Biological Assessment of

Dolomite, Inc.

Jackson County

NPDES # FL0101192

Sampled October 15, 2012

February 2013

Biology Section

Bureau of Laboratories

Division of Environmental Assessment and Restoration

Quality Manual No. 870346G

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EPA End Sheet

Facility Overview

Dolomite, Inc. is a dolomite mining operation which produces a discharge of wastewater as a result of the flow from natural springs located within the mining area. The effluent is discharged into the Chipola River, a Class III Fresh Water (see map Appendix A). Wastewater from washed dolomite is also collected in two sediments ponds which may discharge into Rocky Creek due to stormwater runoff caused by rainfall that exceeds a 25-year/24-hour storm event. Rocky Creek flows into the Chipola River. The design flow of the wastewater system is 9.7 million gallons per day (MGD). The annual average flow for October 2011 to September 2012 was 4.70 MGD. The plant discharges continuously, and the flow was not measured during this survey.

Biological assessments are prepared by FDEP staff to provide information for review of NPDES permit renewal applications. Biological assessments, in conjunction with other information concerning the subject facility and its receiving-water body, are used to determine appropriate permit conditions.

See the Facility Summary (Appendix B) for a description of the facility, summary of permit limits, and Discharge Monitoring Report (DMR) information.

Methods

The purpose of this investigation was to determine the discharge's effects on the biota of the receiving waters. Chemical and biological comparisons were made between a Control Site (located in the Chipola River beginning 80 m upstream of the point of discharge and ending 180 m upstream of the point of discharge) and a Test Site (located in the Chipola River beginning approximately 10 m downstream of the point of discharge and ending 110 m downstream of the point of discharge). Effluent samples were taken as grab samples from monitoring location EFF-1.

All field and laboratory biological methods followed Bureau of Laboratories and Biology Section Standard Operating Procedures (see http://www.dep.state.fl.us/labs/library/lab_sops.htm and http://www.dep.state.fl.us/water/sas/sop/sops.htm for details) and met DEP quality assurance/quality control standards (see http://www.dep.state.fl.us/water/sas/qa/index.htm). Explanations of specific methods and measurements can be found in Appendix C.

The following were involved in this investigation: Nathan Mulkey, Frank Butera, and Rick Abad (FDEP Northwest District Office, Pensacola), and FDEP Central Laboratory in Tallahassee. The report was reviewed by District representatives and the Point Source Studies Review Committee (Michelle Fish and Mike Tanski).

Results

Organic Constituents (See Table 1 and Appendix F)

- No organic constituents were detected in the effluent.
- No organic constituents were detected in the field blank.

Metals (See Table 2 and Appendix F)

- All metals in the effluent grab samples were either undetected or detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F. A. C.).
- All metals in the Control Site and Test Site grab samples were either undetected or detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F. A. C.).
- No metals were detected in the field blank.

Physical and Chemical Parameters (See Table 1 and Appendices D, E and F)

- Habitat Assessment scores were similar at the Control Site (137) and Test Site (125), which places both sites in the Optimal category. The Control Site had better substrate diversity and availability than the Test Site. The Test Site was more affected by habitat smothering than the Control Site. The right bank of the Control Site lost points for bank stability. The riparian buffer zone width of the right bank at both the Control Site and Test Site scored in the marginal category and was between 6 m to 12 m with human activities close to the system. The

water velocity, artificial channelization, and riparian zone vegetation quality scores were similar at both sites. Stream Condition Index (SCI) macroinvertebrate samples were only collected from the right bank of the Chipola River due to the width of the river. This ensures that the Test Site habitats were receiving effluent.

- Dissolved oxygen (mg/L), pH (Standard Units), and specific conductance (µmhos/cm) of the effluent, at the Control Site, and at the Test Site complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and effluent permit limits.
- Alkalinity of the effluent, Control Site, and Test Site samples complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- Chlorophyll *a* (corrected) was detected at a low level in the effluent sample and in the Test Site sample. Chlorophyll *a* detected in the Control Site sample was between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
- Total suspended solids (TSS; mg/L) and turbidity (NTU) of the effluent, Control Site, and Test Site samples complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and/or effluent permit limits.

Nutrients (See Table 1 and Appendix F)

- Total phosphorus was detected in the effluent, Control and Test Site samples at low levels. Ortho-phosphate and total ammonia was undetected in the effluent sample and detected between the MDL and PQL for both the Control and Test Site samples. Nitrate+nitrite amounts detected in the Control Site and Test Site samples were three times higher than the amount detected in the effluent sample. Total nitrogen of the Control Site and Test Site samples was two times higher than the effluent sample. Total Kjeldahl nitrogen, organic nitrogen and organic carbon were detected at similar amounts in all three samples. There was no detectable nutrient enrichment from the effluent at the Test Site.
- No nutrients were detected in the field blank.

Algal Growth Potential (See Table 3 and Appendix F)

- Raschke and Shultz (1987) determined that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The AGP value in the effluent sample using the freshwater species, *Pseudokirchneriella subcapitata,* was less than the MDL.
- The AGP value for the Control Site sample was detected but lower than the problem threshold.
- The AGP value for the Test Site sample was undetected.
- The analytical chemistry suggests that the effluent, Control Site and Test Site samples are phosphorus limited.
- The effluent is not contributing to nutrient enrichment at the Test Site in the Chipola River.

Bioassessment

Periphyton (See Table 4 and Appendices G-1 and G-2)

- Periphyton communities at both the Control and Test Sites were similar and consisted mostly of diatoms. The diatom community at both sites was dominated by the species *Staurosirella pinnata*. There were no adverse effects apparent on the periphyton community in the Chipola River from the effluent.

Macroinvertebrates (See Tables 5 and 6 and Appendices H-1, H-2, and I)

- Quantitative macroinvertebrate data were collected from Hester-Dendy samplers at the Control Site. The sampler placed at the Test Site was found on the bank, out of the water during retrieval and was not analyzed. Figure 1 shows the USGS gage data during the Hester-Dendy incubation period from the Chipola River near Altha, Florida, approximately six miles from the Dolomite, Inc. facility. Two peaks on the hydrograph correspond to increases of approximately 1 foot in the water level and may account for the Test Site Hester-Dendy samplers being out of the water. Figure 1 also demonstrates that during Stream Condition Index (SCI) sampling water levels had returned to pre-peak stages. The Hester-Dendy sampler at the Control Site was analyzed at the request of district staff for informational purposes regarding the Chipola River. Table 5 and Appendix I contain the data collected from the Control Site Hester-Dendy sampler.
- Qualitative macroinvertebrate data from dipnet samples indicated that the macroinvertebrate community at the Test Site was similar to the Control Site. The Test Site scored 61 A on the SCI placing it in Category 2, and the Control Site scored 60 A, placing it in Category 2 (see Appendix C for an explanation of SCI Categories). Both sites had similar numbers of Trichoptera taxa, clinger taxa, long-lived taxa, and sensitive taxa. The Test Site had fewer Ephemeroptera taxa and lower Ephemeroptera percentages overall. The Control Site had

higher percentages of Gastropods than the Test Site. Both sites were dominated by the pollution tolerant amphipod, *Hyalella azteca*, which made up approximately one-fifth of the samples collected from each site. There were no negative effects on macroinvertebrates at the Test Site that were attributable to the effluent.

Conclusion

The AGP values and nutrient values of the Test Site samples are similar to the values in the Control Site samples and do not reflect nutrient enrichment due to the effluent.

There were no significant differences in the periphyton communities of the Control and Test Site. Based on macroinvertebrate data collected from dipnet sweeps, the communities at both instream sites were similar. Overall, the effluent did not appear to be adversely affecting the biota in this portion of the Chipola River.

Literature Cited

Fore, L.S., Frydenborg, R., Miller, D., Frick, T., Whiting, D., Espy, J., and Wolfe, L. 2007. Development and Testing of

Biomonitoring Tools for Macroinvertebrates in Florida Streams (Stream Condition Index and Biorecon). Florida Department of Environmental Protection. 110pp.

Karr, J.R. & E.W. Chu. 1998. Restoring life in running waters: Better biological monitoring. Island Press. Covelo, California. 200 p.

Magurran, A. E. 1988. Ecological diversity and its measurement. Princeton University Press, Princeton, New Jersey.

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA-600/9-78-018. U. S. EPA, Cincinnati, Ohio. 126 p.

Plafkin, J. L., M. T. Barbour, K. D. Porter, S. K. Gross and R. M. Hughes. 1989. Rapid bioassessment protocols for use in streams and rivers: Benthic macroinvertebrates and fish. U. S. EPA, Office of Water Regulations and Standards, Washington D.C., EPA 440-4-89-001.

Raschke, R. L. and D. A. Schultz. 1987. The use of the algal growth potential test for data assessment. J. Wat. Poll. Cont. Fed. 59(4): 222-227.

Stevenson, R. J. and L. L. Bahls. 1999. Periphyton protocols. Pp. 6.1-6.22 in: Rapid bioassessment protocols for use in wadeable streams and rivers. 2nd edition. By: M. T. Barbour, J. Gerritsen, B. D. Snyder and J. B. Stribling. EPA 841-B-99-002. U. S. Environmental Protection Agency, Office of Water, Washington, D. C.

Stevenson, R. J. and J. P. Smol. 2003. Use of algae in environmental assessments, pp. 775-803, in: Freshwater algae of North America, edited by J. D. Wehr and R. G. Sheath, Academic Press, San Diego. 918 pp.

USEPA. 2000. Nutrient Criteria Technical Guidance Manual – River and Streams. EPA-822-B-00-002.

