Mr. Chris Thomas
Oconee County Utility Department
P.O. Box 88
Watkinsville, Georgia 30677

RE: Second Annual Groundwater Monitoring Report
Rocky Branch Road LAS
Oconee County, Georgia

Dear Mr. Thomas:

Sailors Engineering Associates, Inc. appreciates the opportunity to submit this report for the above-mentioned facility. The scope of work included the sampling and analysis of nineteen (19) groundwater monitoring wells at the facility.

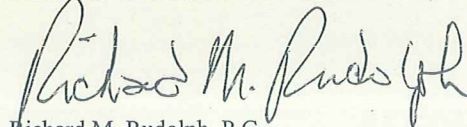
Prior to purging the wells for sampling, the depth to groundwater in each monitoring well was measured. Well purging was performed using low-flow purging procedures. A monitoring well purge pump was used to purge the deep wells and a peristaltic pump was used to purge the shallow wells until specific conductance, pH, temperature and turbidity stabilize. The turbidity in several wells was above the goal of <5 NTUs. Since all the parameters were stabilized including turbidity, the turbidity of these samples was attributed to formation conditions. Upon parameter stabilization groundwater samples were collected from each well for laboratory analyses of Nitrate by EPA Method 300.00 and the presence or absence of Total Coliform Bacteria by Hach® Method #10018. This method for Total Coliform Bacteria analysis is the standard test for fecal coliform and is approved by the US EPA. The nitrate groundwater samples are unpreserved and must be immediately packed in ice and analyzed within 48 hours of collection. The fecal coliform groundwater samples are preserved and must be immediately packed in ice and analyzed within 6 hours of collection. Attached is a summary table, Table 1, of the groundwater parameters measured, the average pumping rate, the nitrate concentration as Nitrate-Nitrogen and Nitrate (NO₃) and the presence or absence of fecal coliform for each well.

The nitrate concentrations as Nitrate-Nitrogen remained essentially unchanged since the last annual sampling event with the exception of monitoring wells UW-9R, which was not sampled in October 2002 and UW-9S. The shallow monitoring well UW-9R had an estimated Nitrate-Nitrogen concentration of 9.04 mg/l, while the deep monitoring well UW-9S had a significant increase in the estimated concentration of Nitrate-Nitrogen to 4.87 mg/l from 0.14 mg/l in October 2002. Nine monitoring wells tested positive for the presence of fecal coliform. Since this was the first sampling event to include the analysis of fecal coliform, no comparison to historical sampling events is possible. A Nitrate Concentration Map with current site conditions could not be produced since a site plan depicting accurate well locations was not provided.

If we can be of further service to you on this project, please contact us at your convenience.

Respectfully submitted,

SAILORS ENGINEERING ASSOCIATES, INC.



Richard M. Rudolph, P.G.
Project Geologist



TABLE 1
GROUNDWATER PARAMETERS
JUNE 17, 19, 20 & 23, 2003
ROCKY BRANCH LAS
OCONEE COUNTY, GEORGIA
SEA JOB #992-183

EPD Designated Well Number	Original Well Number	Date	Average Pumping Rate (l/min)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (mS/cm)	Nitrate-Nitrogen (mg/l)	Nitrate (NO ₃) (mg/l)	Fecal Coliform
UW-1	MW-1U	10/21/02	0.38	125	19.0	4.42	0.058	5.09		
		1/27/03	0.33	10	15.1	4.44	0.074	3.90		
		6/19/03	0.49	302	20.0	5.21	0.044	1.37 ^A	5.47	NEGATIVE
✓ MW-3	MW-2I	10/21/02	0.50	3	19.8	5.24	0.024	1.64		
		1/27/03	0.32	10	16.0	5.44	0.043	1.57		
		6/20/03	0.47	0	19.1	5.14	0.032	1.03 ^A	4.11	POSITIVE
✓ DW-13	MW-3D	10/21/02	0.44	63	19.8	5.66	0.019	0.93		
		1/27/03	0.34	143	13.5	6.00	0.080	0.43		
		6/23/03	0.50	76	16.9	5.40	0.027	1.22 ^A	4.88	POSITIVE
✓ MW-4	MW-4D	10/21/02	0.27	9	20.2	5.45	0.039	0.82		
		1/27/03	0.24	62	13.9	5.18	0.038	0.56		
		6/23/03	0.47	44	18.5	4.94	0.034	0.62 ^A	2.46	POSITIVE
UW-2	MW-5D	10/21/02	0.50	4	17.9	5.39	0.038	3.16		
		1/27/03	0.33	10	15.0	5.16	0.053	3.79		
		6/17/03	0.50	425 ^B	17.8	4.90	0.053	3.94 ^A	15.75	NEGATIVE
	PZ-1				not sampled					
	PZ-2				not sampled					
DW-7S	SW-3	10/23/02	0.26	57	17.6	5.69	0.020	<0.10		
		6/23/03	0.48	24	17.4	4.50	0.023	<0.25 ^A	<1.00	NEGATIVE
DW-5S	SW-4	10/23/02	0.41	22	17.9	5.89	0.050	<0.10		
		6/23/03	0.43	20	17.2	4.69	0.067	0.45 ^A	1.81	NEGATIVE

A = Estimated [NO₃ concentration ÷ 4 = Nitrate-Nitrogen concentration]
B = Turbidity sensor failed
C = Artesian flow through pump and tubing

TABLE 1
GROUNDWATER PARAMETERS
JUNE 17, 19, 20 & 23, 2003
ROCKY BRANCH LAS
OCONEE COUNTY, GEORGIA
SEA JOB #992-183

EPD Designated Well Number	Original Well Number	Date	Average Pumping Rate (l/min)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (mS/cm)	Nitrate-Nitrogen (mg/l)	Nitrate (NO ₃) (mg/l)	Fecal Coliform
DW-4R	SW-5	10/22/03	0.40	97	17.9	5.71	0.025	<0.10	<1.00	NEGATIVE
		6/20/03	0.50	6	18.1	4.46	0.031	<0.25 ^A		
DW-11R	SW-6	10/22/03	0.37	5	16.3	5.44	0.028	2.10		
		6/20/03	0.45	1	16.0	4.21	0.026	0.97 ^A	3.86	NEGATIVE
UW-8S	SW-7	10/22/02	0.28	6	18.4	4.82	0.031	2.86		
		6/19/03	0.50	10	20.3	4.42	0.073	5.43 ^A	21.70	NEGATIVE
UW-9R	SW-8	10/23/02			not sampled					
		6/19/03	0.47	130	20.4	4.43	0.100	9.04 ^A	36.15	POSITIVE
UW-10R	RW-1	10/22/02	0.23	152	15.9	7.34	0.379	<0.10		
		6/17/03	0.38	63	21.3	7.06	0.439	<0.25 ^A	<1.00	POSITIVE
DW-12R	RW-2	10/23/02	0.25	8	16.8	7.50	0.175	3.67		
		6/17/03	0.43	0	19.9	7.19	0.313	<0.25 ^A	<1.00	NEGATIVE
DW-6	RW-3	10/23/02	0.30	1	16.6	8.64	0.166	<0.10		
		6/23/03	0.48	0	18.3	7.86	0.193	<0.25 ^A	<1.00	POSITIVE
DW-4S	RW-4	10/23/02	0.40	2	16.2	7.49	0.114	<0.10		
		6/23/03	0.50 ^C	0	16.8	7.39	0.148	<0.25 ^A	<1.00	POSITIVE
DW-11S	RW-5	10/22/02	0.27	17	16.7	7.04	0.159	<0.10		
		6/20/03	0.47	12	18.2	7.25	0.297	<0.25 ^A	<1.00	POSITIVE
UW-8R	RW-6	10/22/02	0.33	40	17.7	11.08	0.343	0.14		
		6/20/03	0.42	27	19.6	10.47	0.458	<0.25 ^A	<1.00	NEGATIVE
UW-9S	RW-7	10/22/02	0.27	27	18.7	7.31	0.182	0.22		
		6/19/03	0.47	308	21.5	7.31	0.194	0.47 ^A	1.87	POSITIVE
	RW-8	10/23/02	0.46	2	17.8	7.38	0.095	0.14		
		6/19/03	0.45	0	20.2	6.93	0.120	4.87 ^A	19.47	NEGATIVE

