



Board of County Commissioners

DEPARTMENT OF PUBLIC WORKS SOLID WASTE MANAGEMENT DIVISION

March 29, 2012

Steven G. Morgan
Solid Waste Section Southwest District
Florida Department of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637

Dept. Of Environmental Protection

APR 02 2012

Southwest District

Subject: Citrus County Central Landfill
Permit Condition C.8.f – Leachate Leakage Action Rates

Dear Mr. Morgan:

On Monday March 12, 2012 Citrus County Solid Waste made verbal notification of an apparent exceedance of our permitted Leachate Leakage Action Rate in the Phase 3 Secondary Leachate Detection System (LDS) as specified in permit condition C.8.f. This letter shall serve as a written follow up to that notification and present an action plan as required by the above referenced permit condition.

When we began accepting waste in Phase 3 the natural assumption is that the leachate collection and removal systems were working and functioning as designed. Citrus County experienced a series of mechanical/electrical issues related to the leachate collection system which, when they occurred individually were considered as maintenance items but when combined together resulted in the phone notification of March 12th. For example, when Phase 3 went on line it was assumed that flow meters and water level transducers were functioning properly, however inconsistent flows readings indicated that the flow meters were not working consistently. Flows were calculated based upon hours of operation and published flow rates. Pumps were being controlled by the level sensors and operated in manual mode. On December 23rd, the secondary level transducer stopped working. Citrus County brought a team in from the manufacturer and Utilities Department, pulled the secondary pump and transducer and replaced it on December 28, 2011. On February 17, 2012, the primary pump failed in sump #1. On February 23rd we brought in a team, as above and replaced the pump, and installed new flow meters for both the primary and secondary pumps (Attachment 1). Our contractor, Sligo systems also upgraded and integrated the new meters into the control panel software. At that time, Sligo also reset all control settings for pump controls.

Following these maintenance tasks, Citrus County recorded secondary flows apparently exceeding the allowable leachate rates as specified in the permit. At that time I instructed Utilities to re-check all mechanical/electrical components to make sure they were working properly. We are confident that the system is now functioning and recording water levels and flows properly.

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Mr. Steve Morgan, FDEP
March 29, 2012
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This chain of events could help explain why the flows were so high from February 23rd through March 3rd, necessitating our notification. The initial water level controls may not have been set properly. Consequently, the Phase 3 secondary was not adequately pumped down prior to accepting waste. The now fully functional pumping system may have just been catching up by removing water that we assumed had been removed initially, thereby causing volumes pumped to exceed the ALR. Since March 3, 2012, the secondary pump has been running just one time each day for a few minutes and volumes removed are as expected (Attachment 2) and do not exceed the ALR.

Additionally, this series of incidents caused Citrus County to question the ALR for Phase 3 listed in the permit. Upon discovery, Citrus County contacted FDEP for clarification of the Federal Register citation and whether the ALR should be based on a weekly average as cited in the Federal Register. We addressed this question along with a permit modification request in a letter prepared by SCS Engineers dated March 21, 2012.

Based upon these events leading up to the verbal notification, we believed that it was too soon to determine if there is or is not an issue with the Phase 3 leak detection system. Having evaluated the conditions noted above we now believe that the system is functioning within normal conditions; therefore, the County is proposing the following action plan:

1. Continue monitoring daily flow rates in the Phase 3 secondary leak detection system.
2. Continue working with FDEP to modify the permit to adjust the ALR using the Giroud, et al. [1997] calculations for the biplanar geocomposites' as outlined in the March 21, 2012 request and the Federal Register direction to base the flows on a weekly average for the active landfill.

I trust that this written notification is acceptable to FDEP. If you have any questions, please do not hesitate to contact me or Dominique Bramlett, at SCS Engineers.