Table 1. Effluent limits, Class III Freshwater Criteria and chemical data

Dolomite, Inc.	Class III Criteria	Effluent Limits	Effluent	Control Site	Test Site
Organic Constituents (µg/L)					
None Detected	-	-	None Detected	-	-
Nutrients (mg/L)					
Ortho-phosphate	-	-	0.004 U	0.009 I	0.008 I
Total Phosphorus	-	-	0.01	0.021	0.025
Total Ammonia	-	-	0.01 U	0.013 I	0.014 I
Un-ionized Ammonia	≤ 0.02 s	-	≤ 0.02 c	≤ 0.02 c	≤ 0.02 c
Nitrate and Nitrite	-	-	0.44	1.5	1.4
Total Kjeldahl Nitrogen	-	-	0.36	0.29	0.4
Organic Nitrogen	-	-	0.365 c	0.277 c	0.386 c
Total Nitrogen	-	-	0.8 c	1.79 c	1.8 c
Organic Carbon	-	-	2.4	3.0	2.9
General Physical and Chemical Parameters					
Habitat Assessment	-	-	-	137	125
Dissolved Oxygen (mg/L)	≥ 5.0	-	7.8	9.7	9.6
pH (SU)	6.0 - 8.5	6.0 - 8.5	8.3	7.8	7.9
Conductivity (µmhos/cm)	≤ 1,275	-	320	258	261
Temperature (°C)	-	-	24.6	21.9	21.1
Sample Depth (m)	-	-	0.15	0.15	0.15
Alkalinity (mg CaCO3/L)	≥ 20.0	-	114	116	117
Chlorophyll *a* (µg/L) - Corrected	-	-	7.0	0.63 I	2.0
Phaeophytin (µg/L)	-	-	0.40 U	0.59 I	0.97 I
Total Suspended Solids (mg/L)	-	≤ 20.0	5 I	5 I	5 I
Turbidity (NTU)	< 29 t	≤ 31 c	2.9	2.2	3.0
Color, true (PCU)	-	-	4.3 I	13	13
CBOD, 5 day (mg/L), N - inhibited	-	-	1.9 I	0.87 I	1.4 I
Chloride (mg/L)	-	-	25	5.9	7.4
Fluoride (mg/L)	≤ 10.0	-	0.093 I	0.057 I	0.06 I
Sulfate (mg/L)	-	-	8.0	1.5	2.1
Flow (MGD)	-	Report*	5.02*	-	-
Hardness (mg $CaCO_3$)	-	-	125 c	125 c	130 c

"-" Sample/measurement was not collected or criterion/limit does not exist

c - Value is calculated

t - Shall not exceed 29 NTUs above background

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

U - Material analyzed for but not detected; value reported is the method detection limit

* - monthly average

Table 2. Effluent limits, Class III Freshwater Criteria and metals data. Class III Criteria based on hardness are presented individually for each site based on hardness at that site.

Dolomite, Inc.	Effluent Class III Criteria	Effluent Limits	Effluent	Control Site Class III Criteria	Control Site	Test Site Class III Criteria	Test Site
Metals (µg/L unless otherwise noted)							
Aluminum	-	-	65	-	74	-	173
Arsenic	≤ 50	-	2.66	≤ 50	0.45 I	≤ 50	0.66 I
Cadmium	≤ 0.3 b	-	0.050 U	≤ 0.32 b	0.050 U	≤ 0.33 b	0.050 U
Calcium (mg/L)	-	-	33.5	-	44.4	-	44.6
Chromium-III	≤ 104 b	-	0.30 U	≤ 104 b	0.83 I	≤ 107 b	1.1 I
Copper	≤ 11.3 b	-	0.50 U	≤ 11.3 b	0.50 U	≤ 11.7 b	0.50 U
Iron	≤ 1,000	-	77 I	≤ 1,000	260	≤ 1,000	370
Lead	≤ 4.20 b	-	0.20 U	≤ 4.24 b	0.20 U	≤ 4.44 b	0.25 I
Magnesium (mg/L)	-	-	10.1	-	3.50	-	4.50
Nickel	≤ 63.1 b	-	0.76 I	≤ 63.1 b	0.25 U	≤ 65.1 b	0.33 I
Selenium	≤ 5.0	-	0.36 I	≤ 5.0	0.20 U	≤ 5.0	0.20 U
Silver	≤ 0.07	-	0.025 U	≤ 0.07	0.025 U	≤ 0.07	0.025 U
Sodium (mg/L)	-	-	17	-	2.9	-	4.5
Zinc	≤ 145 b	-	5.0 U	≤ 145 b	5.0 U	≤ 150 b	5.0 U

See Table 1 for calculated hardness.

"-" Sample/measurement was not collected or criterion/limit does not exist

b - Value is calculated based on hardness

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

U - Material analyzed for but not detected; value reported is the method detection limit

Table 3. Measured and predicted algal growth potential (AGP; mg dry weight/L) for ortho-phosphate (OP) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus

Dolomite, Inc.											
Location	**AGP (measured)**	**Predicted AGP (OP) ± 20%**			**Predicted AGP (TP) ± 20%**			**Inorganic N:P ratio**	**Total N:P ratio**
Effluent	0.300 U	1.7	±	0.3	4.3	±	0.9	112.5	80.0
Control Site	0.439	3.9	±	0.8	9.0	±	1.8	168.1	85.2
Test Site	0.300 U	3.4	±	0.7	10.8	±	2.2	176.8	72.0

U - Material analyzed for but not detected; value reported is the method detection limit

Table 4. Periphyton composition - qualitative

Dolomite, Inc.	Control Site	Test Site
Number of Wet Taxa	12	11
Number of Wet Algal Units Identified	300	300
Percent Dominant Wet Taxon	81.7	77.7
Dominant Wet Taxon Name	Bacillariophyta (Diatoms)	Bacillariophyta (Diatoms)
Number of Diatom Taxa	38	43
Number of Diatom Algal Units Identified	500	500
Percent Dominant Diatom Taxon	27.0	29.0
Dominant Diatom Taxon Name	*Staurosirella pinnata*	*Staurosirella pinnata*
Percentage Composition for Wet Algae		
Blue-green algae	16.3	21.3
Green algae	1.7	0.7
Diatoms	81.7	77.7
Cryptophytes	0.3	0.0

Table 5. Macroinvertebrate Hester-Dendy samples - quantitative

Dolomite, Inc.	Control Site
Summary Statistics	
Shannon-Weaver Diversity	3.98
Number of Taxa	33
Number of EPT Taxa	12
Percent Dominant Taxon	18.5
Dominant Taxon Name	*Maccaffertium exiguum* (Ephemeroptera)
Total Number of Individuals (counted)	326
Total Number of Individuals (#/m^2)	649
Community Composition: Percent of total	
Amphipoda	14.1
Coleoptera	5.2
Decapoda	0.3
Diptera	23.4
Ephemeroptera	52.7
Odonata	0.6
Plecoptera	0.0
Trichoptera	3.1
Other	0.6
Functional Feeding Groups: Percent of total	
Piercers	0.6
Predators	5.9
Scavengers	0.2
Scrapers	21.2
Shredders	12.4
Surface Deposit Feeders	47.9
Suspension Feeders	11.6
Unknown	0.3

NOTE: The Test Site Hester-Dendy sampler was out of the water during retrieval and was not analyzed.

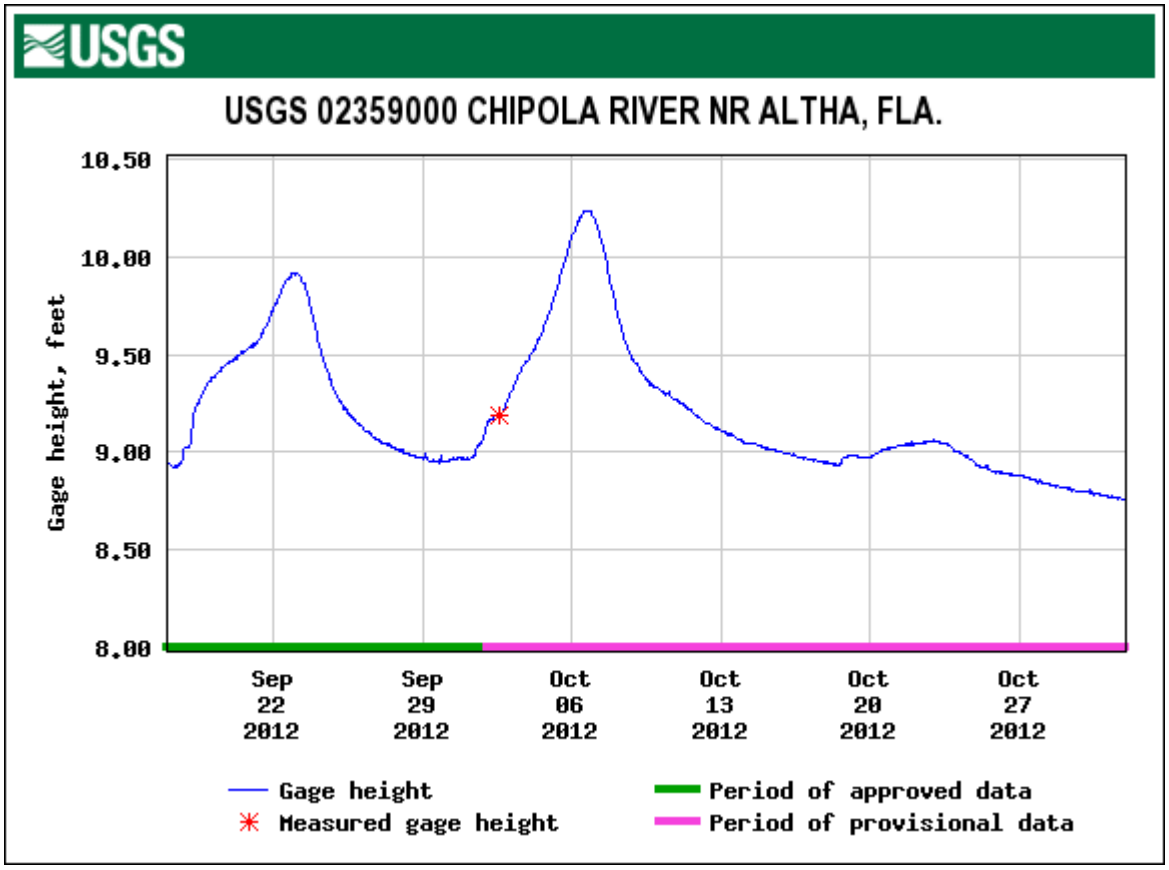
Table 6. Macroinvertebrate dipnet samples - qualitative