A = Estimated [NO₃ concentration + 4 = Nitrate-Nitrogen concentration]
B = Turbidity sensor failed
C = Artesian flow through pump and tubing

Sailors Engineering Associates, Inc.
1675 Spectrum Drive
Lawrenceville, GA 30043

Sample ID#: 031230
Date Received: 6/17/03
Date Completed: 6/19/03

Phone: 770-962-5922
Fax: 770-962-7964

Nitrate Analysis

Sample ID#	Description	Nitrate ppm	Detection Limit
031230-1	UW-10R	0.00	<1.00 ppm
031230-2	UW-2	15.75	<1.00 ppm
031230-3	DW-12	0.00	<1.00 ppm



183 Paradise Blvd. Suite 108, Athens GA 30607
Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates Inc.
Address: 1675 Spectrum Drive
Lawrenceville, Ga. 30043
Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: UW -10R
Received at MMI: 6/17/03
Report Date: 6/19/03
MMI Tracking #: 031230-1

Microbiologist: Dr. F. Sherwin Lopez

Coliform Test Results

Above water sample tested **POSITIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This implies that the water is not safe from coliform or other bacteria that may be present. Contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromocresol Purple Broth (Lactose and lauryl tryptose broths with bromocresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.



183 Paradise Blvd. Suite 108, Athens GA 30607
Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

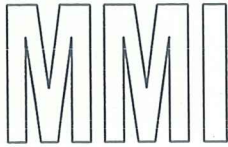
Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: UW-2
Sample Date: 6/17/2003
Received at MMI: 6/17/2003
Report Date: 6/19/2003
MMI Tracking #: 031230-2

Coliform Test Results

Above water sample tested **NEGATIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This does not imply that the water is safe from other bacteria (non-coliforms) or chemicals that may be present. If you have any other concerns, please contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromcresol Purple Broth (Lactose and lauryl tryptose broths with bromcresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.



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Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: DW-12
Sample Date: 6/17/2003
Received at MMI: 6/17/2003
Report Date: 6/19/2003
MMI Tracking #: 031230-3

Coliform Test Results

Above water sample tested **NEGATIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This does not imply that the water is safe from other bacteria (non-coliforms) or chemicals that may be present. If you have any other concerns, please contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromcresol Purple Broth (Lactose and lauryl tryptose broths with bromcresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.

**CHAIN OF
CUSTODY
RECORD**

MicroMacro International

183 Paradise Blvd., Suite 108
Athens, Georgia 30607

Ph: 706-548-4557/Fax: 706-548-4891

PROJECT NO. 992-183	LAB SAMPLE NOS.						
PROJECT NAME: ORANGE CO ROLL YARDS MS				PRESERVATIVE REQUIRED			
SAMPLER(S): (Print & Sign) Richard M. Fuchs				ANALYSES REQUIRED			
PHONE: 770-462-5922		FAX: 770-962-5796		NO. OF CONTAINERS SUBMITTED			
REPORT TO: SALIOS ENGINEERING ASSOCIATES INC							
1675 SPECTRUM DRIVE				REMARKS/TAG NUMBERS			
LAURENCEVILLE GA							
PHONE:		FAX:		MATRIX			
ZIP 30043							
STA. NO	DATE	TIME	SAMPLE DESCRIPTION	MATRIX			
UV-12-6-1103	1310		GROUNDWATER	W	1		
UV-2-6-17-8	1510		GROUNDWATER	W	1		
DW-12-6-1103	1625		GROUNDWATER	W	1		
Relinquished By: (Signature) Richard M. Fuchs				Date/Time	Received By: (Signature) Henry A. Smith		
Date/Time 6-17-03/1711				Date/Time 6-17-03			
Relinquished By: (Signature)				Received for Laboratory By: (Signature)			
Date/Time				Date/Time			
LAB USE ONLY:				Remarks:			
TEMP ON RECEIPT: _____ °C ICE PRESENT: _____ Yes _____ No							
CUSTODY SEALS: _____ Intact _____ Broken _____ NA							
PRESERVATION CONFIRMED: _____ Yes _____ No (see remarks)							

Sailors Engineering Associates, Inc.
1675 Spectrum Drive
Lawrenceville, GA 30043

Sample ID#: 031252
Date Received: 6/19/03
Date Completed: 6/23/03

Phone: 770-962-5922
Fax: 770-962-7964

Nitrate Analysis

Sample ID#	Description	Nitrate ppm
031252-1	UW-8S	21.70
031252-2	UW-8R	1.87
031252-3	UW-1	5.47
031252-4	UW-9R	36.15
031252-5	UW-9S	19.47



183 Paradise Blvd. Suite 108, Athens GA 30607
Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: UW-8S
Sample Date: 6/19/03
Received at MMI: 6/19/03
Report Date: 6/23/03
MMI Tracking #: 031252-1

Coliform Test Results

Above water sample tested **NEGATIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This does not imply that the water is safe from other bacteria (non-coliforms) or chemicals that may be present. If you have any other concerns, please contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromcresol Purple Broth (Lactose and lauryl tryptose broths with bromcresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.



183 Paradise Blvd. Suite 108, Athens GA 30607
Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

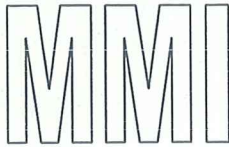
Sample Identification: UW-8R
Sample Date: 6/19/03
Received at MMI: 6/19/03
Report Date: 6/23/03
MMI Tracking #: 031252-2

Microbiologist: Dr. F. Sherwin Lopez

Coliform Test Results

Above water sample tested **POSITIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This implies that the water is not safe from coliform or other bacteria that may be present. Contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromcresol Purple Broth (Lactose and lauryl tryptose broths with bromcresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.