Sincerely,



T. Casey Stephens
Director, Solid Waste

TCS

Cc: Susan Pelz, P.E., Program Manager – Solid Waste, FDEP
Ken Frink, Deputy Administrator, Citrus County
Larry Brock, Deputy Director, Citrus County Public Works
Ed Hilton, Vice President, SCS Engineers
Dominique Bramlett, Project Manager, SCS Engineers

Attachment 1

Specifications for flow meters

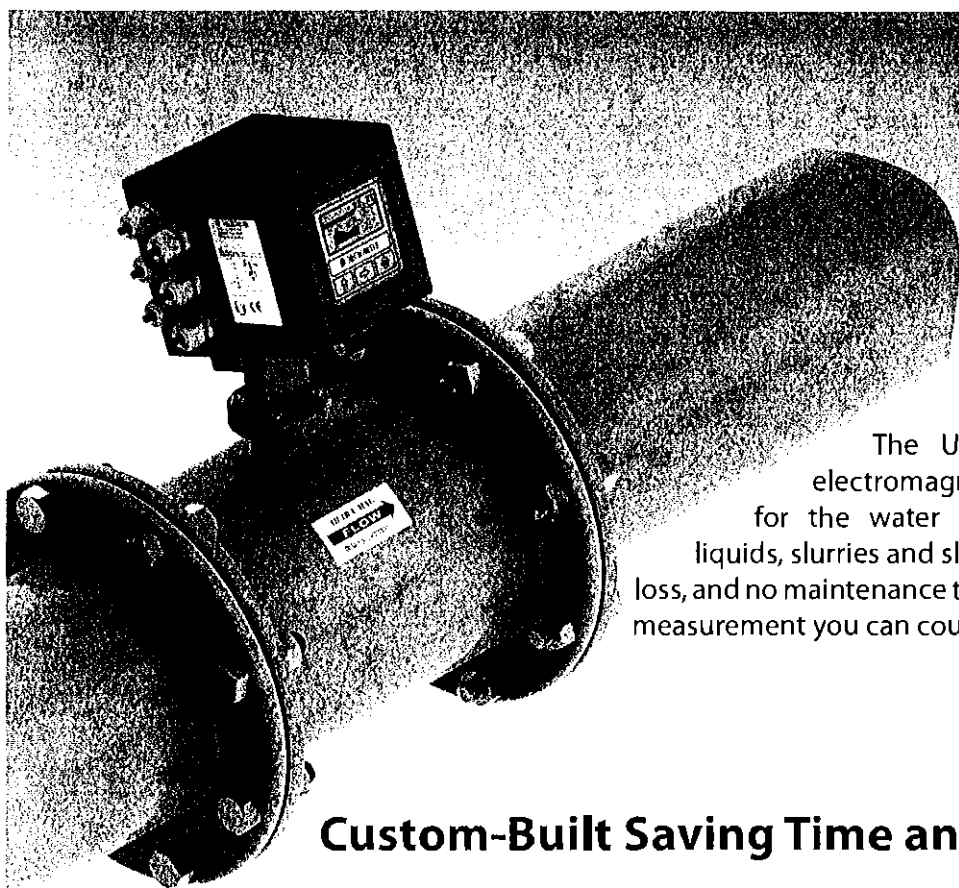


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Applications

Industrial

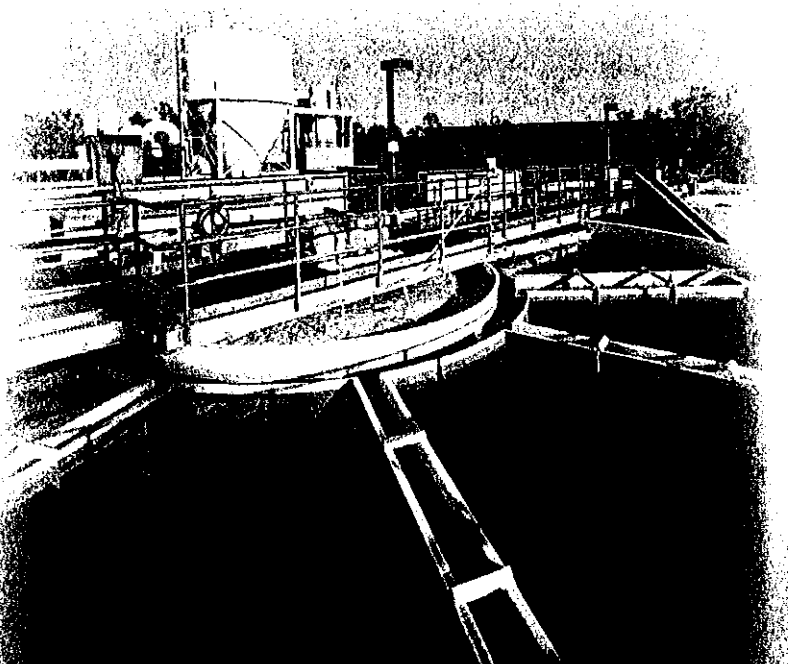
Raw Water
Chilled Water
Cooling Water
Process Control
Effluent wastewater