Dolomite, Inc.	Control Site		Test Site	
Summary Statistics				
Stream Condition Index 2007 (value)	60 A		61 A	
Stream Condition Index 2007 (category) *	Category 2		Category 2	
Stream Condition Index Metrics	Rep 1	Rep 2	Rep 1	Rep 2
Number of Total Taxa	32	30	32	31
Number of Ephemeroptera Taxa	10	8	6	6
Number of Trichoptera Taxa	4	5	5	5
Number of Clinger Taxa	7	8	9	6
Number of Long-lived Taxa	1	3	2	1
Number of Sensitive Taxa	6	8	6	10
Percent of Dominant Taxon	19.6	12.7	18.3	25.9
Percent Suspension Feeders and Filterers	22.8	15.8	15.4	21.4
Percent of Tanytarsini Individuals	1.3	0.0	2.0	2.7
Percent of Very Tolerant Individuals	1.9	1.9	1.3	2.7
Total Number of Individuals	158	158	153	147
Community Composition: Percent of total				
Dominant Taxon Name	*Hyalella azteca* (Amphipoda)	*Hyalella azteca* (Amphipoda)	*Hyalella azteca* (Amphipoda)	*Hyalella azteca* (Amphipoda)
Acariformes	0.6	0.0	0.7	0.0
Amphipoda	19.6	12.7	18.3	25.9
Bivalvia	0.0	0.0	0.7	0.0
Coleoptera	1.9	10.8	20.9	8.2
Decapoda	0.6	0.6	0.7	2.0
Diptera	25.3	19.0	19.0	18.4
Ephemeroptera	26.6	28.5	18.3	18.4
Gastropoda	6.3	8.9	2.0	1.4
Odonata	0.0	0.0	0.7	1.4
Oligochaeta	0.6	0.0	0.7	0.0
Plecoptera	0.0	0.0	0.0	0.7
Trichoptera	17.7	18.4	17.7	23.1
Other	0.6	1.3	0.7	0.7
Functional Feeding Groups: Percent of total				
Burrowing Deposit Feeders	0.6	0.0	0.7	0.0
Piercers	3.2	4.8	3.9	2.7
Predators	2.2	1.0	4.9	5.4
Scavengers	0.3	0.3	0.3	1.0
Scrapers	7.9	14.9	14.4	8.5
Shredders	19.0	15.8	16.7	21.4
Surface Deposit Feeders	40.2	43.0	41.2	37.4
Suspension Feeders	22.8	15.8	15.4	21.4
Unknown	3.8	4.4	2.6	2.0

A - Value reported is the mean of two determinations

* SCI_2007 categories from Table LT 7200-2 of DEP-SOP-002/01 as referenced in Quality Assurance Rule (62-160 F.A.C.), December 3, 2008: Values 0 ≤ 34 are Category 3; Values 35 < 67 are Category 2; Values 68 ≤ 100 are Category 1

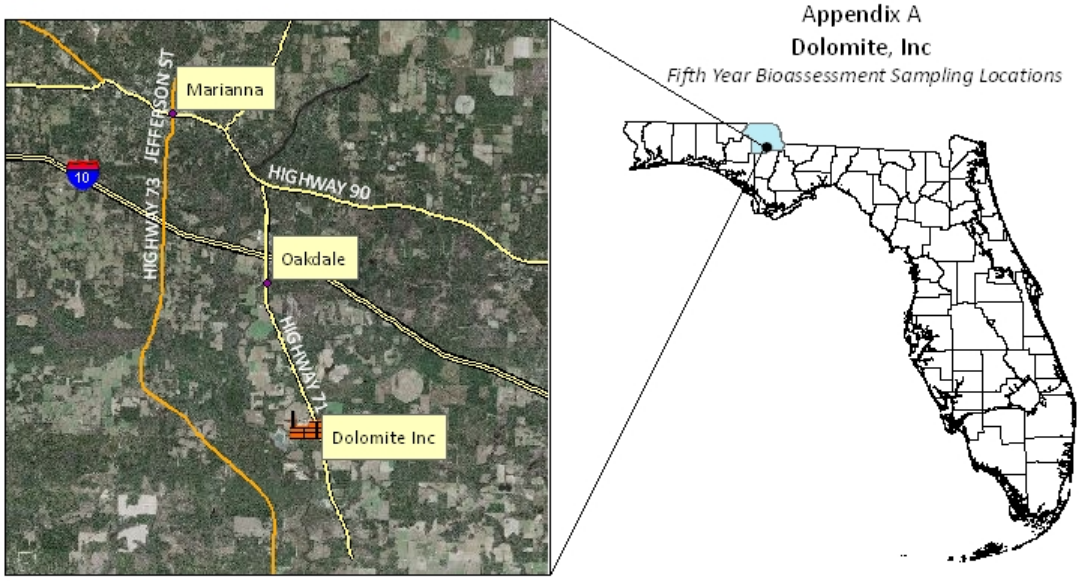
Figure 1. USGS gage data for the Chipola River near Altha, FL.

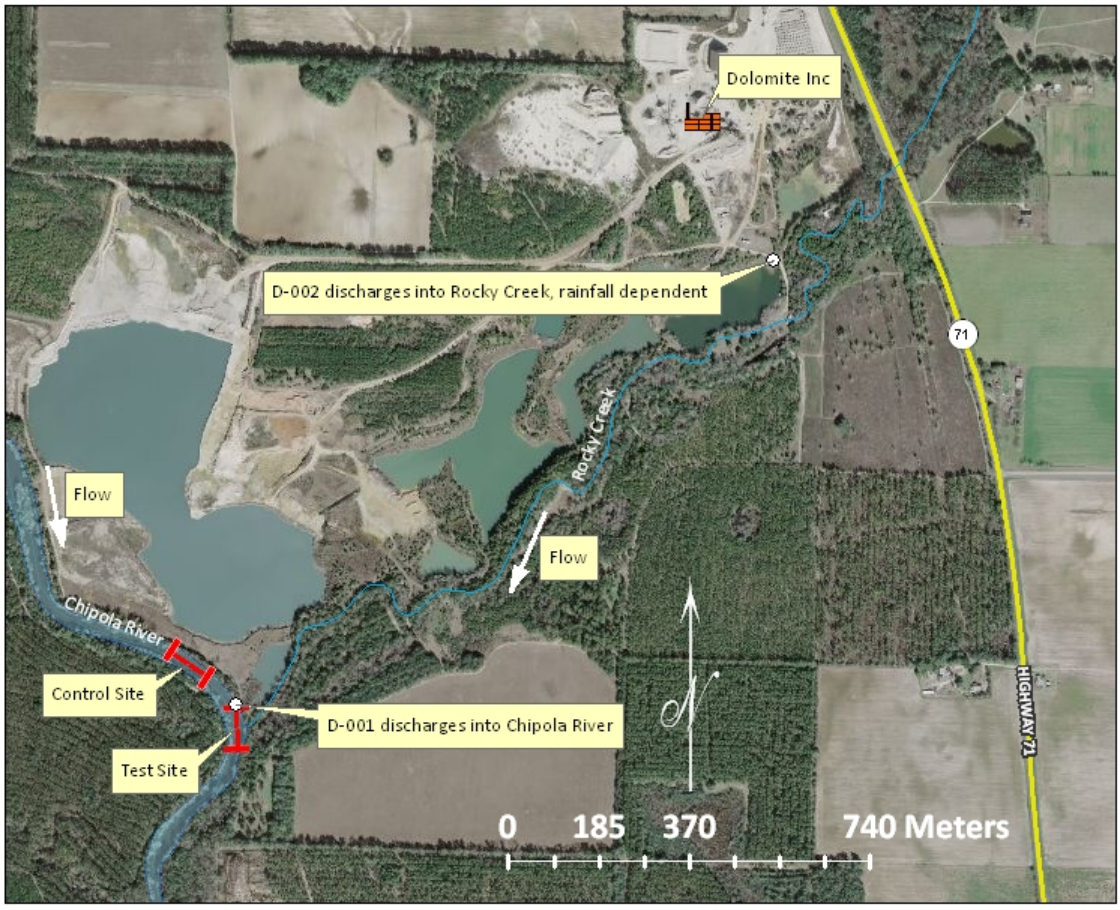


Appendix A

Dolomite, Inc

Fifth Year Bioassessment Sampling Locations





Appendix B

Facility summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Kim Allen	Contact Number: 595-0553
Facility Name (as it appears on permit): Dolomite	Former Names:
NPDES Permit Number: FL0101192	Permit Expiration Date: 7/17/2013
Physical Address: 1321 Highway 71, Marianna, FL 32348	
District: NWD	County: Jackson
Function of Facility: Dolomite mining facility	
Facility Type: IW	Permitted Capacity (MGD): 9.7 mgd annual average daily flow
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 4.70 mgd monthly average (10/01/2011 – 9/30/12)	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months):	
Description of type of Discharge: ☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	

Description of Permitted Outfall(s):

D:001: An existing, 9.7 MGD estimated annual average daily flow, discharge of spring water from the man-made lake to the Chipola Rive, Class III freshwater, Special OFW, via Outfall D-001. The outfall is a 60-inch corrugated metal pipe located approximately at latitude 30° 38' 50.24" N, longitude 85° 10' 35.32" W.

D002: An existing stormwater discharge from Sedimentation Basin No. 5, allowed only after rainfall events exceeding the 25-year 24-hour storm event, to surface waters in the inactive mining quarry thence to Rocky Creek and ultimately to the Chipola River, Class III freshwater, Special OFW, via Outfall D-002. The outfall is an 18-inch farm pond riser located approximately at latitude 30° 39' 20.11" N, longitude 85° 09' 54.32" W.

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):

The natural spring water from the man-made lake flows in a southeasterly direction through a narrow channel into a small lake that serves as a final sedimentation basin. The water flows from this basin over three Rip-Rap turbidity barriers and through a floating silt barrier. The treated water flows through a culvert and discharges into the Chipola River, Class III freshwater, Special Outstanding Florida Water (OFW).

Following crushing and classification the rock is washed in an area west of the administrative building. The process wastewater from this washing operation is collected in two sediment ponds for reuse in the rock washing process. Sediment is periodically removed from these ponds and it is subsequently dried and sold as agricultural lime.

Stormwater runoff from the rock washing and administrative building areas, hereafter referred to as the rock washing operation, is retained in the rock washing sediment ponds and in retention basins to the north and south of the administrative building. Stormwater runoff from the areas east and south of the administration building drains into Sedimentation Basins 4 and 5; these basins can retain the stormwater runoff from a 25-year/24-hour storm event (9.0-inches). In the event of a storm exceeding the 25-year/24-hour storm, Basin 4 would overflow into Basin 5 and Basin 5 would discharge via a riser pipe into the inactive mining quarry. The inactive mining quarry is spring fed and produces a continual flow into Rocky Creek that flows along the entire length of the southeast property boundary.