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Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

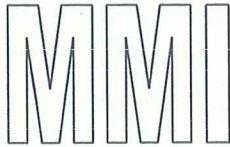
Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: UW-1
Sample Date: 6/19/03
Received at MMI: 6/19/03
Report Date: 6/23/03
MMI Tracking #: 031252-3

Coliform Test Results

Above water sample tested NEGATIVE for Total Coliform Bacteria. These results are based on the sample provided by the customer. This does not imply that the water is safe from other bacteria (non-coliforms) or chemicals that may be present. If you have any other concerns, please contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromcresol Purple Broth (Lactose and lauryl tryptose broths with bromcresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.



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Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: UW-9R
Sample Date: 6/19/03
Received at MMI: 6/19/03
Report Date: 6/23/03
MMI Tracking #: 031252-4

Microbiologist: Dr. F. Sherwin Lopez

Coliform Test Results

Above water sample tested **POSITIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This implies that the water is not safe from coliform or other bacteria that may be present. Contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromocresol Purple Broth (Lactose and lauryl tryptose broths with bromocresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.



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Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: UW-9S
Sample Date: 6/19/03
Received at MMI: 6/19/03
Report Date: 6/23/03
MMI Tracking #: 031252-5

Coliform Test Results

Above water sample tested **NEGATIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This does not imply that the water is safe from other bacteria (non-coliforms) or chemicals that may be present. If you have any other concerns, please contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromcresol Purple Broth (Lactose and lauryl tryptose broths with bromcresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.

CHAIN OF CUSTODY RECORD

MicroMacro International

183 Paradise Blvd., Suite 108
Athens, Georgia 30607

Ph: 706-548-4557/Fax: 706-548-4891

PROJECT NO:
992-183

LAB SAMPLE NOS.

PROJECT NAME: **CRONCE CO ROCKY APPROACH L&S**
 SAMPLER(S): (Print & Sign)
RICHARD M. RUDOLPH
 PHONE: **770-962-5922** FAX: **770-962-9964**

REPORT TO: **SAM-ONS ENGINEERING ASSOCIATES, INC**
1675 SPECTRUM DRIVE
MAWRANCEVILLE, GA 30043 ZIP
 PHONE: FAX:

PRESERVATIVE REQUIRED											

ANALYSES REQUIRED											

STA. NO	DATE	TIME	SAMPLE DESCRIPTION	MATRIX	NO. OF CONTAINERS SUBMITTED	REMARKS/TAG NUMBERS
AW-83	6-19-03	1200	GROUND WATER	GW	1	
AW-88	6-19-03	1250	GROUND WATER	GW	1	
AW-1	6-19-03	1435	GROUND WATER	GW	1	
AW-98	6-19-03	1615	GROUND WATER	GW	1	
AW-95	6-19-03	1620	GROUND WATER	GW	1	

Relinquished By: (Signature) **Richard M. Rudolph** Date/Time **6-19-03/1702**
 Received By: (Signature) **Richard M. Rudolph** Date/Time **6/19/03/1702**

Relinquished By: (Signature) _____ Date/Time _____
 Received for Laboratory By: (Signature) _____ Date/Time _____

LAB USE ONLY:
 TEMP ON RECEIPT: _____ °C ICE PRESENT: _____ Yes _____ No
 CUSTODY SEALS: _____ Intact _____ Broken _____ NA
 PRESERVATION CONFIRMED: _____ Yes _____ No (see remarks)

Remarks:

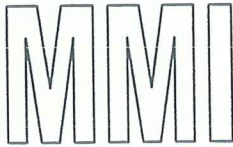
Sailors Engineering Associates, Inc.
1675 Spectrum Drive
Lawrenceville, GA 30043

Sample ID#: 031260
Date Received: 6/19/03
Date Completed: 6/23/03

Phone: 770-962-5922
Fax: 770-962-7964

Nitrate Analysis

Sample ID#	Description	Nitrate ppm
031260-1	DW-11S	0.00
031260-2	DW-11R	3.86
031260-3	D4-4S	0.00
031260-4	DW-4R	0.00
031260-5	MW-3	4.11



183 Paradise Blvd. Suite 108, Athens GA 30607
Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: DW-11S
Sample Date: 6/20/03
Received at MMI: 6/20/03
Report Date: 6/23/03
MMI Tracking #: 032160-1

Coliform Test Results

Above water sample tested **NEGATIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This does not imply that the water is safe from other bacteria (non-coliforms) or chemicals that may be present. If you have any other concerns, please contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromcresol Purple Broth (Lactose and lauryl tryptose broths with bromcresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.



183 Paradise Blvd. Suite 108, Athens GA 30607
Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: DW-11R
Sample Date: 6/20/03
Received at MMI: 6/20/03
Report Date: 6/23/03
MMI Tracking #: 032160-2

Coliform Test Results

Above water sample tested NEGATIVE for Total Coliform Bacteria. These results are based on the sample provided by the customer. This does not imply that the water is safe from other bacteria (non-coliforms) or chemicals that may be present. If you have any other concerns, please contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromcresol Purple Broth (Lactose and lauryl tryptose broths with bromcresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.



183 Paradise Blvd. Suite 108, Athens GA 30607
Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: D4-4S
Sample Date: 6/20/03
Received at MMI: 6/20/03
Report Date: 6/23/03
MMI Tracking #: 031260-3

Microbiologist: Dr. F. Sherwin Lopez

Coliform Test Results

Above water sample tested **POSITIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This implies that the water is not safe from coliform or other bacteria that may be present. Contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromocresol Purple Broth (Lactose and lauryl tryptose broths with bromocresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.



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Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: DW-4R
Sample Date: 6/20/03
Received at MMI: 6/20/03
Report Date: 6/23/03
MMI Tracking #: 032160-4

Coliform Test Results

Above water sample tested NEGATIVE for Total Coliform Bacteria. These results are based on the sample provided by the customer. This does not imply that the water is safe from other bacteria (non-coliforms) or chemicals that may be present. If you have any other concerns, please contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromcresol Purple Broth (Lactose and lauryl tryptose broths with bromcresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.



183 Paradise Blvd. Suite 108, Athens GA 30607
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Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: MW-3
Sample Date: 6/20/03
Received at MMI: 6/20/03
Report Date: 6/23/03
MMI Tracking #: 031260-5

Microbiologist: Dr. F. Sherwin Lopez

Coliform Test Results

Above water sample tested **POSITIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This implies that the water is not safe from coliform or other bacteria that may be present. Contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromocresol Purple Broth (Lactose and lauryl tryptose broths with bromocresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.

