Project Status Report

PROJECT: Horse Creek Stewardship Program

DATE: December 6, 2006

DEVELOPED BY: Samuel Stone, Environmental Affairs Coordinator

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The following information is a brief summary of important tasks or recent activities occurring with the Horse Creek Stewardship Program (HCSP).

Technical Advisory Group (TAG).
The TAG recently met on November 14, 2006 to review and discuss the draft *Horse Creek Stewardship Program 2004 Annual Report.*

Monthly Water Quality Monitoring.
This sampling effort by Mosaic has continued monthly without any interruption of collected data. Mosaic has transmitted data to the Authority covering the period April 2003 - August 2006. August water quality results show that a more normal surface water quality has returned to the basin and the strong ground water influence found in April, May and June is no longer present.

Macroinvertebrate and Fish Sampling.
The first set of samples for 2006 were collected on April 6, 2006. The second set was sampled on July 27, 2006. The third set is scheduled for November 28, 2006.

Clay Settling Ponds Real Time Monitoring.
Monitoring of these ponds continues with no reported releases.

Water Quality Continuous Recorder.
This monitoring effort is on going. A summary of this data is being supplied by Mosaic monthly along with the routine water quality data. The dry Spring period resulted in no reported results due to low flows but July has returned back to normal due to increased stream flows.

Reports.
The draft QA/QC Report has temporarily been deferred while other more important reports are being completed.

The draft *Horse Creek Stewardship Program 2004 Annual Report* is currently under revision by Mosaic and the report should be finalized in the next few weeks.

Recent Impact Assessments.
No recent assessments have been required.

Project Historical Briefing

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The Settlement Agreement between the Peace River / Manasota Regional Water Supply Authority (Authority) and Mosaic Fertilizer Company (Mosaic) became effective on March 5, 2003. Contained within the agreement is the required implementation of the Horse Creek Stewardship Program (HCSP) by Mosaic and included program oversight by the Authority.

The HCSP consists of multiple tasks occurring on different schedules. Below is a list of the major tasks, a brief description of the tasks and historical progress on those tasks.

Technical Advisory Group (TAG).

The TAG as required by the HCSP consists of one representative from each member government. The TAG is to review the progress and findings of the program and provide technical input to the Authority. Members of the TAG consist of the following people. Bernard Milosky (Charlotte County), Chris Rogers (DeSoto County), Robert Brown (Manatee County) and John Ryan (Sarasota County). Members of the TAG continue to receive copies of the Board Package Project Status Reports monthly. The TAG last met and discussed the draft *Horse Creek Stewardship Program 2004 Annual Report* on November 14, 2006, which will be finalized shortly.

Monthly Water Quality Monitoring.

Mosaic will collect surface water samples from Horse Creek at four fixed stations once per month. These samples will be analyzed for 21 different chemical parameters and the results reported to the Authority monthly.

This sampling effort by Mosaic was started in April 2003 and has continued monthly without any interruption of collected data. In December 2003 EarthBalance visited the monitoring sites with Mosaic and collected duplicate samples at the 4 surface water sites. Every other month (Feb, Apr, June, Aug, Oct, & Dec) EarthBalance is scheduled to visit the sites to collect samples at random to spot check water quality or collect duplicate samples with Mosaic at the designated four sample stations.

Macroinvertebrate and Fish Sampling.

This sampling effort is required three times per year in Spring (March / April), Summer (July / August) and Fall (October / November). The sample locations are the same four fixed stations used for water quality monitoring. Below is a summary table showing when the benthic and fish samples have been collected during the stewardship program.

Horse Creek Stewardship Program
Macroinvertebrate and Fish Samples
Summary Table I

Sample Event	Spring (Mar - Apr)	Summer (Jul - Aug)	Fall (Oct - Nov)
Calendar Year 2003	April 2003	July 2003	November 2003
Calendar Year 2004	April 2004	November 2004	February 2005
Calendar Year 2005	April 2005	September 2005	December 2005
Calendar Year 2006	April 2006	July 2006	

Clay Settling Ponds Real Time Monitoring.
This component requires that the Authority have the ability to monitor in real time the fluid levels of various clay settling ponds. This system could act as an early warning device for the Peace River Facility staff should an embankment fail, releasing clay material into Horse Creek.