PART I: Continued
List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)

A. Surface Water Discharges

1. During the period beginning on the issuance date and lasting through the expiration date of the permit, the permittee is authorized to discharge from Outfall D001, water from the dolomite mining operation, which is primarily induced by natural springs in the mining area. Such discharges shall be limited and monitored by the permittee as specified below:

Outfall D-001 (WAFR 31171)	**Discharge Limitations**			**Monitoring Requirements**		
Parameters (units)	**Monthly Average**	**Daily Maximum**	**Daily Minimum**	**Monitoring Frequency**	**Sample Type**	**Sample Point**
Flow (MGD)	Report	--	--	Monthly	Estimate	EFF-1
Turbidity (JTU)	--	See Cond. I.A.3.	--	Monthly	Grab	EFF-1
Turbidity (Background) (NTU)	--	Report	--	Monthly	Grab	SWB-1
Solids, Total Suspended (MG/L)	--	20.0	--	Monthly	Grab	EFF-1
pH (SU)	--	8.5	6.0	Monthly	Grab	EFF-1
pH (SU)	--	Report	--	Monthly	Grab	SWB-1

PART I: Continued

Receiving Waters:	Classification (indicate whether fresh or marine):
Chipola River	Class III, Freshwater, Special OFW

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):

N/A

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):

N/A

Facility Mixing Zone Details (if applicable):

N/A

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year:

Date	Parameter and Units	Limit	Result
5/12	**Turbidity**	**0**	**28.4 NTU**

Describe previous FYI and WQBEL study:

N/A

Describe previous or current Enforcement Actions (including WLs):

N/A

Describe any violations or problems noted in previous inspection:

N/A

Discuss whether DMR trends within previous five years are improving or declining:

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):

PART II: Sampling Event Information

Date(s) sample collected: 10/15/12	Sampler(s): Nathan Mulkey, Rick Abad, Frank Butera
Temperature (Deg C): 24.60	pH (SU): 8.26
Dissolved Oxygen (mg/L): 7.75	Conductivity (umhos/cm): 320
Total Residual Chlorine (mg/L): na	Total Residual Chlorine - after Disinfection (mg/L): na
Method of Chlorination: na	Method of De-chlorination: na
Flow During Sample Collection for each outfall(MGD): na	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):	
Describe Discharge during Sampling Event: ☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify	

Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:

Appendix C

Explanation of measurements

(1) Quality Assurance and Quality Control

FDEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (FDEP SOPs). Methods for all analyses are on file at the FDEP Central Laboratory in Tallahassee and may be viewed on the web at http://www.floridadep.org/labs/sop/index.htm and/or http://www.floridadep.org/labs/qa/index.htm .

(2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following FDEP SOPs. The results from these analyses were compared with Water Quality Criteria (62-302, F.A.C.) and facility permit limits. Exceedances of Water Quality Criteria may constitute violations of specific provisions of Chapter 62-302 (F.A.C.) and/ or facility permit limits.

(3) Habitat Assessment

Habitat assessment is used to evaluate the physical structure and extent of disturbance in a waterbody. Eight aspects are ranked, with 20 possible points for each aspect (QA Rule SOP FT 3100). The Habitat Assessment score includes types and amounts of benthic substrates, water velocity, amount of sand or silt accumulation, extent of artificial channelization, bank stability, and riparian zone width and vegetation type. All scores are summed to yield an overall Habitat Assessment score. Habitat Assessment score ranges from 11-160 and overall habitat quality is assigned to one of four categories: Optimal (120-160 points), Suboptimal (80-119 points), Marginal (40-79 points), and Poor (11-39 points).

(4) Algal Growth Potential (AGP)

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. Raschke and Shultz (1987) found that an AGP above 5.0 mg dry weight/L represents a "problem" threshold for fresh receiving waters, implying nutrient enrichment. High AGP values may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N: P) is less than 10:1, nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater, phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(61), F.A.C.

(5) Algal Phytoplankton and Periphyton Assemblages

Qualitative periphyton are sampled by taking subsamples of algae from natural substrates throughout the sample reach. Phytoplankton were sampled from the water column using a 1 L grab sample. Periphyton were subsampled and identified to the lowest practical level, usually species. Wet taxa and diatoms are identified separately. In the wet taxa analysis, soft algae are identified to the lowest practical level, and diatoms are identified only to order level (diatom). In the diatom analysis, diatoms are identified to the lowest practical level.

Chlorophyll *a* Content: Chlorophyll *a* content is an estimate of algal biomass . High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may be constitute exceedances of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C. and/or 62-302.530(47)(b) F.A.C.

Algal Density: Algal density is estimated as number of natural units/ml for phytoplankton samples. Although algal density of a single site is highly variable and depends on a number of factors, comparison of algal density at a control site to algal density at a related test site gives a partial comparison of algal biomass at the two sites (Stevenson and Smol 2003).

Taxa richness: Taxa richness is the number of distinct algal taxa present in a sample. Extreme nutrient enrichment tends to reduce the number of different types of algae present in a sample because a few tolerant taxa tend to reproduce rapidly and constitute the majority of the cells present. However, moderate nutrient enrichment of nutrient poor waters may sometimes be correlated with increased algal taxa richness (Stevenson and Bahls 1999) as the algal community begins to respond to the increased input of nutrients.

Community Composition: Shifts in relative proportions of major groups of algae downstream of a point source, compared to upstream, control conditions, may indicate negative effects of a discharge (Stevenson and Bahls 1999) and may constitute exceedances of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C., 62-302.530(47)(b) F.A.C. and/or 62-302.530(61) F.A.C.

(6) Benthic Macroinvertebrate Assemblages

Benthic macroinvertebrates were collected using two methods. Quantitative samples were collected from Hester-Dendy multi-plate samplers incubated for 28 days. Qualitative collections are made using 20 dipnet sweeps (QA Rule SOP FS7420). Benthic macroinvertebrates were sorted and identified to the lowest practical taxonomic level, usually species.

Taxa richness: Taxa richness is the number of distinct macroinvertebrate taxa present in a sample. Stress, habitat destruction and pollution tend to reduce the number of different types of organisms present (Karr and Chu 1998). Decreases in taxa richness related to a facility's effluent may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C., 62-302.530(47)(b), F.A.C. and/or 62-302.530(61), F.A.C..

Percent Contribution of Dominant Taxon: Percent contribution of the dominant taxon is calculated by dividing the number of individuals in the most abundant taxa by the total number of individuals counted. Percent contribution of the dominant taxon tends to increase with increasing perturbation (Plafkin *et al*., 1989). Increases in the percent contribution of the dominant taxon related to a facility's effluent may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

Community Composition: Shifts in proportions of major groups of organisms downstream of a point source, compared to upstream, control conditions, may indicate negative effects of a discharge (Fore et. al. 2007, Karr and Chu 1998). Shifts in community composition related to a facility's effluent may constitute exceedances of 62-302.530(46) F.A.C., 62-302.530(47)(a), F.A.C., 62-302.530(47)(b), F.A.C. and/or 62-302.530(61), F.A.C.

Functional Feeding Groups: Environmental degradation may differentially affect groups of invertebrates based on how the group feeds (e.g. predators, deposit feeders, etc.). In Florida, pollution may be responsible for reducing the numbers of filter feeders and shredders (Fore et. al. 2007). Changes in the proportions of functional feeding groups related to a facility's effluent may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C., 62-302.530(47)(b), F.A.C. and/or 62-302.530(61), F.A.C..

Shannon-Weaver Diversity Index: This index is specified in the Florida Administrative Code 62-302 as a measure of biological integrity. Low diversity scores are undesirable. Where diversity is low, only a few taxa are abundant as compared to an area where many taxa are present in equitable abundance among taxa (Magurran 1988). A difference of 25% in Shannon-Weaver diversity between results from Hester-Dendy multiplate samplers incubated for 28 days at test and control sites constitute exceedances of 62-302.530(10), F.A.C..

The Stream Condition Index (SCI): The SCI is a composite macroinvertebrate metric developed for Florida (Fore et. al. 2007). This Index was revised in 2007 using data from qualitative dipnet samples. The SCI now assigns points to ten parameters; depending on how closely each parameter approaches an expected value (QA Rule SOP LT 7200). Points are assigned according to in which bioregion (Panhandle, Northeast, or Peninsula) the sampling location exists -and summed to yield a final SCI score (range 0-100). Included in the calculation of SCI are taxa richness, number of Ephemeroptera taxa, number of Trichoptera taxa, percent contribution of the dominant taxon, number of sensitive taxa, number of clinger taxa, number of long-lived taxa, percent contribution of Tanytarsini, percent contribution of very tolerant, and the percent contribution of suspension and filter feeders. As human disturbance increases, it is expected that taxa richness, the number of Ephemeroptera taxa, Trichoptera taxa, sensitive taxa, clinger taxa, long-lived taxa, and the percent contribution of Tanytarsini and suspension and filter feeders will decrease while percent contribution of dominant taxon, and percent contribution of very tolerant taxa will increase.

Scores are broken into three categories (1, 2, and 3). Sites in Category 1 are described as having higher diversity than Category 2 sites, particularly for Ephemeroptera and Trichoptera. A Category 1 site may have several more clinger and sensitive taxa, a higher proportion of Tanytarsini, and a lower percent of a dominant taxon than a site in Category 2. The site will also have a very small percentage of very tolerant individuals, if any.

Sites in Category 2 are described as having an average of 30 species with several different taxa of Ephemeroptera and Trichoptera. A Category 2 site also has several different long-lived taxa and, on average, 5 clinger and 6 sensitive taxa. There is a slight increase in dominance by a single taxon relative to sites in Category 1. Very tolerant taxa represent a small percentage of individuals but are noticeably increased as compared to sites in Category 1.

Sites in Category 3 are described as having a notable loss in taxonomic diversity, and Ephemeroptera, Trichoptera, long-lived, clinger and sensitive taxa are uncommon or rare. Filter feeders are reduced by at least 50%. The site is dominated by a tolerant taxon, and very tolerant individuals represent a large proportion of the individuals collected.

SCI 2007 categories are from Table LT 7200-2 of DEP-SOP-002/01 as referenced in Draft Quality Assurance Rule (62-160, F.A.C.), December 3, 2008. A decrease in ordinal SCI score from the Control to the Test site may be evidence of degradation related to a facility's effluent. An SCI score in Category 3, if it is shown to be related to a facility's effluent, may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C., 62-302.530(47)(b), F.A.C. and/or a violation of 62-302.530(61).

