

Peace River Monitoring Program (“PRMP”)

Program Summary

This PRMP is provided in connection with the Settlement Agreement to provide for the collection and analysis of certain sampled media relating to SFM-HC, and the delivery of that information (the “PRMP Report”) to Sierra Club, Manasota-88, and People for Protecting the Peace River (the “Recipients”). The purpose of the PRMP is to analyze water quality and water quantity in the Peace River between Fort Meade and Wauchula, Florida.

This program has three components:

- 1) monitoring and reporting on stream quality;
- 2) monitoring and reporting on stream biology; and
- 3) monitoring and reporting on water quantity.

During active mining at SFM-HC, the PRMP Report will be provided annually, by February 15th of the following year and will include the following components:

Water Quality Monitoring and Reporting

The PRMP includes monitoring at 11 locations along the Peace River and Little Charlie Creek basins as described in Table 1 and Figure 1, below. Samples will be collected monthly for all parameters outlined in Table 2, below.

Stream Biology Monitoring and Reporting

Mosaic will conduct sampling of fish, benthic macroinvertebrates, and field water quality parameters (temperature, dissolved oxygen, conductivity, turbidity, and pH) two times annually at four stations on the main stem of the Peace River as identified in Table 1, below. Stream Condition Index scores will be developed based on each valid sampling event. Sampling events will be coordinated to coincide with monthly ambient water quality monitoring events.

Water Quantity

Mosaic will monitor water quantity in the main stem of the Peace River at three locations and upstream of the confluence of Little Charlie Creek and the Peace River as identified in Table 3, below. Monitoring of the Peace River stations will utilize USGS gauging stations. In addition to ongoing evaluations of stream flows, Mosaic will also report the quantity of NPDES permitted outfall discharges to the segments of the Peace River and Little Charlie Creek that fall within the study area.

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Table 1 - Ambient Water Quality Monitoring Stations

Station Name	Description	Lat*	Long*	Water Quality	Stage	Flow	SCI
PRMP - 1	Peace River @ Fort Meade	27° 45' 06.20"	-81° 46' 54.90"	M	C	C	
PRMP - 2	Peace River @ Mt. Pisgah Road	27° 43' 22.00"	-81° 47' 24.20"	M	M		WS/DS
PRMP - 3	Bowlegs Creek @ Mt. Pisgah Road	27° 43' 16.20"	-81° 47' 17.90"	M	M		
PRMP - 4	Peace River @ County Line Road	27° 38' 46.00"	-81° 48' 08.10"	M	C	C	WS/DS
PRMP - 5	Whidden Creek @ SR 17	27° 42' 25.80"	-81° 48' 27.10"	M	M		
PRMP - 6	Payne Creek @ Payne's Creek State Park	27° 37' 06.10"	-81° 48' 27.60"	M	M		
PRMP - 7	Little Charlie Creek @ Locklar Rd	27° 37' 38.00"	-81° 43' 40.10"	M	M	M/C	
PRMP - 8	Little Charlie Creek @ Heard Bridge Rd.	27° 35' 16.10"	-81° 46' 15.30"	M	M		
PRMP - 9	Little Charlie Creek @ SFM – HC Exit	27° 34' 45.84"	-81° 47' 47.72"	M	C	M/C	
PRMP - 10	Peace River @ Heard Bridge Rd.	27° 34' 32.90"	-81° 48' 16.00"	M	M		WS/DS
PRMP - 11	Peace River @ E. Main Street	27° 33' 03.60"	-81° 47' 39.60"	M	M		WS/DS

M- Monthly

WS/DS –Wet Season / Dry Season

A – Annually

C - Continuous

M/C – intermittent until stage flow relationship is established, continuous thereafter

* - Coordinates shown are field verified

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Table 2 - Ambient Water Quality Monitoring Parameter List*

Parameter	Reporting Units	Method	Frequency
Temperature	Celsius	Field	Monthly
pH	s.u.	Field	
Conductivity	µmhos/cm	Field	
Turbidity	ntu	Field	
Dissolved Oxygen	mg/L	Field	
Nitrogen, Total	mg/L	Calculation	
Ammonia, Unionized	mg/L	Calculation DEP SOP 10/03/83	
Ammonia Nitrogen	mg/L	SM 4500 NH3 D	
Phosphorous, Total	mg/L	EPA 365.4	
Orthophosphate	mg/L	EPA 365.1	
Chlorophyll-a	µg/L	EPA 445.0	
Calcium, Dissolved	mg/L	EPA 200.7	
Magnesium, Dissolved	mg/L	EPA 200.7	
Alkalinity, Total	mg/L	SM 2320 B	
Fluoride	mg/L	EPA 300.0	
Chloride	mg/L	EPA 300.0	
Sulfate	mg/L	EPA 300.0	
TDS	mg/L	SM 2540 C	
TSS	mg/L	SM 2540 D	
Color	pcu	EPA 110.2	
R226 - 228	pci/L	Ra 226 – EPA 903.1 Ra 228 – Ra-05	

*-water quality measurements will not be collected under “no flow” conditions

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Table 3 - Flow Monitoring Stations

Station Name	Latitude*	Longitude*	Entity	Station ID	Measurement Type	Period of Record	
						Start	End
Little Charlie Creek @ SFM – HC Exit	27° 34' 45.84"	-81° 47' 47.72"	USGS	02295580	Monthly flow, continuous stage	Summer 2012	current
Little Charlie Creek @ Locklar Road	27° 37' 38.00"	-81° 43' 40.10"	USGS	02295520	Monthly flow, continuous stage	Summer 2012	current
Peace River at Fort Meade	27° 45' 06.20"	-81° 46' 54.90"	USGS	02294898	Continuous, real time	1974	current
Peace River at Bowling Green	27° 38' 46.00"	-81° 48' 08.10"	USGS	02295194	Continuous, real time	2010	current
Peace River at Zolfo Springs	27° 30' 15.80"	-81° 48' 00.50"	USGS	02295637	Continuous, real time	1933	current

* - Coordinates shown are field verified.