

Date: July 31<sup>st</sup>, 2019

Prepared by: **GCME, Inc.**

TO: RS&H, Inc.  
3125 W Commercial Boulevard, Suite 130  
Fort Lauderdale, FL 33309

Attention: Mr. Paul Heeg, P.E.  
Senior Transportation Engineer

SUBJECT: **Geotechnical Report – Groundwater Monitoring Data**  
PD&E Study – SW 10<sup>th</sup> Street / SR-869  
From Powerline Road to West of Military Trail  
Broward County, Florida  
FPID No.: 439891-1-22-02  
GCME Project No.: 2000-01-17003

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Dear Mr. Heeg,

**GCME, Inc.** has completed the groundwater level monitoring along the SW 10<sup>th</sup> Street / SR-869 between Powerline Road and Military Trail in reference to the scope of services detailed in Optional Services (OPT) #2 dated November 29, 2017.

This entire project corridor runs along SW 10<sup>th</sup> Street / SR-869 from west of Powerline Road to west of Military Trail, a distance of about 2.0 miles. In order to evaluate the groundwater level conditions along the roadway alignment, the District has installed two (2) groundwater monitoring wells. The groundwater wells are numbered MW-1 and MW-2. The approximate locations of the groundwater wells are presented on Plates 1 and 2, as provided by the District.

GCME, Inc. was authorized to measure and record the groundwater levels at each of the wells in the field frequently for approximately one (1) year period. The groundwater elevations were intermittently provided to your office during the monitoring period.

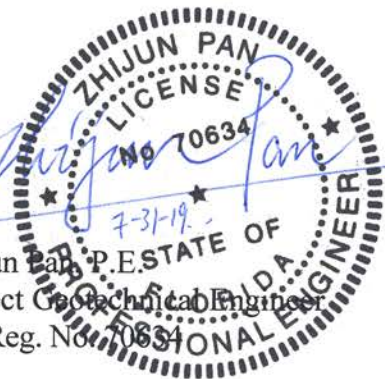
The groundwater elevations recorded in MW-1 and MW-2 are presented in Table – 1 and Table – 2, respectively. The groundwater elevations and recorded dates are also graphically presented following the tables. The groundwater elevations varied from +6.84 to +10.59 feet (NAVD) and +5.91 to +9.41 feet (NAVD) in MW-1 and MW-2, respectively.

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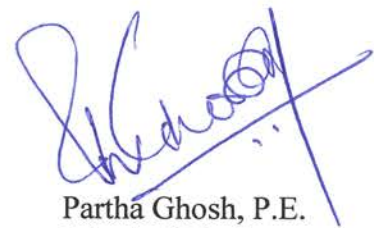
We are pleased to be of continued service to RS&H and the Florida Department of Transportation (FDOT). If you have any questions or comments regarding the contents of the following report, please call.

Very truly yours,

GCME, INC.



Zhijun Pan, P.E.  
Project Geotechnical Engineer  
FL. Reg. No. 70634



Partha Ghosh, P.E.  
Principal Engineer  
FL Registration No. 51377

Appendices:

Plate 1 and 2	Approximate Groundwater Monitoring Well Plan
Table – 1	MW-1 Groundwater Elevation Recorded
Table – 2	MW-2 Groundwater Elevation Recorded
Graph	MW-1 and MW-2 Groundwater Elevations





Approx. 65 ft from edge of pavement

Approx. 480 ft from edge of pavement

MW-1

TOP OF PVC PIPE = 12.42  
GROUND NEXT TO PVC PIPE = 10.27

Groundwater Monitoring Well  
Installed by FDOT  
MW-1  
Latitude: 26.30394°  
Longitude: -80.14279°

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:  
PARTHA GHOSH, P.E. LICENSE NO. 51377  
GCME, INC.  
1730 W. 10TH STREET  
RIVIERA BEACH, FLORIDA 33404  
CERTIFICATE OF AUTHORIZATION NO. 9076

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-869	BROWARD	439891-1-22-02

APPROXIMATE GROUNDWATER  
MONITORING WELL PLAN  
PLATE-1

SHEET  
NO.





Groundwater Monitoring Well  
 Installed by FDOT  
 MW-2  
 Latitude: 26.30415°  
 Longitude: -80.13287°

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:  
 PARTHA GHOSH, P.E. LICENSE NO. 51377  
 GCME, INC.  
 1730 W. 10TH STREET  
 RIVIERA BEACH, FLORIDA 33404  
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR-869	BROWARD	439891-1-22-02

APPROXIMATE GROUNDWATER  
 MONITORING WELL PLAN  
 PLATE-2

SHEET  
 NO.



**TABLE - 1****Project Name: PD&E Study - SW 10th Street From Powerline Road to Military Trail****FPID #: 439891-1-22-01****GCME Project #: 2000-01-17003**