Appendix D

Chain of custody

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2012-10-15-41
FYI Dolomite, Inc. Sampling Inspection

Customer: NW-DIST
Project ID: FYI5
PMAS: 1143

Requester: Michelle Fish
Collected By: F Butler, N. Mulkey, R. Abad
Sampling Agency: FDEP
Field Report Prepared By: N. Mulkey
Send Final Report To: Toni Edwards

Lab ID *	Location / Field ID / Matrix / Temp (C) / pH / Latitude / Longitude	Collection (comp begin or grab) / Composite end / Bottle Group(s)**	Tot Res Chlorine (mg/L) / Diss Oxygen (mg/L) / Storet Station Number	Sample Depth / Salinity (PPTh) / Sp Conductance (umho/cm) / NPDES Number	Comments
	Location: Dolomite Outfall Field ID: Effluent Matrix: Salt, Fresh, etc: Fresh Temp (C): 24.60 pH: 8.26 Latitude: 30.64738 dd Longitude: 85.17640 dd	Comp / Grab: Grab Collection (comp begin or grab) Eastern Central: Date 10/15/12 Time 1115 Composite end Eastern Central: Date Time	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): 7.73 Storet Station Number:	Sample Depth: .15 m Salinity (PPTh): Sp Conductance (umho/cm): 320 NPDES Number:	Comments:
07	Location: Chipola River near Dolomite Outfall Field ID: Test Matrix: Salt, Fresh, etc: Fresh Temp (C): 21.10 pH: 7.90 Latitude: 30.64642 dd Longitude: 85.17644 dd	Comp / Grab: Grab Collection (comp begin or grab) Eastern Central: Date 10/15/12 Time 1215 Composite end Eastern Central: Date Time	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): 9.60 Storet Station Number:	Sample Depth: .15 m Salinity (PPTh): Sp Conductance (umho/cm): 261 NPDES Number:	Comments: HD's out of water / no sample
08	Location: Chipola River above Dolomite Outfall Field ID: Control Matrix: Salt, Fresh, etc: Fresh Temp (C): 21.89 pH: 7.82 Latitude: 30.64790 dd Longitude: 85.17699 dd	Comp / Grab: Grab Collection (comp begin or grab) Eastern Central: Date 10/15/12 Time 1345 Composite end Eastern Central: Date Time	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): 9.71 Storet Station Number:	Sample Depth: .15 m Salinity (PPTh): Sp Conductance (umho/cm): 258 NPDES Number:	Comments: Run HD's for info purpose
	Location: Dolomite Outfall Field ID: Field Blank Matrix: Salt, Fresh, etc: Temp (C): pH: Latitude: dd Longitude: dd	Comp / Grab: Grab Collection (comp begin or grab) Eastern Central: Date 10/15/12 Time 1215 Composite end Eastern Central: Date Time	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): Storet Station Number:	Sample Depth: m Salinity (PPTh): Sp Conductance (umho/cm): NPDES Number:	Comments:

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10/15/12	Fed Ex					[signature]	10/16/12 9:13

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Page 1 of 4

Appendix E

Physical/chemical and Habitat Assessment field sheets

DEP-SOP-001/01: Form FD 9000-3

PHYSICAL/CHEMICAL CHARACTERIZATION ELECTRONIC FIELD SHEET ELFS

SAMPLE ID : _____ ORG ID : 21FLPNS

COUNTY : Jackson STORET # : _____

DATE : 10/15/12 TIME : 1249

Latitude : (DM) 30 (degrees) 38 (minutes) 52.74 (seconds) Longitude : 85 (degrees) 10 (minutes) 37.16 (seconds)

SITE NAME : Dolomite Inc. outfall @ Chipola R. Control SAMPLE COMPLETE ? _____

FIELD ID/NAME : Control RECEIVING BODY OF WATER : Chipola River

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category) :

Forest/Natural ✓ | silviculture ✓ | Field/Pasture | Agricultural | Residential | Commercial | Industry ✓ | Other (Specify) Limestone Mine

Local Watershed Erosion (select one) : ☐ None ☐ Slight ☑ Moderate ☐ Heavy

Local Watershed NPS Pollution : ☐ No evidence ☐ Slight ☑ Moderate ☐ Heavy

Width of Riparian Vegetation (m) on Each Buffer Side

Left Bank : >18 Right Bank : 6

High Water Mark: 1.5 (m) + 1.0 (above present water level) = 2.5 (present depth) (above bed)

Artificially Impounded ☐ Yes ☑ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect

Right bank 30 m wide

_____ m/s _____ m/s 0.7 m/s

_____ m deep _____ m deep 0.8 m deep

Artificially Channelized : ☑ No ☐ Some recovery ☐ Mostly recovered, more sinuous ☐ Recent, severe

Canopy Cover % : ☑ Open ☐ Heavily Shaded ☐ Lightly Shaded (11-45%) ☐ Moderate Shaded (46-80%)

SEDIMENT / SUBSTRATE

Sediment Oils ☑ Absent ☐ Slight ☐ Moderate ☐ Profuse

Sediment Odors ☑ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify) :

Sediment Deposition ☐ Sludge Sand Smothering : (None) Slight Moderate Severe Silt Smothering : None Slight (Moderate) Severe ☐ Other (Specify) :

SUBSTRATE TYPE

Assessment Tool: ☑ SCI ☐ BioRecon ☐ LCI ☐ LVI

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	0.4	5	
Undercut Banks / Roots	0.3	1	
Leaf Packs or Mat			
Aquatic Vegetation	1.07	7	
Rock or Shell Rubble..	78.5	17	
Sand.....			
Mud / Muck / Silt	19.73		
Other			
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :	0.15	21.99	7.82	9.71	258	0.12	>1.2
Mid-Depth :				%1109			☑ VOB
Bottom :							

Water Surface Oils : ☑ None ☐ Sheen ☐ Globs ☐ Slick

Water Odors : ☑ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Other (Specify) :

Water Sample Taken ? ☑ Yes ☐ No

Algae Sample Taken ? ☑ Yes ☐ No

SYSTEM TYPE ☑ Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) :

Clarity ☐ Clear ☑ Slightly Turbid ☐ Turbid ☐ Opaque

Color ☐ Tannic ☑ Green (Algae) slightly ☐ Clear ☐ Other (Specify) :

WEATHER CONDITIONS / NOTES : Mostly Cloudy mid to upper 80s

ABUNDANCE

	Absent	Rare	Common	Abundant
Periphyton :	☐	☐	☐	☑
Fish :	☐	☐	☐	☑
Aquatic Macrophytes :	☐	☐	☑	☐
Iron/Sulfur Bacteria :	☑	☐	☐	☐

☑ The antecedent hydrologic conditions have been met to my best knowledge.

Water samples preserved ? ☑ Yes ☑ pH<2 ☐ No Algae samples preserved ? ☑ Yes ☐ No

SAMPLING TEAM : Nathan Mulkay, Frank Butera, Rick Abad SIGNATURE : _____ DATE : 10/16/12

Revision Date: September 5, 2008

DEP-SOP-001/01: Form FD 9000-5

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION

STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: 21FLDNS SUBMITTING AGENCY NAME: FDEP NWD	STORET STATION NUMBER:	DATE (MM/DD/YY): 10/15/12	RECEIVING BODY OF WATER: Apalachicola River
REMARKS: Fifth Year Inspection	COUNTY: Jackson	LOCATION: Dolomite Inc. Outfall	FIELD ID/NAME: Control

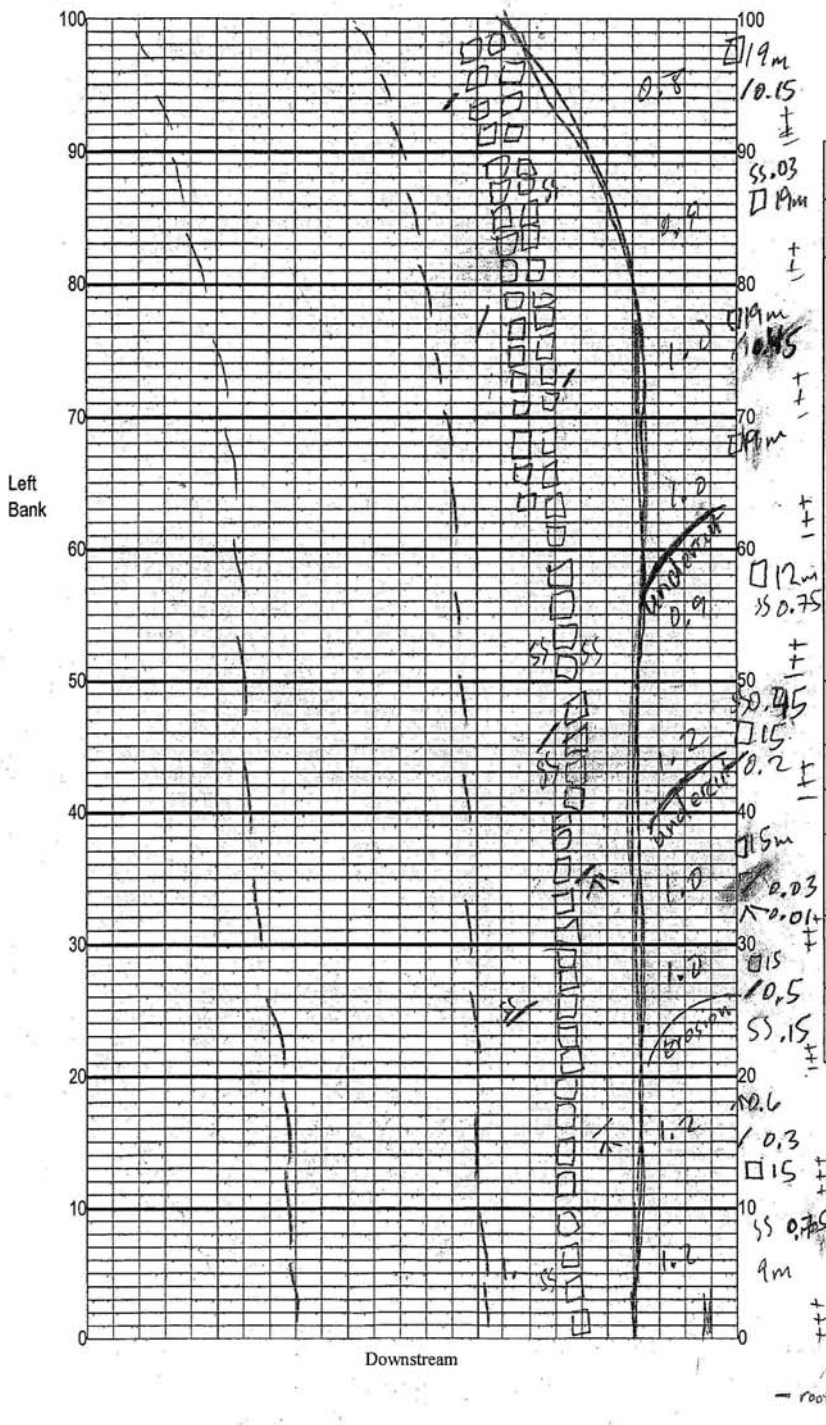
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 10	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed (10) 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 20	Greater than 30% major productive habitat present at site 78.5 (20) 19 18 17 16	16% to 30% major productive habitat, by aerial extent 30% 23% 16% 15 14 13 12 11	6% to 15% major productive habitat 15% 10.5% 6% 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 20	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec 0.7 ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 16 Primary Score 66	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 (16)	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 20	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. (20) 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 7 Left Bank 10	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. (10) 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 (7) 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 4 Left Bank 10	Width of vegetation greater than 18 m (10) 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 (4)	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 10 Secondary Score 71	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

85.16 137 **TOTAL SCORE**

Date: 10/15/12	Analyst: Rick Abad	Signature: Rick Abad

Form FD 9000-5 Revision Date: December 19, 2011

DEP-SOP-001/01 Form FD 9000-4
Stream/River Habitat Sketch Sheet



Location: Dolomite Inc. Control

Date: 10/15/12

Sampler: Frank Butera Rick Moore Nathan Mulk

100 m: Lattitude N 30.64835
Longitude W 85.17788

0 m: Lattitude N 30.64790
Longitude W085.1769

Substrates: Code key, draw proportionate habitat abundance. %

79.97

Snags	0.81 m²	0.4
Roots/undercut banks	0.61	0.3
Leaf Packs (or mats)		
Aquatic Macrophytes	2.13 m²	1.07
Rock		78.5
Silt	157 m² / 20.03	
Pools	total # observed = ____ # range expected = ____	

Average width 2 m
Average depth 1.0 m

Velocity measured at 100 meter mark.