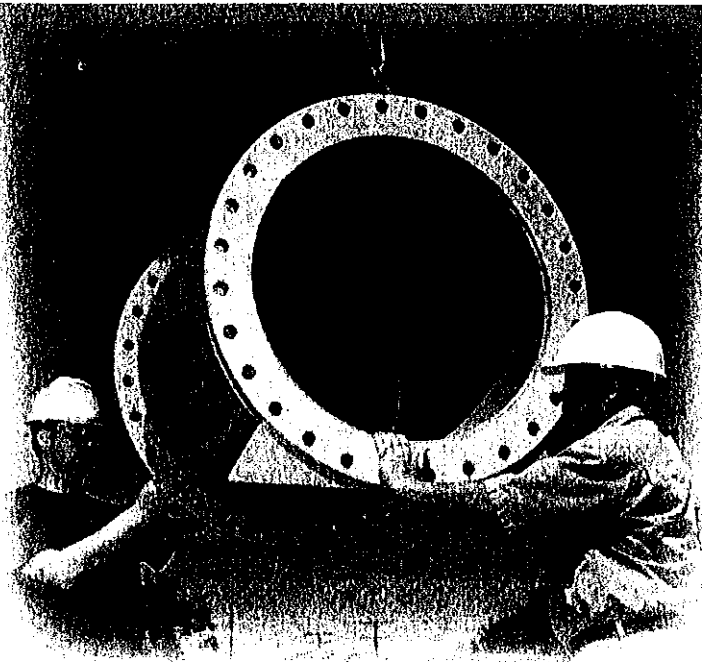
Clean Water

Well Water
Potable Water
Pump Stations
Rate-of-Flow Control
Raw Water Transmission

Wastewater

Influent
Effluent
Reclaimed
Lift Stations
Waste Activated Sludge
Return Activated Sludge





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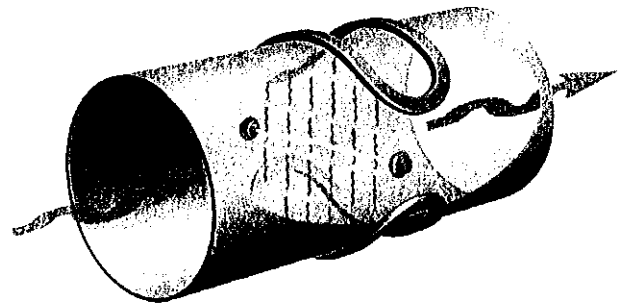
The fusion-bonded epoxy Ultraliner™ has been tested and certified by NSF. This unique liner is applied by using a fluidized bed method resulting in superior resistance against abrasion and corrosion for water and wastewater utilization. The liner provides a highly protective coating with non-conductive properties for outstanding electrical insulation.

Unlike other liners, the Ultraliner creates a seamless continuous barrier over the meter that will not delaminate, separate or collapse.

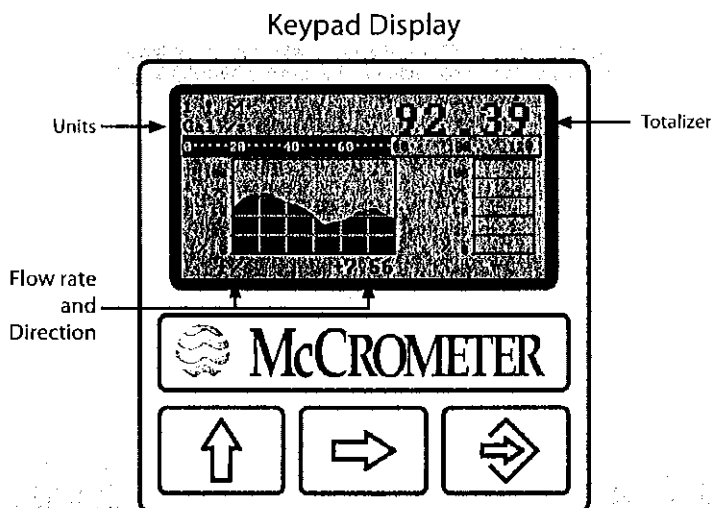
Performance Advantages

- No obstruction to the flow
- No moving parts to wear or break
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- Debris or solids will not clog the meter
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- Empty pipe detection
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- Wide Flow Range

Principles of Operation



The Ultra Mag is a non-invasive flow measurement device. It uses two compact, high density magnetic coils to generate an electromagnetic field inside the pipe section. As conductive liquid flows through the pipe, a voltage is created, which is measured by electrodes inserted through the flowmeter lining into the flow. The voltage is converted to a flow rate reading by the Ultra Mag's signal converter and shown on the digital display.