**CHAIN OF
CUSTODY
RECORD**

MicroMacro International

183 Paradise Blvd., Suite 108
Athens, Georgia 30607

Ph: 706-548-4557/Fax: 706-548-4891

PROJECT NO. 992-183		LAB SAMPLE NOS.		
PROJECT NAME: POWEE TO ROCKY BURNING MS				
SAMPLER(S): (Print & Sign) RICHARD RUDOLPH Richard M. Rudolph				
PHONE: 770-962-5422		FAX: 770-962-4964		
REPORT TO: SINCE'S ENVIRONMENTAL ASSOCIATES, INC.				
1675 SPECTRUM DRIVE				
LAURENCEVILLE, GA ZIP 30046				
PHONE:		FAX:		
STA. NO.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX
M-115	6-20-03	1:55	GROUNDAWATER	GW
M-118	6-20-03	12:15	GROUNDAWATER	GW
D-145	6-20-03	13:55	GROUNDAWATER	GW
M-148	6-20-03	14:50	GROUNDAWATER	GW
M-13	6-20-03	15:55	GROUNDAWATER	GW
NO. OF CONTAINERS SUBMITTED				
PRESERVATIVE REQUIRED				
ANALYSES REQUIRED				
REMARKS/TAG NUMBERS				
Received By: (Signature) Richard M. Rudolph			Date/Time 6-20-03/16:21	Remarks: Airbill #:
Received for Laboratory By: (Signature) Diana Mel			Date/Time 6/24/03	Remarks: Airbill #:
LAB USE ONLY:				
TEMP ON RECEIPT: _____ °C ICE PRESENT: _____ Yes _____ No				
CUSTODY SEALS: _____ Intact _____ Broken _____ NA				
PRESERVATION CONFIRMED: _____ Yes _____ No (see remarks)				

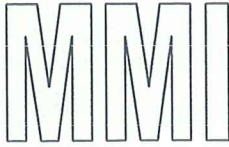
Sailors Engineering Associates, Inc.
1675 Spectrum Drive
Lawrenceville, GA 30043

Sample ID#: 031271
Date Received: 6/23/03
Date Completed: 6/25/03

Phone: 770-962-5922
Fax: 770-962-7964

Nitrate Analysis

Sample ID#	Description	Nitrate ppm
031271-1	RW-4	0.00
031271-2	DW-5S	1.81
031271-3	DW-13	4.88
031271-4	MW-4	2.46
031271-5	DW-6	0.00
031271-6	DW-7S	0.00



183 Paradise Blvd. Suite 108, Athens GA 30607
Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

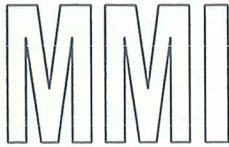
Sample Identification: RW-4
Sample Date: 6/23/03
Received at MMI: 6/23/03
Report Date: 6/25/03
MMI Tracking #: 031271-1

Microbiologist: Dr. F. Sherwin Lopez

Coliform Test Results

Above water sample tested **POSITIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This implies that the water is not safe from coliform or other bacteria that may be present. Contact your county extension agent or local health department.

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Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

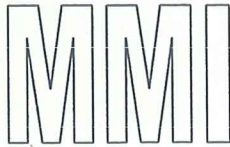
Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: DW-5S
Sample Date: 6/23/03
Received at MMI: 6/23/03
Report Date: 6/25/03
MMI Tracking #: 031271-2

Coliform Test Results

Above water sample tested **NEGATIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This does not imply that the water is safe from other bacteria (non-coliforms) or chemicals that may be present. If you have any other concerns, please contact your county extension agent or local health department.

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Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

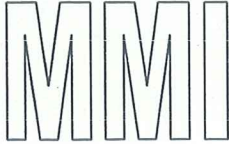
Sample Identification: DW-13
Sample Date: 6/23/03
Received at MMI: 6/23/03
Report Date: 6/25/03
MMI Tracking #: 031271-3

Microbiologist: Dr. F. Sherwin Lopez

Coliform Test Results

Above water sample tested **POSITIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This implies that the water is not safe from coliform or other bacteria that may be present. Contact your county extension agent or local health department.

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Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

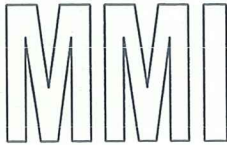
Sample Identification: MW-4
Sample Date: 6/23/03
Received at MMI: 6/23/03
Report Date: 6/25/03
MMI Tracking #: 031271-4

Microbiologist: Dr. F. Sherwin Lopez

Coliform Test Results

Above water sample tested **POSITIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This implies that the water is not safe from coliform or other bacteria that may be present. Contact your county extension agent or local health department.

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Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

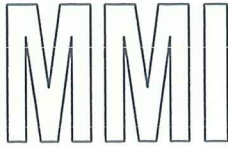
Sample Identification: DW-6
Sample Date: 6/23/03
Received at MMI: 6/23/03
Report Date: 6/25/03
MMI Tracking #: 031271-5

Microbiologist: Dr. F. Sherwin Lopez

Coliform Test Results

Above water sample tested **POSITIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This implies that the water is not safe from coliform or other bacteria that may be present. Contact your county extension agent or local health department.

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Phone: 706-548-4557 Fax: 706-548-4891

Water Analysis Report

Client Name: Sailors Engineering Associates, Inc.
Address: 1675 Spectrum Drive
Lawrenceville, GA 30043

Phone: 770-962-5922
Fax: 770-962-7964

Sample Identification: DW-7S
Sample Date: 6/23/03
Received at MMI: 6/23/03
Report Date: 6/25/03
MMI Tracking #: 031271-6

Coliform Test Results

Above water sample tested **NEGATIVE** for Total Coliform Bacteria. These results are based on the sample provided by the customer. This does not imply that the water is safe from other bacteria (non-coliforms) or chemicals that may be present. If you have any other concerns, please contact your county extension agent or local health department.

Testing protocol: Water samples were assayed using Hach® Presence/Absence Bromcresol Purple Broth (Lactose and lauryl tryptose broths with bromcresol purple). Samples were incubated at 35 °C for 24-48 Hr. Total coliform results were determined colorimetrically. Hach® Method #10018 is approved/accepted for reporting total coliform in drinking water by the U.S. Environmental Protection Agency. This method is approved/accepted for presence/absence testing of drinking water in the Code of Federal Regulations 40 CFR, 141.21 (f)(3561) and the *Standard Methods for the Examination of Water and Wastewater*, 18th Edition.

**CHAIN OF
CUSTODY
RECORD**

MicroMacro International

183 Paradise Blvd., Suite 108
Athens, Georgia 30607

Ph: 706-548-4557/Fax: 706-548-4891

PROJECT NO. 992-183		LAB SAMPLE NOS.					
PROJECT NAME: OCONEE CO ROCKY BRANCH LMS		PRESERVATIVE REQUIRED					
SAMPLER(S): (Print & Sign) RICHARD RUDOLPH Richard A. Rudolph		ANALYSES REQUIRED					
PHONE: 770-962-5922 FAX: 770-962-7964		NO. OF CONTAINERS SUBMITTED					
REPORT TO: SALICES ENGINEERING ASSOC. INC.		REMARKS/TAG NUMBERS					
1625 SPECTRUM DRIVE							
LANDENCELLE, GA ZIP 30043							
PHONE: FAX:							
STA NO	DATE	TIME	SAMPLE DESCRIPTION	MATRIX	NO. OF CONTAINERS SUBMITTED	REMARKS/TAG NUMBERS	
RM-4	6-23-03	1045	GROUND WATER	GW	11		
DM-5B	6-23-03	1110	GROUND WATER	GW	11		
DM-13	6-23-03	1230	GROUND WATER	GW	11		
MM-4	6-23-03	1335	GROUND WATER	GW	11		
DM-6	6-23-03	1440	GROUND WATER	GW	11		
DM-7	6-23-03	1505	GROUND WATER	GW	11		
Relinquished By: (Signature) Richard A. Rudolph		Date/Time 6-23-03/1550		Received By: (Signature) Richard A. Rudolph		Date/Time 6/23/03	
Relinquished By: (Signature)		Date/Time		Received for Laboratory By: (Signature)		Date/Time	
LAB USE ONLY:		TEMP ON RECEIPT: _____ °C		ICE PRESENT: _____ Yes _____ No		CUSTODY SEALS: _____ Intact _____ Broken _____ NA	
		PRESERVATION CONFIRMED: _____ Yes _____ No (see remarks)		Remarks:		Remarks:	

The logo for SAILORS ENGINEERING ASSOCIATES, INC. features the letters "SEA" in a bold, serif font, centered within a semi-circular arch.