WQ & chemistry taken at 20 meter mark.

Habitat Smothering:
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

Taxodium sp
Red Cedar

Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

Revision Date: June 2, 2011

DEP-SOP-001/01: Form FD 9000-3

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SUBMITTING AGENCY CODE: 21FLPNS SUBMITTING AGENCY NAME: FDEP NWD	STORET STATION NUMBER:	DATE (M/D/Y): 10/15/12	TIME 1215	RECEIVING BODY OF WATER: Chipola River
REMARKS: Fifth Year Inspection	COUNTY: Jackson	LOCATION: Dolomite Inc. Outfall	FIELD ID/NAME: Test	

RIPARIAN ZONE/STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category):

FOREST/NATURAL	SILVICULTURE	FIELD/PASTURE	AGRICULTURAL	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER (SPECIFY)
✓	✓					limestone mine ✓	

LOCAL WATERSHED EROSION (check box): None ☐ Slight ☐ Moderate ☑ Heavy ☐

LOCAL WATERSHED NPS POLLUTION (check box): No evidence ☐ Slight ☐ Moderate potential ☑ Obvious sources ☐

WIDTH OF RIPARIAN VEGETATION (m) On least buffered side: >18m

LIST & MAP DOMINANT VEGETATION ON BACK

ARTIFICIALLY CHANNELIZED ☑ no ☐ recent, severe ☐ some recovery ☐ mostly recovered

ARTIFICIALLY IMPOUNDED ☐ yes more sinuous

HIGH WATER MARK: 1.0 (m above present water level) + 1.2 (present depth in m) = 2.2 (m above bed)

TYPICAL WIDTH, DEPTH & VELOCITY: 30 m wide Right bank only

m/s	m/s	0.4 m/s
m deep	m deep	1 m deep

TYPICAL VELOCITIES
- 7 secs = 0.14 m/s
- 6 secs = 0.17 m/s
- 5 secs = 0.20 m/s
- 4 secs = 0.25 m/s
- 3 secs = 0.33 m/s
- 2 secs = 0.50 m/s
- 1 sec = 1.0 m/s

CANOPY COVER %: OPEN: ☑ LIGHTLY SHADED (11-45%): ☐ MODERATELY SHADED (46-80%): ☐ HEAVILY SHADED: ☐

SEDIMENT/SUBSTRATE

SEDIMENT ODORS: NORMAL: ☑ SEWAGE: ☐ PETROLEUM: ☐ CHEMICAL: ☐ ANAEROBIC: ☐ OTHER: ☐

SEDIMENT OILS: ABSENT: ☑ SLIGHT: ☐ MODERATE: ☐ PROFUSE: ☐

SEDIMENT DEPOSITION: SLUDGE: ☐ SAND SMOTHERING: (NONE) SLIGHT SEVERE MODERATE SILT SMOTHERING: NONE SLIGHT (SEVERE) MODERATE OTHER:

SUBSTRATE TYPE	% COVERAGE	# TIMES SAMPLED	METHOD	SUBSTRATE TYPES	% COVERAGE	# TIMES SAMPLED	METHOD
WOODY DEBRIS (SNAGS)	0.8	2		SAND/SILT/small mash	71		
LEAF PACKS OF MATS				MUD/MUCK/SILT			
AQUATIC VEGETATION	0.3	3		OTHER:			
ROCK OR SHELL RUBBLE	27.6	10		OTHER:			
ROOTS	0.3	1		DRAW AERIAL VIEW SKETCH OF HABITATS FOUND IN 100 M SECTION			

WATER QUALITY	DEPTH (M):	TEMP. (°C):	PH (SU):	D.O. (MG/L):	COND. (UMHO/CM) OR SALINITY (PPT):	Sal	%	SECCHI (M):
TOP	0.15	21.10	7.90	9.60	261	0.12	107.7	>1
MID-DEPTH								
BOTTOM								

SYSTEM TYPE: STREAM: 1ST-2ND ORDER ☐ 3RD-4TH ORDER ☐ 5TH – 6TH ORDER ☐ 7TH ORDER OR GREATER ☐ LAKE: ☐ WETLAND: ☐ ESTUARY: ☐ OTHER: ☐

WATER ODORS (CHECK BOX): NORMAL: ☑ SEWAGE: ☐ PETROLEUM: ☐ CHEMICAL: ☐ OTHER: ☐

WATER SURFACE OILS (CHECK BOX): NONE: ☑ SHEEN: ☐ GLOBS: ☐ SLICK: ☐

CLARITY (CHECK BOX): CLEAR: ☐ SLIGHTLY TURBID: ☐ TURBID: ☑ OPAQUE: ☐

COLOR (CHECK BOX): TANNIC: ☐ GREEN (ALGAE): ☐ CLEAR: ☑ OTHER: ☐

WEATHER CONDITIONS/NOTES: Partly Cloudy mid 80's
Sample water @ 50m
measurements @ 0m

ABUNDANCE:	ABSENT	RARE	COMMON	ABUNDANT
PERIPHYTON	☐	☐	☐	☑
FISH	☐	☐	☑	☐
AQUATIC MACROPHYTES	☐	☑	☐	☐
IRON/SULFUR BACTERIA	☑	☐	☐	☐

SAMPLING TEAM: Frank Butera, Nathan Mulkey R, Hall

SIGNATURE: [signature] DATE: 10/15/12

DMS GPS COORDS. 30° 38' 47.11" L -85° 14' 35.18"

DEP-SOP-001/01: Form FD 9000-5

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION

STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: 21FLPNS SUBMITTING AGENCY NAME: FDEP NWD	STORET STATION NUMBER:	DATE (MM/DD/YY): 10/15/12	RECEIVING BODY OF WATER: Chipola River
REMARKS:	COUNTY: Jackson	LOCATION: Dolomite Inc. Outfall	FIELD ID/NAME: Test

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 5	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered (5) 4 3 2 1
Substrate Availability 14	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 30% 27 23% 16% 15 (14) 13 12 11	6% to 15% major productive habitat 15% 10.5% 6% 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 20	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec 0.4 ≥0.33 0.31 0.29 0.27 >0.25 (20) 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 11 03/20/13 MM Primary Score ~~55~~ 50	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 (11)	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 20	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 10 Left Bank 10	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 5 Left Bank 10	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system (5) 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank ~~9~~ 10 Left Bank 10 Secondary Score ~~74~~ 75	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

~~129~~ ~~130~~ 125 **TOTAL SCORE**

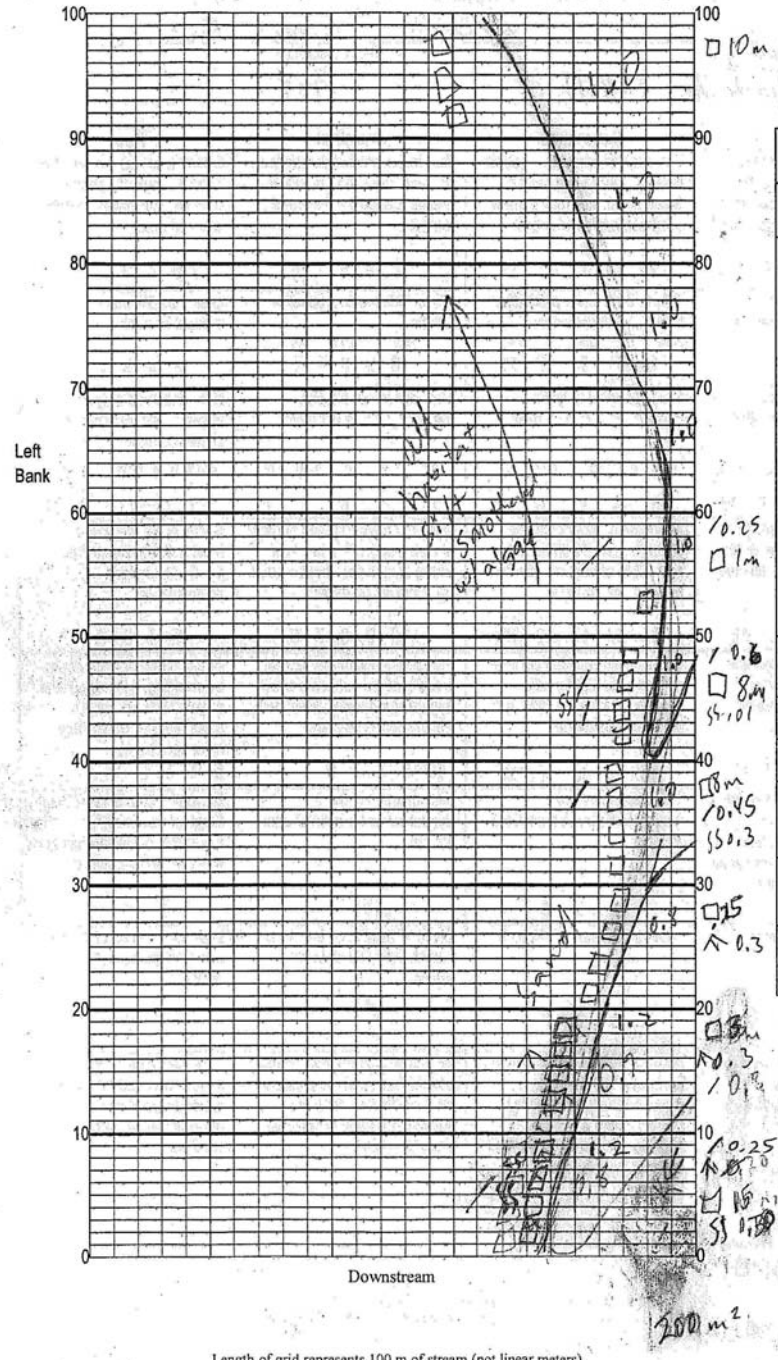
MM 03/20/13

Date: 10/16/12	Analyst: Rick Hibbard	Signature:

Form FD 9000-5 Revision Date: December 19, 2011

H_2O col. 1215

DEP-SOP-001/01 Form FD 9000-4
Stream/River Habitat Sketch Sheet



Location: Chipola River blw outfall
Date: 10/15/12
Sampler: NM, FB + RA

100 m: Lattitude	
Longitude	
0 m: Lattitude	N30.64642
Longitude	W085.17644

Substrates: Code key, draw proportionate habitat abundance. 27.6%

/	Snags SKSS	0.86
↑	Roots/undercut banks 0.6	0.3
0	Leaf Packs (or mats) Ø	
SS	Aquatic Macrophytes 0.61	0.30
□	Rock 55.25	27.6
	Pools total # observed = 0 # range expected =	

Average width 15 m
Average depth _____ m

Velocity measured at 50 meter mark. 0.4

WQ & chemistry taken at 50 meter mark.