<b>ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Top of PVC Pipe (Elevation)</b>	<b>Date</b>	<b>GWT (Elevation)</b>	<b>Comment (Wether, etc.)</b>
MW-1	26.30394°	-80.14279°	12.42	11/30/2017	9.50	Sunny
MW-1	26.30394°	-80.14279°	12.42	12/29/2017	8.17	Sunny
MW-1	26.30394°	-80.14279°	12.42	2/13/2018	7.75	Sunny
MW-1	26.30394°	-80.14279°	12.42	2/28/2018	7.25	Sunny
MW-1	26.30394°	-80.14279°	12.42	3/9/2018	7.25	Sunny
MW-1	26.30394°	-80.14279°	12.42	3/16/2018	7.50	Sunny
MW-1	26.30394°	-80.14279°	12.42	3/22/2018	7.25	Sunny
MW-1	26.30394°	-80.14279°	12.42	3/30/2018	7.09	Sunny
MW-1	26.30394°	-80.14279°	12.42	4/6/2018	7.09	Sunny
MW-1	26.30394°	-80.14279°	12.42	4/13/2018	7.59	Sunny
MW-1	26.30394°	-80.14279°	12.42	4/20/2018	7.50	Sunny
MW-1	26.30394°	-80.14279°	12.42	4/27/2018	7.00	Sunny
MW-1	26.30394°	-80.14279°	12.42	5/3/2018	7.84	Sunny
MW-1	26.30394°	-80.14279°	12.42	5/14/2018	8.92	Rain
MW-1	26.30394°	-80.14279°	12.42	5/25/2018	10.09	Heavy Rain
MW-1	26.30394°	-80.14279°	12.42	6/1/2018	10.34	Cloudy
MW-1	26.30394°	-80.14279°	12.42	6/8/2018	10.59	Flooded
MW-1	26.30394°	-80.14279°	12.42	6/15/2018	8.84	Sunny
MW-1	26.30394°	-80.14279°	12.42	6/22/2018	8.25	Sunny
MW-1	26.30394°	-80.14279°	12.42	6/29/2018	9.09	Sunny
MW-1	26.30394°	-80.14279°	12.42	7/6/2018	9.84	Overcast
MW-1	26.30394°	-80.14279°	12.42	7/13/2018	9.42	Sunny
MW-1	26.30394°	-80.14279°	12.42	7/20/2018	6.84	Sunny
MW-1	26.30394°	-80.14279°	12.42	7/27/2018	7.42	Rain
MW-1	26.30394°	-80.14279°	12.42	8/3/2018	7.59	Sunny
MW-1	26.30394°	-80.14279°	12.42	8/8/2018	7.42	Sunny
MW-1	26.30394°	-80.14279°	12.42	8/17/2018	7.59	Sunny
MW-1	26.30394°	-80.14279°	12.42	8/24/2018	7.34	Overcast
MW-1	26.30394°	-80.14279°	12.42	9/17/2018	8.59	Sunny
MW-1	26.30394°	-80.14279°	12.42	10/1/2018	7.42	Sunny
MW-1	26.30394°	-80.14279°	12.42	10/31/2018	7.59	Sunny

**TABLE - 2**

**Project Name: PD&E Study - SW 10th Street From Powerline Road to Military Trail**

**FPID #: 439891-1-22-01**

**GCME Project #: 2000-01-17003**

ID	Latitude	Longitude	Top of PVC Pipe (Elevation)	GWT_Depth (From Top of Pipe to Groundwater)	Date	GWT (Elevation)	Comment (Wether, etc.)
MW-2	26.30415°	-80.13287°	14.49	5.75	11/30/2017	8.74	Sunny
MW-2	26.30415°	-80.13287°	14.49	7.33	12/29/2017	7.16	Sunny
MW-2	26.30415°	-80.13287°	14.49	7.33	2/13/2018	7.16	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.00	2/28/2018	6.49	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.25	3/9/2018	6.24	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.42	3/16/2018	6.07	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.58	3/22/2018	5.91	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.33	3/30/2018	6.16	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.33	4/6/2018	6.16	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.00	4/13/2018	6.49	Sunny
MW-2	26.30415°	-80.13287°	14.49	7.83	4/20/2018	6.66	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.50	4/27/2018	5.99	Sunny
MW-2	26.30415°	-80.13287°	14.49	7.33	5/3/2018	7.16	Sunny
MW-2	26.30415°	-80.13287°	14.49	6.75	5/14/2018	7.74	Rain
MW-2	26.30415°	-80.13287°	14.49	5.67	5/21/2018	8.82	Heavy Rain
MW-2	26.30415°	-80.13287°	14.49	5.50	5/25/2018	8.99	Heavy Rain
MW-2	26.30415°	-80.13287°	14.49	5.25	6/1/2018	9.24	Overcast
MW-2	26.30415°	-80.13287°	14.49	5.08	6/8/2018	9.41	Sunny
MW-2	26.30415°	-80.13287°	14.49	6.25	6/15/2018	8.24	Sunny
MW-2	26.30415°	-80.13287°	14.49	6.92	6/22/2018	7.57	Sunny
MW-2	26.30415°	-80.13287°	14.49	6.67	6/29/2018	7.82	Sunny
MW-2	26.30415°	-80.13287°	14.49	6.17	7/6/2018	8.32	Overcast
MW-2	26.30415°	-80.13287°	14.49	7.17	7/13/2018	7.32	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.00	7/20/2018	6.49	Sunny
MW-2	26.30415°	-80.13287°	12.74	5.33	7/27/2018	7.41	Rain (Top of PVC pipe was broken)
MW-2	26.30415°	-80.13287°	12.74	5.42	8/3/2018	7.32	Sunny (Top of PVC pipe was broken)
MW-2	26.30415°	-80.13287°	14.49	8.08	8/8/2018	6.41	Sunny (PVC pipe was fixed)
MW-2	26.30415°	-80.13287°	14.49	7.75	8/17/2018	6.74	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.17	8/24/2018	6.32	Overcast
MW-2	26.30415°	-80.13287°	14.49	7.33	9/17/2018	7.16	Sunny
MW-2	26.30415°	-80.13287°	14.49	7.92	10/1/2018	6.57	Sunny
MW-2	26.30415°	-80.13287°	14.49	8.42	10/31/2018	6.07	Sunny

SW 10th Street - Groundwater Reading