SAILORS ENGINEERING ASSOCIATES, INC.

1675 SPECTRUM DRIVE • LAWRENCEVILLE, GEORGIA 30043 • TEL (770) 962-5922 • FAX 962-7964

September 29, 2003

Mr. Chris Thomas
Oconee County Utility Department
P.O. Box 88
Watkinsville, Georgia 30677

RE: Second Quarterly 2003 Groundwater Monitoring Report
Rocky Branch Road LAS
Oconee County, Georgia

Dear Mr. Thomas:

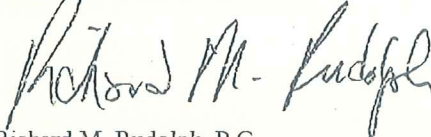
Sailors Engineering Associates, Inc. appreciates the opportunity to submit this report for the above-mentioned facility. The scope of work included the sampling and analysis of five (5) groundwater monitoring wells at the facility.

Prior to purging the wells for sampling, the depth to groundwater in each monitoring well was measured. Well purging was performed using low-flow purging procedures. A peristaltic pump was used to purge the shallow wells until specific conductance, pH, temperature and turbidity stabilize. The turbidity in several wells was above the goal of <5 NTUs. Since all the parameters were stabilized including turbidity, the turbidity of these samples was attributed to formation conditions. Upon parameter stabilization, a groundwater sample was collected from each well for laboratory analysis of Nitrate (NO_3) by EPA Method 300. The groundwater samples are unpreserved and must be immediately packed in ice and analyzed within 48 hours of collection. Attached is a summary table, Table 1, of the groundwater parameters measured, the average pumping rate and the nitrate concentration as Nitrate-Nitrogen and Nitrate (NO_3) for each well. The nitrate concentrations remained essentially unchanged since the last sampling event on June 19, 2003 with the exception of MW-3. The estimated Nitrate-Nitrogen concentration increased to 4.49 mg/l from 1.03 mg/l in June 2003. A Nitrate Concentration Map with current site conditions could not be prepared since a site plan depicting accurate well locations was not provided.

If we can be of further service to you on this project, please contact us at your convenience.

Respectfully submitted,

SAILORS ENGINEERING ASSOCIATES, INC.

A handwritten signature in black ink that reads "Richard M. Rudolph".

Richard M. Rudolph, P.G.
Project Geologist





FAX

TO: John

FROM: Chris

DATE: 10/9

FAX #: 769 2931

PAGES: 3, INCLUDING COVER SHEET

LAS September Well Sampling.

I Emailed the well depths & Pumping flow

TRANSMIT REPORT

2003.10-09 10:19
705 769 3997
OCONEE CO UTILITY DEPT

COM No.	REMOTE STATION	START TIME	DURATION	PAGES	RESULT	USER ID	REMARKS
619	OCONEE CO WWTP	10-09 10:18	01'06	03/03	OK		

7541002591



OCONEE COUNTY UTILITY DEPARTMENT

FAX

TO:

John

FROM:

Chris

DATE:

10/9

FAX #:

769 2931

PAGES:

3

, INCLUDING COVER SHEET

LAS September 10/11 Sampling

TABLE 1
GROUNDWATER PARAMETERS
QUARTERLY SAMPLING
ROCKY BRANCH LAS
OCONEE COUNTY, GEORGIA
SEA JOB #992-183

EPD Designated Well Number	Original Well Number	Date	Average Pumping Rate (l/min)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (mS/cm)	Nitrate-Nitrogen (mg/l)	Nitrate (NO ₃) (mg/l)
UW-1	MW-1U	10/21/02	0.38	125	19.0	4.42	0.058	5.09	5.09
		1/27/03	0.33	10	15.1	4.44	0.074	3.90	3.90
		6/19/03	0.49	302	20.0	5.21	0.044	1.37 ^A	5.47
		9/22/03	0.43	75	19.4	4.37	0.055	1.05 ^A	4.18
MW-3	MW-2I	10/21/02	0.50	3	19.8	5.24	0.024	1.64	1.64
		1/27/03	0.32	10	16.0	5.44	0.043	1.57	1.57
		6/19/03	0.47	0	19.1	5.14	0.320	1.03 ^A	4.11
		9/22/03	0.36	9	19.4	4.17	0.070	4.49 ^A	17.97
DW-13	MW-3D	10/21/02	0.44	63	19.8	5.66	0.019	0.93	0.93
		1/27/03	0.34	143	13.5	6.00	0.030	0.43	0.43
		6/19/03	0.50	76	16.9	5.40	0.027	1.22 ^A	4.88
		9/22/03	0.46	260 ^C	19.2 ^C	5.51 ^C	0.922 ^C	1.59 ^A	6.37
MW-4	MW-4D	10/21/02	0.27	9	20.2	5.45	0.039	0.82	0.82
		1/27/03	0.24	62	13.9	5.18	0.038	0.56	0.56
		6/19/03	0.47	44	18.5	4.94	0.034	0.62 ^A	2.48
		9/22/03	0.48	17	20.4	3.79	0.043	1.73 ^A	6.91
UW-2	MW-5D	10/21/02	0.50	4	17.9	5.39	0.038	3.16	3.16
		1/27/03	0.33	10	15.0	5.16	0.053	3.79	3.79
		6/19/03	0.50	425 ^B	17.8	4.90	0.053	3.94 ^A	15.75
		9/22/03	0.41	0	18.5	3.82	0.054	3.90 ^A	15.60

A = Estimated [NO₃ concentration * 4 = Nitrate-Nitrogen concentration]

B = Turbidity sensor failed

C = Instrument malfunction


SEA

SAILORS ENGINEERING ASSOCIATES, INC.

1675 SPECTRUM DRIVE • LAWRENCEVILLE, GEORGIA 30043 • TEL (770) 962-5922 • FAX 962-7964

December 26, 2003

Mr. Chris Thomas
Oconee County Utility Department
P.O. Box 88
Watkinsville, Georgia 30677

RE: Third Quarterly 2003 Groundwater Monitoring Report
Rocky Branch Road LAS
Oconee County, Georgia

Dear Mr. Thomas:

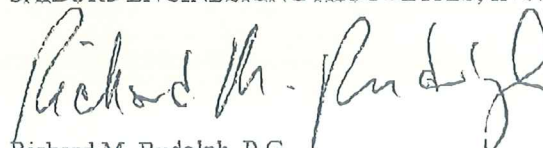
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If we can be of further service to you on this project, please contact us at your convenience.