This equipment was fully operational as of December 12, 2003. On April 20, 2004 additional equipment modifications where implemented and resulted in less false alarms.

At the Authority's request Mosaic agreed to model and provide a report on the possible affects of a dam failure at these ponds and the resulting flow rate scenarios down Horse Creek. The report concluded that under a worse case scenario a dam breach would have a travel time of 2 - 2.5 days before the water from the ponds would reach the Peace River Facility. This information was also transmitted to the TAG.

Horse Creek Flow Data.
Flow and stage data is collected and monitored at the four fixed water quality sample stations. Stations 1 & 4 have existing USGS stations with data available on the USGS web site. Stations 2 & 3 required the installation of stage level gages by Mosaic.

Water Quality Continuous Recorder.
The continuous water quality monitoring equipment became operational in July 2003 and is located at the fixed water quality station number 1, closest to mining operations. Monthly this data is down loaded in the field, and placed into a data base. This monitoring effort is on going and creating a very large data base. This data will be supplied as part of the Annual Report and summarized monthly along with other routine water quality data

Reports.
The QA/QC project report will describe the field methods, lab methods, standards and procedures used by Mosaic when implementing the monitoring program. The QA/QC plan will ensure that the HCSP methods used are the standard methods accepted by scientific and regulatory communities as well as, ensure that the results are reliable, reproducible and consistent with other programs.

The Historical Report will be an accumulation of existing historical data on Horse Creek. This data will then be analyzed to determine historical back ground conditions of Horse Creek, determine if any trends are evident and be the basis for comparing with current data collected as part of the HCSP.

The Annual Reports will provide all the data collected as part of the HCSP and will compare these results with the historical data. The intent is to determine if current water quality is different from the past and if a trend can be determined. Below is a summary table showing the progress of the various reports required by the stewardship program.

Horse Creek Stewardship Program
Project Reports
Summary Table II

Report Title	Receive First Draft Report	Receive Final Draft Report	TAG Review	Receive Final Report
2003 Annual Report	10/08/04	2/7/05	3/24/05	7/14/05
Historical Report	8/16/05	12/5/05	2/23/06	4/28/06
2004 Annual Report	3/10/06	8/30/06	11/14/06	
2005 Annual Report				
QA/QC Plan				

Impact Assessments.
As required by the HCSP, if a water quality parameter exceeds a specified trigger value or a significant trend in the data is found, then Mosaic will initiate an impact assessment for the cause of the exceedance. The assessment can consist of further monitoring, and evaluations within the basin and may result in scientific assistance from Mosaic (if not at fault) or corrective mining actions (if at fault). If the assessment finds Mosaic at fault for the trigger exceedance or trend then the impact assessment is followed by corrective actions evaluation and implementation. Below is a summary table showing the frequency of exceeded trigger levels for the stewardship program

Horse Creek Stewardship Program
Exceeded Trigger Levels
Summary Table III

Project Period	Station Number	Chemical Parameter	Frequency of Exceeded Trigger Levels (months)
Apr 2003 - August 2006	1	Dissolved Oxygen	3/41
(41 months)	1	Color	1/41
	2	Dissolved Oxygen	32/41
	2	pH	1/41
	2	Chlorophyll	9/41
	2	Radium 226 + 228	1/41
	2	Iron	1/41
	2	Fatty Acid	3/41
	3	Dissolved Oxygen	8/41
	3	Color	2/41
	3	Total Dissolved Solids	2/41
	3	Dissolved Calcium	2/41
	3	Chlorophyll	1/41
	3	Fatty Acid	1/41
	3	pH	1/41
	3	Sulfate	3/41
	4	Iron	23/41
	4	Dissolved Oxygen	4/41
	4	Sulfate	4/41
	4	Total Dissolved Solids	3/41
	4	Conductivity	1/41
	4	Dissolved Calcium	2/41
	4	Total Alkalinity	1/41

All impact assessments have shown that the trigger levels were exceeded due to other causes not related to mining activities. The most recent significant event was in November 2004 where Station 2 exceeded the trigger level for total fatty acids. An impact assessment dated 2/28/05 was submitted and found that mining activities did not cause the higher levels of fatty acids. As a consequence of these preliminary impact assessment results, monitoring for these parameters and trend analysis of the data over time will continue.