Habitat Smothering:
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
Note areas (on map) with unstable, eroding banks. None

Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

Taxodium
Ceratophyllum
Red maple
Sabal sp
+ = Double Stroke

Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

Revision Date: June 2, 2011

Appendix F
Chemical analysis of effluent and receiving water

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units	MDL	PQL
10/15/2012 12:15	Effluent	AGP/LN	Algal Growth Potential	0.3	U	mg DryWt/L	0.3	0.9
10/15/2012 12:15	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.9	I	mg/L	0.2	2
10/15/2012 12:15	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	7		ug/L	0.55	1.7
10/15/2012 12:15	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.4	U	ug/L	0.4	1.2
10/15/2012 12:15	Effluent	Field Parameter	Dissolved Oxygen	7.75		mg/L		
10/15/2012 12:15	Effluent	Field Parameter	pH	8.26				
10/15/2012 12:15	Effluent	Field Parameter	Sample Depth	0.15		m		
10/15/2012 12:15	Effluent	Field Parameter	Specific Conductance	320		umhos/cm		
10/15/2012 12:15	Effluent	Field Parameter	Temperature	24.6		C		
10/15/2012 12:15	Effluent	Metals	Aluminum	65		ug/L	5	20
10/15/2012 12:15	Effluent	Metals	Arsenic	2.66		ug/L	0.25	1
10/15/2012 12:15	Effluent	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Metals	Calcium	33.5		mg/L	0.075	0.3
10/15/2012 12:15	Effluent	Metals	Chromium	0.3	U	ug/L	0.3	1.2
10/15/2012 12:15	Effluent	Metals	Copper	0.5	U	ug/L	0.5	1
10/15/2012 12:15	Effluent	Metals	Iron	77	I	ug/L	30	120
10/15/2012 12:15	Effluent	Metals	Lead	0.2	U	ug/L	0.2	0.8
10/15/2012 12:15	Effluent	Metals	Magnesium	10.1		mg/L	0.04	0.16
10/15/2012 12:15	Effluent	Metals	Nickel	0.76	I	ug/L	0.25	1
10/15/2012 12:15	Effluent	Metals	Selenium	0.36	I	ug/L	0.2	0.8
10/15/2012 12:15	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/15/2012 12:15	Effluent	Metals	Sodium	17		mg/L	0.5	2
10/15/2012 12:15	Effluent	Metals	Zinc	5	U	ug/L	5	20
10/15/2012 12:15	Effluent	Nutrients	Alkalinity	114		mg CaCO3/L	0.65	2.5
10/15/2012 12:15	Effluent	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
10/15/2012 12:15	Effluent	Nutrients	Chloride	25		mg Cl/L	0.2	0.5
10/15/2012 12:15	Effluent	Nutrients	Color (true)	4.3	I	PCU	2.5	6
10/15/2012 12:15	Effluent	Nutrients	Fluoride	0.093	I	mg F/L	0.035	0.1
10/15/2012 12:15	Effluent	Nutrients	Kjeldahl Nitrogen	0.36		mg N/L	0.08	0.2
10/15/2012 12:15	Effluent	Nutrients	NO2NO3-N	0.44		mg N/L	0.004	0.01
10/15/2012 12:15	Effluent	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
10/15/2012 12:15	Effluent	Nutrients	Organic Carbon	2.4		mg C/L	0.4	0.8
10/15/2012 12:15	Effluent	Nutrients	Sulfate	8		mg SO4/L	0.2	0.5
10/15/2012 12:15	Effluent	Nutrients	Total-P	0.01		mg P/L	0.002	0.005

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units	MDL	PQL
10/15/2012 12:15	Effluent	Nutrients	TSS	5	I	mg/L	2	10
10/15/2012 12:15	Effluent	Nutrients	Turbidity	2.9		NTU	0.1	0.1
10/15/2012 12:15	Effluent	Pesticides	Alachlor	0.3	U	ug/L	0.3	1.2
10/15/2012 12:15	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Pesticides	Azinphos Methyl	0.1	U	ug/L	0.1	0.4
10/15/2012 12:15	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
10/15/2012 12:15	Effluent	Pesticides	Butylate	0.1	U	ug/L	0.1	0.4
10/15/2012 12:15	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Pesticides	Chlorpyrifos Methyl	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Pesticides	Ethoprop	0.025	U	ug/L	0.025	0.1
10/15/2012 12:15	Effluent	Pesticides	Fenamiphos	0.15	U	ug/L	0.15	0.6
10/15/2012 12:15	Effluent	Pesticides	Fonofos	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Pesticides	Hexazinone	0.15	U	ug/L	0.15	0.6
10/15/2012 12:15	Effluent	Pesticides	Malathion	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Pesticides	Metalaxyl	0.2	U	ug/L	0.2	0.8
10/15/2012 12:15	Effluent	Pesticides	Metolachlor	0.3	U	ug/L	0.3	1.2
10/15/2012 12:15	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
10/15/2012 12:15	Effluent	Pesticides	Mevinphos	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Pesticides	Naled	0.2	U	ug/L	0.2	0.8
10/15/2012 12:15	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
10/15/2012 12:15	Effluent	Pesticides	Parathion Ethyl	0.1	U	ug/L	0.1	0.4
10/15/2012 12:15	Effluent	Pesticides	Parathion Methyl	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Pesticides	Phorate	0.025	U	ug/L	0.025	0.1
10/15/2012 12:15	Effluent	Pesticides	Prometryn	0.1	U	ug/L	0.1	0.4
10/15/2012 12:15	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	10	U	ug/L	10	42
10/15/2012 12:15	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	16	U	ug/L	16	62
10/15/2012 12:15	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	1	U	ug/L	1	4.2

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units	MDL	PQL
10/15/2012 12:15	Effluent	Priority Organic Pollutants	2-Chlorophenol	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1	U	ug/L	3.1	12
10/15/2012 12:15	Effluent	Priority Organic Pollutants	2-Nitrophenol	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	42	U	ug/L	42	170
10/15/2012 12:15	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1	U	ug/L	2.1	8.3
10/15/2012 12:15	Effluent	Priority Organic Pollutants	4-Nitrophenol	16	U	ug/L	16	62
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Acenaphthene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Acenaphthylene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Anthracene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Benzidine	100	U	ug/L	100	420
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1	U	ug/L	3.1	12
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	16	U	ug/L	16	62
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	5.2	U	ug/L	5.2	21
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Chrysene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Diethyl phthalate	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Dimethyl phthalate	10	U	ug/L	10	42
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	5.2	U	ug/L	5.2	21
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Fluoranthene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Fluorene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Hexachlorobenzene	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3.1	U	ug/L	3.1	12
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1	U	ug/L	3.1	12
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Hexachloroethane	3.1	U	ug/L	3.1	12
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Isophorone	1	U	ug/L	1	4.2

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units	MDL	PQL
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Naphthalene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Nitrobenzene	2.1	U	ug/L	2.1	8.3
10/15/2012 12:15	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1	U	ug/L	2.1	8.3
10/15/2012 12:15	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1	U	ug/L	2.1	8.3
10/15/2012 12:15	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1	U	ug/L	3.1	12
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Pentachlorophenol	3.1	U	ug/L	3.1	12
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Phenanthrene	0.21	U	ug/L	0.21	0.83
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Phenol	1	U	ug/L	1	4.2
10/15/2012 12:15	Effluent	Priority Organic Pollutants	Pyrene	0.21	U	ug/L	0.21	0.83
10/15/2012 14:45	Control Site	AGP/LN	Algal Growth Potential	0.439		mg DryWt/L	0.3	0.9
10/15/2012 14:45	Control Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.87	I	mg/L	0.2	2
10/15/2012 14:45	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.63	I	ug/L	0.55	1.7
10/15/2012 14:45	Control Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.59	I	ug/L	0.4	1.2
10/15/2012 14:45	Control Site	Field Parameter	Dissolved Oxygen	9.71		mg/L		
10/15/2012 14:45	Control Site	Field Parameter	pH	7.82				
10/15/2012 14:45	Control Site	Field Parameter	Sample Depth	0.15		m		
10/15/2012 14:45	Control Site	Field Parameter	Specific Conductance	258		umhos/cm		
10/15/2012 14:45	Control Site	Field Parameter	Temperature	21.89		C		
10/15/2012 14:45	Control Site	Metals	Aluminum	74		ug/L	5	20
10/15/2012 14:45	Control Site	Metals	Arsenic	0.45	I	ug/L	0.25	1
10/15/2012 14:45	Control Site	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
10/15/2012 14:45	Control Site	Metals	Calcium	44.4		mg/L	0.075	0.3
10/15/2012 14:45	Control Site	Metals	Chromium	0.83	I	ug/L	0.3	1.2
10/15/2012 14:45	Control Site	Metals	Copper	0.5	U	ug/L	0.5	1
10/15/2012 14:45	Control Site	Metals	Iron	260		ug/L	30	120
10/15/2012 14:45	Control Site	Metals	Lead	0.2	U	ug/L	0.2	0.8
10/15/2012 14:45	Control Site	Metals	Magnesium	3.5		mg/L	0.04	0.16
10/15/2012 14:45	Control Site	Metals	Nickel	0.25	U	ug/L	0.25	1
10/15/2012 14:45	Control Site	Metals	Selenium	0.2	U	ug/L	0.2	0.8
10/15/2012 14:45	Control Site	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/15/2012 14:45	Control Site	Metals	Sodium	2.9		mg/L	0.5	2
10/15/2012 14:45	Control Site	Metals	Zinc	5	U	ug/L	5	20
10/15/2012 14:45	Control Site	Nutrients	Alkalinity	116		mg CaCO3/L	0.65	2.5
10/15/2012 14:45	Control Site	Nutrients	Ammonia-N	0.013	I	mg N/L	0.01	0.02
10/15/2012 14:45	Control Site	Nutrients	Chloride	5.9		mg Cl/L	0.2	0.5
10/15/2012 14:45	Control Site	Nutrients	Color (true)	13		PCU	2.5	6