Respectfully submitted,

SAILORS ENGINEERING ASSOCIATES, INC.



Richard M. Rudolph, P.G.
Project Geologist



TABLE 1
GROUNDWATER PARAMETERS
QUARTERLY SAMPLING
ROCKY BRANCH LAS
OCONEE COUNTY, GEORGIA
SEA JOB #992-183

EPD Designated Well Number	Original Well Number	Date	Average Pumping Rate (l/min)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (mS/cm)	Nitrate-Nitrogen (mg/l)	Nitrate (NO ₃) (mg/l)
UW-1	MW-1U	10/21/02	0.38	125	19.0	4.42	0.058	5.09	20.36 ^D
		1/27/03	0.33	10	15.1	4.44	0.074	3.90	15.60 ^D
		6/19/03	0.49	302	20.0	5.21	0.044	1.37 ^A	5.47
		9/22/03	0.43	75	19.4	4.37	0.055	1.05 ^A	4.18
		12/18/03	0.49	10	15.9	5.25	0.053	1.68 ^A	6.70
MW-3	MW-2I	10/21/02	0.50	3	19.8	5.24	0.024	1.64	6.56 ^D
		1/27/03	0.32	10	16.0	5.44	0.043	1.57	6.28 ^D
		6/19/03	0.47	0	19.1	5.14	0.320	1.03 ^A	4.11
		9/22/03	0.36	9	19.4	4.17	0.070	4.49 ^A	17.97
		12/18/03	0.51	15	17.1	5.22	0.053	1.42 ^A	5.67
DW-13	MW-3D	10/21/02	0.44	63	19.8	5.66	0.019	0.93	3.72 ^D
		1/27/03	0.34	143	13.5	6.00	0.030	0.43	1.72 ^D
		6/19/03	0.50	76	16.9	5.40	0.027	1.22 ^A	4.88
		9/22/03	0.46	260 ^C	19.2 ^C	5.51 ^C	0.922 ^C	1.59 ^A	6.37
		12/18/03	0.50	70	16.1	5.31	0.258	0.72 ^A	2.86
MW-4	MW-4D	10/21/02	0.27	9	20.2	5.45	0.039	0.82	3.28 ^D
		1/27/03	0.24	62	13.9	5.18	0.038	0.56	2.24 ^D
		6/19/03	0.47	44	18.5	4.94	0.034	0.62 ^A	2.46
		9/22/03	0.48	17	20.4	3.79	0.043	1.73 ^A	6.91
		12/18/03	0.52	40	17.2	5.29	0.042	0.45 ^A	1.79
UW-2	MW-5D	10/21/02	0.50	4	17.9	5.39	0.038	3.16	12.64 ^D
		1/27/03	0.33	10	15.0	5.16	0.053	3.79	15.16 ^D
		6/19/03	0.50	425 ^B	17.8	4.90	0.053	3.94 ^A	15.75
		9/22/03	0.41	0	18.5	3.82	0.054	3.90 ^A	15.60
		12/18/03	0.38	4	16.5	4.71	0.060	3.05 ^A	12.21

A = Estimated [NO₃ concentration = 4 = Nitrate-Nitrogen concentration]

B = Turbidity sensor failed

C = Instrument malfunction

D = Estimated [Nitrate-Nitrogen concentration X 4 = NO₃ concentration]

MicroMacro
Analytical Laboratories

Micro-Macro International, Inc
103 Paradise Blvd. Suite 108, Athens GA 30607 USA
Telephone 706 / 548 4557 Fax 706 / 548 4891

Sailors Engineering Associates, Inc.
1675 Spectrum Drive
Lawrenceville, GA 30043

Sample ID#: 032443
Date Received: 12/18/03
Date Completed: 12/22/03

Phone: 770-962-5922
Fax: 770-962-7964

Instrument: Dionex DX500
Method: EPA 300

Nitrate Analysis

Sample ID#	Description	Nitrate ppm
032443-1	MW-1U	6.70
032443-2	MW-2I	5.67
032443-3	MW-3D	2.86
032443-4	MW-4D	1.79
032443-5	MW-5D	12.21

CHAIN OF CUSTODY RECORD

MicroNucris International
 583 Hamilton Blvd., Suite 100
 Ashburn, Virginia 20146
 PH: 703-599-2545 FAX: 703-599-2546

PROJECT NAME	DATE	INITIALS	DESCRIPTION	NO. OF SAMPLES	SAMPLES DESTROYED	DATE DESTROYED	BY	REMARKS
Project Name	12/26/2003	[Signature]	Sample collection and analysis for [Project Name]	5	0			Initials and date of analysis
Project Name	12/26/2003	[Signature]	Sample collection and analysis for [Project Name]	5	0			Initials and date of analysis
Project Name	12/26/2003	[Signature]	Sample collection and analysis for [Project Name]	5	0			Initials and date of analysis
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DATE PREPARED: 12/26/2003
 TIME: 12:38
 PAGE: 05/05

SAILORS ENGINEERING ASSOCIATES, INC.
 1675 SPECTRUM DRIVE
 LAWRENCEVILLE, GEORGIA 30043
 (770) 962-5922; FAX (770) 962-7964

FACSIMILE TRANSMITTAL SHEET

TO:	Chris Thomas	FROM:	Rick Rudolph
COMPANY:	Oconee County Utility Department	DATE:	12/26/03
FAX NUMBER:	706-769-3997	TOTAL NO. OF PAGES INCLUDING COVER:	5
PHONE NUMBER:	706-769-3960	SENDER'S REFERENCE NUMBER:	992-183
RE:	Third Quarterly 2003 Groundwater Monitoring Report Rocky Branch Road LAS Oconee County, GA		

URGENT
 FOR REVIEW
 PLEASE COMMENT
 PLEASE REPLY
 PLEASE RECYCLE

NOTES/COMMENTS:

A hard copy of report and invoice will be mailed. Call if you have any questions

Thanks,

RICK


SEA

SAILORS ENGINEERING ASSOCIATES, INC.

1675 SPECTRUM DRIVE • LAWRENCEVILLE, GEORGIA 30043 • TEL (770) 962-5922 • FAX 962-7964

December 26, 2003

Mr. Chris Thomas
Oconee County Utility Department
P.O. Box 88
Watkinsville, Georgia 30677

RE: Third Quarterly 2003 Groundwater Monitoring Report
Rocky Branch Road LAS
Oconee County, Georgia

Dear Mr. Thomas:

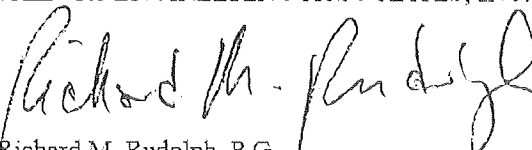
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Mr. Danny Rice, Environmental Specialist
Georgia Environmental Protection Division
Northeast Region Office
745 Gaines School Road
Athens, GA 30605

Rocky Branch LAS
NPDES Permit No. GA02176
September 2003 Discharge Monitoring Report

Dear Mr. Rice,

Please find the enclosed monthly report for the Rocky Branch Land Application Site for the month of September 2003.