COMMITMENT TO INTEGRITY



For over 55 years, McCrometer has demonstrated an unyielding commitment to integrity which is reflected in our stringent flowmeter calibration processes. Each flowmeter is individually wet calibrated in one of our two world-class NIST traceable calibration facilities and delivered with a Certificate of Calibration.

NIST
National Institute of
Standards and Technology



Our Hemet, California factory boasts a robust Calibration Test Lab that enables production of the most accurate and precise flow instrumentation. The test facility utilizes three gravimetric systems and two volumetric systems providing accuracy and calibration tests of flowmeters from 1/2 to 20-inch diameter, with flow rates up to 4,000 gpm.



Our large volume test facility is located in Porterville, California. This facility is one of the world's largest volumetric test facilities owned by a meter manufacturer, and it offers accuracy and calibration tests of flowmeters from 3 to 72-inch diameter, with flow rates up to 60,000 gpm.

For specifications visit: www.mccrometer.com/umspecs

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Lit Number 30107-01 Rev. 3.1/03-12

Specifications | Ultra Mag®

The Ultra Mag is a non-intrusive electromagnetic flow meter with unique NSF-approved UltraLiner technology.

Specifications and design features

- **Accuracy:** +/-0.5% of actual flow
- **Repeatability:** +/-0.05%
- **Rangeability:** from 0.2 FPS to 49 FPS
- Non-intrusive measurement
- NSF-approved, fusion-bonded epoxy liner: the UltraLiner
- Signal converter (can be meter mounted or remote mounted up to 200 ft. away)
- Pre-programmed and pre-calibrated to user's specific applications
- Meter is wet calibrated in NIST traceable calibration facility
- Test mode and self-diagnostics
- Forward and reverse flow outputs and totalization
- Line sizes from 2" to 48"



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parameters | Ultra Mag®

The following flow and installation parameters will help you decide whether the Ultra Mag is suited to your specific flow measurement application. Alternatively, download and send our Free Flow Evaluation Form and a McCrometer sales representative will assist you in choosing the best flow meter for your needs.

Flow Parameters

Types of flow measured	Water, wastewater and slurries
Flow range	0.2 - 49 FPS
Operating temperature	14 to 170°F / -10 to +77°C
Operating pressure	150 psi, optional 300 psi
Fluid conductivity	Not less than 5µS/cm
Headloss	None

Installation Parameters

Pipeline sizes	2" - 48"
Process connection	Meter-carbon steel flanges to mate with AWWA flanges with optional ANSI, DIN, JIS, smooth, and grooved ends available
Converter Mounting	Remote mount up to 200 ft. with optional meter mount. For longer lengths, a preamp is required.
Sensor Mounting	Directly into pipeline at any attitude (pipeline must be full for accurate operation)
Upstream / downstream pipe runs	5 dia upstream; 2 dia downstream
Meter output	Choice of analog and programmable pulse/frequency
Power consumption	Less than 20VA
Environmental protection rating	IP67
Isolation	To 30V DC opto-isolated between analog, 500 VDC pulse / alarm and earth / ground