The monitoring wells were chlorinated and re-tested for total coliform bacteria, per your recommendation. All wells showed negative so a test for fecal coliform was not conducted. The wells will be tested again this quarter to see if there has been any change.

If you have any questions concerning the Rocky Branch LAS or the monthly report, please contact me.

Sincerely yours,



John Hatcher
Oconee County Utility Department
JJ&G Services

Cc Melvin Davis, Oconee County BOC
Jordan, Jones, and Goulding

Oconee County Utility Dept
 Rocky Branch LAS

Mr. John C. Hatcher

Class 1 - WW1-014377

Permit #GA02-176

Year 2003

Pond														AVG		
Type	Freq	Limit	Parameter	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
E/CONT	Daily	0.2	Flow (MA)	0	0	0.029	0.056	0.092	0.121	0.171	0.122	0.185				0.0862
E/GRAB	1/qtr		Nit-N (Max)	2		0.45			0.51			0.4				0.8
E/GRAB	1/wk	50	BOD (MA)	17	33	20	37	40	32	40	31	22				30
E/GRAB	1/wk	90	TSS (MA)	41	40	56	37	38	35	29	21	37				37
E/GRAB	2/wk		pH (Min)	8.8	7.7	8.4	7.1	7.4	8.7	8	8.5	8.1				
E/GRAB	2/wk		pH (Max)	10.1	9.5	9.5	8.2	9.6	9.8	10.4	9.6	9.5				
I/CONT	Daily		Flow (MA)	0.0067	0.0070	0.0228	0.1393	0.1082	0.097	0.0998	0.1118	0.1208				0.0792
I/GRAB	1/wk		BOD (MA)	340	235	748	894	449	613	405	395	429				501
I/GRAB	1/wk		TSS (MA)	303	41	122	152	117	65	47	129	206				131

Soil Monitoring		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
1/YR	Report													
	pH(Min)													
	pH(Max)													

Rocky Branch LAS

Ground Water Monitoring		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
UGW1	1/MO Report	19.1	19.1	18.3	14.3	13.5	12.4	10.2	10.6	11.5				
	1/QTR Report	4.4					5.2			4.37				
	1/QTR Report	3.9					5.47			4.18				
	1/QTR Report	0.074					0.044			0.055				
	1/6MO Report						NEG							
UGW2	1/MO Report	13.9	13.8	13	12	11.1	10.7	10.4	10.5	11.2				
	1/QTR Report	5.16					15.75			3.82				
	1/QTR Report	3.79					3.94			15.6				
	1/QTR Report	0.053					0.053			0.054				
	1/6MO Report						NEG							
UGW8R	1/MO Report	22	22	22.1	17.4	17.1	16	14.9	14.9	14.9				
	1/QTR Report						7.31							
	1/QTR Report						1.87							
	1/QTR Report						0.194							
	1/6MO Report						POS							
UGW8S	1/MO Report	22.4	22.1	22	17.7	17.3	16.2	14.5	14.8	15.2				
	1/QTR Report						4.42							
	1/QTR Report						21.7							
	1/QTR Report						0.073							
	1/6MO Report						NEG							
UGW9R	1/MO Report	27.6	27.6	27.6	23.2	23	22.2	21	21	20.9				
	1/QTR Report						4.43							
	1/QTR Report						36.15							
	1/QTR Report						0.1							
	1/6MO Report						POS							
UGW9S	1/MO Report	27	26.8	26.4	23.2	23	22.1	21.3	21.3	21				
	1/QTR Report						6.93							
	1/QTR Report						19.47							
	1/QTR Report						0.12							
	1/6MO Report						NEG							

DGW4R	1/MO	Report	Depth	4.2	4.1	4.1	6.3	5.7	5.2	7.1	8.2	9.3		
	1/QTR	Report	PH						4.46					
	1/QTR	Report	NO3-N						1					
	1/QTR	Report	Conductivity						0.031					
	1/6MO	Report	FC						NEG					
DGW4S	1/MO	Report	Depth	10.1	10.1	9.4	3.4	3	3.6	3.6	3.2	3.2		
	1/QTR	Report	PH						7.25					
	1/QTR	Report	NO3-N						1					
	1/QTR	Report	Conductivity						0.297					
	1/6MO	Report	FC						POS					
DGW5R	1/MO	Report	Depth	0	0	0	0	0	0	0	0	0		
	1/QTR	Report	PH											
	1/QTR	Report	NO3-N											
	1/QTR	Report	Conductivity											
	1/6MO	Report	FC											
DGW5S	1/MO	Report	Depth	5.3	5	5	5.3	4.4	5	4.8	5.4	5.6		
	1/QTR	Report	PH						4.69					
	1/QTR	Report	NO3-N						1.81					
	1/QTR	Report	Conductivity						0.067					
	1/6MO	Report	FC						NEG					
DGW6	1/MO	Report	Depth	8.8	8.8	8.8	8.4	7.9	8.7	8.7	8.8	9.1		
	1/QTR	Report	PH						7.86					
	1/QTR	Report	NO3-N						1					
	1/QTR	Report	Conductivity						0.193					
	1/6MO	Report	FC						POS					
DGW7S	1/MO	Report	Depth	8.5	8.5	8	8.6	7	8.3	8.3	8.3	8.8		
	1/QTR	Report	PH						4.5					
	1/QTR	Report	NO3-N						1					
	1/QTR	Report	Conductivity						0.023					
	1/6MO	Report	FC						NEG					

Rocky Branch LAS

Permit #GA02-176

Surface Water Monitoring		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
US	1/QTR Report BOD				0			2						1
	1/QTR Report TSS				1			6						16
	1/QTR Report DO			7.9			6.7							6.5
	1/QTR Report PH			5.9			6.1							6
	1/QTR Report FC			20			BDL20			BDL20				
	1/QTR Report NO3-N			2.3			1.5			0.9				
DS	1/QTR Report BOD			0			2			1				
	1/QTR Report TSS			1			3			1				
	1/QTR Report DO			8.9			6.6			6.0				
	1/QTR Report PH			6			6.2			6.0				
	1/QTR Report FC			20			BDL20			BDL20				
	1/QTR Report NO3-N			0.25			2			0.2				
Farm Pond	1/QTR Report BOD			0			3			4				
	1/QTR Report TSS			1			1			56				
	1/QTR Report DO			9.2			4.2			4.6				
	1/QTR Report PH			6			6.6			6.2				
	1/QTR Report FC			20			BDL20			BDL20				
	1/QTR Report NO3-N			0.4			0.37			0.2				

JUL-21-1999 13:29 FROM

TO 87067692929 P.06

SEA

SAILORS ENGINEERING ASSOCIATES, INC.

1675 SPECTRUM DRIVE • LAWRENCEVILLE, GEORGIA 30043 • TEL. (770) 962-5922 • FAX 962-7962

January 5, 1999

Mr. Rick Raymond
Rick Raymond & Associates, P. C.
1741 Hog Mountain Road
Watkinsville, GA 30677

RE: Proposed Well Location Plan
Rocky Branch Road WPCP
Oconee County, GA

Dear Mr. Raymond:

Enclosed is a copy of the proposed well locations as requested. I have sent copies to Mr. Boswell and Mr. Guentert for their files as well.

If you have any questions or need additional information, call us at your convenience. We look forward to the opportunity of working with you on this project and others in the future.

Respectfully submitted,

SAILORS ENGINEERING ASSOCIATES, INC.



Michael Haller, P.G.

Cc: Curtis Boswell, GAEPD Water Resources Division
Cc: Jim Guentert, Georgia Geologic Survey



JUL-21-1999 13:29 FROM

TO

87067692929 P.05

LABORATORY ANALYSES

Groundwater:

Nitrogen, Nitrate-Nitrite (SM 4110/EPA 353.3)
(10 samples @ \$25.00/ sample) \$250.00

LABORATORY ANALYSIS SUBTOTAL **\$250.00**

PROPOSED TOTAL ANNUAL COSTS **\$6,442.00**

If lysimeter sampling is discontinued after one year the annual cost would be reduced by approximately \$1,000.00.

If you find this proposal acceptable, please sign in the acceptance blank provided and return a copy at your convenience. We look forward to the opportunity of working with you on this project and others in the future.

Respectfully submitted,

SAILORS ENGINEERING ASSOCIATES, INC.



Michael J. Haller, P.G.
Manager, Environmental Engineering

Accepted by: _____ Date: _____
Authorized Representative

SEA

JUL-21-1995 13:28 FROM

TO

87067692929 P.04

Field Geologists – field supervision (40.0 hours @ \$60.00/hour.).....	\$2,400.00
Environmental Technician – Lysimeter installation (16 man hours @ \$45.00/man hour)	\$720.00
Mileage (300 miles @ \$0.32/mile.).....	\$192.00
LABOR SUBTOTAL	\$4,062.00
TOTAL PROPOSED	\$15,502.00

SITE MONITORING PER SAMPLING EVENT – GGS
QUARTERLY FOR ONE YEAR, ANNUALLY THEREAFTER

EQUIPMENT

Monitoring well, lysimeter and surface water sampling

Disposable bailers (12 bailers @ \$10.00 each)	\$120.00
Lysimeters sampling and re-evacuating (4 @ \$ 50.00 each).....	\$200.00
Monitoring well purge pump and materials (2 day @ \$500.00/day).....	\$1,000.00
6000W Generator (2 day @ \$85.00/day).....	\$170.00

EQUIPMENT SUBTOTAL..... **\$1,490.00**

LABOR

Project Geologist – project coordination and report preparation (15.0 hours @ \$75.00/hour.).....	\$1,125.00
Technicians - sampling (40.0 hours @ \$45.00/hour.).....	\$1,800.00
Mileage (600 miles @ \$0.32/mile.).....	\$192.00

LABOR SUBTOTAL..... **\$3,117.00**

In order to determine the levels of nitrates in the vadose zone we propose to install 3 lysimeters immediately down gradient of the application area within 10 feet of the wetted zone and one lysimeter in the heaviest application area. The depth of the collection will be approximately 5 to 10 feet below the surface. Samples should be collected quarterly for one year and analyzed for nitrate. At the end of one year if it is determined that the nitrate concentrations detected do not pose a threat to the ground water then monitoring the lysimeters will be discontinued.

The cost of each item will be in accordance with the work performed. We anticipate the cost to be as follows:

OVERBURDEN AND BEDROCK MONITORING WELL AND LYSIMETER INSTALLATION

EQUIPMENT

Monitoring well installation

Mobilization of drilling equipment	\$1,000.00
Installation of 4 overburden groundwater monitoring wells (2-inch I.D. PVC) 20-foot average depth (80.0 l.f. @ \$32.50/l.f.)	\$2,600.00
Installation of 2 bedrock groundwater monitoring wells (2-inch I.D. PVC) 45-foot average depth (90.0 l.f. @ \$36.50/l.f.)	\$3,285.00
Setup -- (2 @ \$150/hole)	\$300.00
Monitoring well purge pump, development pumps and materials (3 days @ \$500.00/day)	\$1,500.00
6000W Generators (3 days @ \$85.00/day)	\$255.00
Ground water parameter meter (3 days @ \$100/day)	\$300.00
Lysimeter including head assembly, silica flour, casing and tubing (4 units @ \$550.00 each)	\$2,200.00

EQUIPMENT SUBTOTAL \$11,440.00

LABOR

Project Geologist -- project coordination (10.0 hours @ \$75.00/hour.)	\$750.00
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JUL-21-1995 13:27 FROM

TO 87067E92929 P.02

**SEA****SAILORS ENGINEERING ASSOCIATES, INC.**

1675 SPECTRUM DRIVE • LAWRENCEVILLE, GEORGIA 30043 • TEL (770) 962-5922 • FAX 962-7964

COPY

July 9, 1999

Mr. Rick Raymond
Rick Raymond & Associates, P. C.
1741 Hog Mountain Road
Watkinsville, GA 30677

RE: Groundwater Monitoring Well Installation
Rocky Branch Road WPCP
Oconee County, GA

Dear Mr. Raymond:

Sailors Engineering Associates, Inc. appreciates the opportunity to submit this proposal for the above-mentioned facility. The scope of work includes the installation, completion and development of four saprolite and two bedrock groundwater monitoring wells and four lysimeters. The geologic boring logs using the USCS and the Munsell Soil Color Chart, well completion diagrams, well material volumes used, certification of filter pack grain size, water levels readings and a potentiometric surface map shall be included in the accompanying monitoring well installation report. A Professional Geologist with Georgia registration will supervise well installations and report preparation.

We propose to install four saprolite groundwater monitoring wells and two bedrock groundwater monitoring wells in accordance with the GA DNR, EPD, *Manual for Groundwater Monitoring* to the estimated completion depths of 20 feet and 45 feet, respectively. The annulus of the wells above the filter pack and bentonite seal will be cast Portland cement and bentonite clay slurry mixed and placed as specified. The saprolite groundwater monitoring wells will be installed using 4.25" I.D. hollow-stemmed augers collecting split-spoon standard penetration test samples taken on 3-foot centers. The field geologist will keep a separate logbook that will include start and stop times, difficulties in drilling, downtime, geologic information and well material volumes. In the event that no groundwater is encountered, the owner shall be contacted to determine whether or not to offset the location or advance the borehole to groundwater. We understand that the site has limited access and we must provide our own potable water supply.

The depth to groundwater will be measured at the time of drilling and retaken after 24 hours. Well development shall be performed first with a surge block/purge pump followed by a monitoring well development pump until specific conductance/redox potential, pH, temperature and turbidity stabilize (turbidity ≤ 5 NTUs).