Attachment 2

Phase 3 Primary/Secondary Volumes

Phase 3 Primary and Secondary Leachate Flow Data

			PHASE 3					
DATE	DAY	RAIN IN INCHES	80 (P-1) LS METER	POC	Primary 80 (P-1) FLOW GAL	80 (P-2) LS METER	POC	Secondary 80 (P-2) FLOW GAL
02/01/12	Wed	0.00	852527	A	1332	39159	A	0
02/02/12	Thu	0.00	853859	A	1755	39159	A	0
02/03/12	Fri	0.00	855614	A	877	39159	A	0
02/04/12	Sat	0.00	856491	A	1339	39159	A	0
02/05/12	Sun	0.00	857830	A	1298	39159	A	0
02/06/12	Mon	0.40	859128	A	5708	39159	A	0
02/07/12	Tue	0.00	864836	A	1693	39159	A	0
02/08/12	Wed	0.00	866529	A	1715	39159	A	0
02/09/12	Thu	0.00	868244	A	838	39159	A	0
02/10/12	Fri	0.50	869082	A	5259	39159	A	0
02/11/12	Sat	0.00	874341	A	1762	39159	A	0
02/12/12	Sun	0.00	876103	A	1287	39159	A	0
02/13/12	Mon	0.00	877390	A	1416	39159	A	0
02/14/12	Tue	0.00	878806	A	1200	39159	A	0
02/15/12	Wed	0.00	880006	A	1266	39159	A	129
02/16/12	Thu	0.30	881272	A	675	39288	A	0
02/17/12	Fri	0.00	881947	M	0	39288	A	0
02/18/12	Sat	0.00	881947	M	0	39288	A	78
02/19/12	Sun	0.00	881947	M	0	39366	A	89
02/20/12	Mon	0.00	881947	M	619	39455	A	128
02/21/12	Tue	0.00	882566	M	0	39583	A	0
02/22/12	Wed	2.40	882566	M	0	39583	A	0
02/23/12	Thu	0.00	882566	A	23000	39583	A	165
02/24/12	Fri	0.00	0	A	30444	0	A	426
02/25/12	Sat	0.30	30444	A	8469	426	A	284
02/26/12	Sun	0.70	38913	A	18245	710	A	262
02/27/12	Mon	0.30	57158	A	7890	972	A	120
02/28/12	Tue	0.00	65048	A	7633	1092	A	306
02/29/12	Wed	0.00	72681	A	6159	1398	A	288
TOTAL		4.90			131879			2275

Phase 3 Primary and Secondary Leachate Flow Data

PHASE 3								
DATE	DAY	RAIN IN INCHES	80 (P-1) LS METER	POC	Primary 80 (P-1) FLOW GAL	80 (P-2) LS METER	POC	Secondary 80 (P-2) FLOW GAL
03/01/12	Thu	0.00	11294144	A	3573	4039931	A	338
03/02/12	Fri	0.00	11297717	A	3990	4040269	A	135
03/03/12	Sat	0.17	11301707	A	4101	4040404	A	204
03/04/12	Sun	0.00	11305808	A	3568	4040608	A	45
03/05/12	Mon	0.00	11309376	A	2212	4040653	A	80
03/06/12	Tue	0.00	11311588	A	2596	4040733	A	70
03/07/12	Wed	0.00	11314184	A	1597	4040803	A	88
03/08/12	Thu	0.01	11315781	A	1834	4040891	A	116
03/09/12	Fri	0.02	11317615	A	2117	4041007	A	95
03/10/12	Sat	0.00	11319732	A	1475	4041102	A	87
03/11/12	Sun	0.30	11321207	A	9280	4041189	A	48
03/12/12	Mon	0.00	11330487	A	2903	4041237	A	95
03/13/12	Tue	0.00	11333390	A	2223	4041332	A	92
03/14/12	Wed	0.20	11335613	A	1761	4041424	A	88
03/15/12	Thu	0.00	11337374	A	2166	4041512	A	84
03/16/12	Fri	0.00	11339540	A	2103	4041596	A	83
03/17/12	Sat	0.00	11341643	A	1294	4041679	A	115
03/18/12	Sun	0.00	11342937	A	1606	4041794	A	69
03/19/12	Mon	0.00	11344543	A	1559	4041863	A	56
03/20/12	Tue	0.00	11346102	A	1596	4041919	A	78
03/21/12	Wed	0.00	11347698	A	1559	4041997	A	89
03/22/12	Thu	0.00	11349257	A	1214	4042086	A	72
03/23/12	Fri	0.00	11350471	A	1632	4042158	A	77
03/24/12	Sat	0.60	11352103	A	5817	4042235	A	66
03/25/12	Sun	0.00	11357920	A	2813	4042301	A	68
03/26/12	Mon	0.00	11360733	A	1784	4042369	A	73
03/27/12	Tue	0.00	11362517	A	1301	4042442	A	75
03/28/12	Wed	0.00	11363818	A	0	4042517	A	0
03/29/12	Thu	0.00		A	0		A	0
03/30/12	Fri	0.00		A	0		A	0
03/31/12	Sat	0.00		A	0		A	0
TOTAL		1.30			69674			2586