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units	MDL	PQL
10/15/2012 14:45	Control Site	Nutrients	Fluoride	0.057	I	mg F/L	0.035	0.1
10/15/2012 14:45	Control Site	Nutrients	Kjeldahl Nitrogen	0.29		mg N/L	0.08	0.2
10/15/2012 14:45	Control Site	Nutrients	NO2NO3-N	1.5		mg N/L	0.04	0.1
10/15/2012 14:45	Control Site	Nutrients	O-Phosphate-P	0.009	I	mg P/L	0.004	0.01
10/15/2012 14:45	Control Site	Nutrients	Organic Carbon	3		mg C/L	0.4	0.8
10/15/2012 14:45	Control Site	Nutrients	Sulfate	1.5		mg SO4/L	0.2	0.5
10/15/2012 14:45	Control Site	Nutrients	Total-P	0.021		mg P/L	0.002	0.005
10/15/2012 14:45	Control Site	Nutrients	TSS	5	I	mg/L	2	10
10/15/2012 14:45	Control Site	Nutrients	Turbidity	2.2		NTU	0.1	0.1
10/15/2012 13:15	Test Site	AGP/LN	Algal Growth Potential	0.3	U	mg DryWt/L	0.3	0.9
10/15/2012 13:15	Test Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.4	I	mg/L	0.2	2
10/15/2012 13:15	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	2		ug/L	0.55	1.7
10/15/2012 13:15	Test Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.97	I	ug/L	0.4	1.2
10/15/2012 13:15	Test Site	Field Parameter	Dissolved Oxygen	9.6		mg/L		
10/15/2012 13:15	Test Site	Field Parameter	pH	7.9				
10/15/2012 13:15	Test Site	Field Parameter	Sample Depth	0.15		m		
10/15/2012 13:15	Test Site	Field Parameter	Specific Conductance	261		umhos/cm		
10/15/2012 13:15	Test Site	Field Parameter	Temperature	21.1		C		
10/15/2012 13:15	Test Site	Metals	Aluminum	173		ug/L	5	20
10/15/2012 13:15	Test Site	Metals	Arsenic	0.66	I	ug/L	0.25	1
10/15/2012 13:15	Test Site	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
10/15/2012 13:15	Test Site	Metals	Calcium	44.6		mg/L	0.075	0.3
10/15/2012 13:15	Test Site	Metals	Chromium	1.1	I	ug/L	0.3	1.2
10/15/2012 13:15	Test Site	Metals	Copper	0.5	U	ug/L	0.5	1
10/15/2012 13:15	Test Site	Metals	Iron	370		ug/L	30	120
10/15/2012 13:15	Test Site	Metals	Lead	0.25	I	ug/L	0.2	0.8
10/15/2012 13:15	Test Site	Metals	Magnesium	4.5		mg/L	0.04	0.16
10/15/2012 13:15	Test Site	Metals	Nickel	0.33	I	ug/L	0.25	1
10/15/2012 13:15	Test Site	Metals	Selenium	0.2	U	ug/L	0.2	0.8
10/15/2012 13:15	Test Site	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/15/2012 13:15	Test Site	Metals	Sodium	4.5		mg/L	0.5	2
10/15/2012 13:15	Test Site	Metals	Zinc	5	U	ug/L	5	20
10/15/2012 13:15	Test Site	Nutrients	Alkalinity	117		mg CaCO3/L	0.65	2.5
10/15/2012 13:15	Test Site	Nutrients	Ammonia-N	0.014	I	mg N/L	0.01	0.02
10/15/2012 13:15	Test Site	Nutrients	Chloride	7.4		mg Cl/L	0.2	0.5
10/15/2012 13:15	Test Site	Nutrients	Color (true)	13		PCU	2.5	6

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units	MDL	PQL
10/15/2012 13:15	Test Site	Nutrients	Fluoride	0.06	I	mg F/L	0.035	0.1
10/15/2012 13:15	Test Site	Nutrients	Kjeldahl Nitrogen	0.4		mg N/L	0.08	0.2
10/15/2012 13:15	Test Site	Nutrients	NO2NO3-N	1.4		mg N/L	0.04	0.1
10/15/2012 13:15	Test Site	Nutrients	O-Phosphate-P	0.008	I	mg P/L	0.004	0.01
10/15/2012 13:15	Test Site	Nutrients	Organic Carbon	2.9		mg C/L	0.4	0.8
10/15/2012 13:15	Test Site	Nutrients	Sulfate	2.1		mg SO4/L	0.2	0.5
10/15/2012 13:15	Test Site	Nutrients	Total-P	0.025		mg P/L	0.002	0.005
10/15/2012 13:15	Test Site	Nutrients	TSS	5	I	mg/L	2	10
10/15/2012 13:15	Test Site	Nutrients	Turbidity	3		NTU	0.1	0.1
10/15/2012 14:15	Field Blank	Metals	Aluminum	5	U	ug/L	5	20
10/15/2012 14:15	Field Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
10/15/2012 14:15	Field Blank	Metals	Cadmium	0.05	U	ug/L	0.05	0.2
10/15/2012 14:15	Field Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
10/15/2012 14:15	Field Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2
10/15/2012 14:15	Field Blank	Metals	Copper	0.5	U	ug/L	0.5	1
10/15/2012 14:15	Field Blank	Metals	Iron	30	U	ug/L	30	120
10/15/2012 14:15	Field Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
10/15/2012 14:15	Field Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
10/15/2012 14:15	Field Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
10/15/2012 14:15	Field Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
10/15/2012 14:15	Field Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/15/2012 14:15	Field Blank	Metals	Sodium	0.5	U	mg/L	0.5	2
10/15/2012 14:15	Field Blank	Metals	Zinc	5	U	ug/L	5	20
10/15/2012 14:15	Field Blank	Nutrients	Alkalinity	0.65	U	mg CaCO3/L	0.65	2.5
10/15/2012 14:15	Field Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
10/15/2012 14:15	Field Blank	Nutrients	Chloride	0.2	U	mg Cl/L	0.2	0.5
10/15/2012 14:15	Field Blank	Nutrients	Color (true)	2.5	U	PCU	2.5	6
10/15/2012 14:15	Field Blank	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
10/15/2012 14:15	Field Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
10/15/2012 14:15	Field Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
10/15/2012 14:15	Field Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
10/15/2012 14:15	Field Blank	Nutrients	Organic Carbon	0.4	U	mg C/L	0.4	0.8
10/15/2012 14:15	Field Blank	Nutrients	Sulfate	0.2	U	mg SO4/L	0.2	0.5
10/15/2012 14:15	Field Blank	Nutrients	Total-P	0.002	U	mg P/L	0.002	0.005
10/15/2012 14:15	Field Blank	Nutrients	Turbidity	0.1	U	NTU	0.1	0.1
10/15/2012 14:15	Field Blank	Pesticides	Alachlor	0.32	U	ug/L	0.32	1.3

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units	MDL	PQL
10/15/2012 14:15	Field Blank	Pesticides	Ametryn	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Pesticides	Atrazine	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Pesticides	Azinphos Methyl	0.11	U	ug/L	0.11	0.43
10/15/2012 14:15	Field Blank	Pesticides	Bromacil	0.21	U	ug/L	0.21	0.85
10/15/2012 14:15	Field Blank	Pesticides	Butylate	0.11	U	ug/L	0.11	0.43
10/15/2012 14:15	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Pesticides	Chlorpyrifos Methyl	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Pesticides	Diazinon	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Pesticides	Ethion	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Pesticides	Ethoprop	0.027	U	ug/L	0.027	0.11
10/15/2012 14:15	Field Blank	Pesticides	Fenamiphos	0.16	U	ug/L	0.16	0.64
10/15/2012 14:15	Field Blank	Pesticides	Fonofos	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Pesticides	Hexazinone	0.16	U	ug/L	0.16	0.64
10/15/2012 14:15	Field Blank	Pesticides	Malathion	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Pesticides	Metalaxyl	0.21	U	ug/L	0.21	0.85
10/15/2012 14:15	Field Blank	Pesticides	Metolachlor	0.32	U	ug/L	0.32	1.3
10/15/2012 14:15	Field Blank	Pesticides	Metribuzin	0.11	U	ug/L	0.11	0.43
10/15/2012 14:15	Field Blank	Pesticides	Mevinphos	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Pesticides	Naled	0.21	U	ug/L	0.21	0.85
10/15/2012 14:15	Field Blank	Pesticides	Norflurazon	0.16	U	ug/L	0.16	0.64
10/15/2012 14:15	Field Blank	Pesticides	Parathion Ethyl	0.11	U	ug/L	0.11	0.43
10/15/2012 14:15	Field Blank	Pesticides	Parathion Methyl	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Pesticides	Phorate	0.027	U	ug/L	0.027	0.11
10/15/2012 14:15	Field Blank	Pesticides	Prometryn	0.11	U	ug/L	0.11	0.43
10/15/2012 14:15	Field Blank	Pesticides	Simazine	0.053	U	ug/L	0.053	0.21
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	11	U	ug/L	11	42
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	16	U	ug/L	16	63
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	2-Chlorophenol	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.2	U	ug/L	3.2	13
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	2-Nitrophenol	1.1	U	ug/L	1.1	4.2

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units	MDL	PQL
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	42	U	ug/L	42	170
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1	U	ug/L	2.1	8.4
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	4-Nitrophenol	16	U	ug/L	16	63
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Acenaphthene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Anthracene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Benzidine	110	U	ug/L	110	420
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.2	U	ug/L	3.2	13
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	16	U	ug/L	16	63
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	5.3	U	ug/L	5.3	21
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Chrysene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Diethyl phthalate	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	11	U	ug/L	11	42
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	5.3	U	ug/L	5.3	21
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Fluoranthene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Fluorene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.2	U	ug/L	3.2	13
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.2	U	ug/L	3.2	13
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Hexachloroethane	3.2	U	ug/L	3.2	13
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Isophorone	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Naphthalene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Nitrobenzene	2.1	U	ug/L	2.1	8.4
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1	U	ug/L	2.1	8.4

Date_Sampled	UDL	SCH_Group	Component	Value	Qualifier	Units	MDL	PQL
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1	U	ug/L	2.1	8.4
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.2	U	ug/L	3.2	13
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Pentachlorophenol	3.2	U	ug/L	3.2	13
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Phenanthrene	0.21	U	ug/L	0.21	0.84
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Phenol	1.1	U	ug/L	1.1	4.2
10/15/2012 14:15	Field Blank	Priority Organic Pollutants	Pyrene	0.21	U	ug/L	0.21	0.84

Appendix G-1

Wet ID taxa list and number of algal units counted to a target of 300 natural units for qualitative natural periphyton collections from samples collected in the Chipola River, upstream and downstream of Dolomite, Inc. on 10/15/12.

	Control Site	Test Site
Bacillariophyta		
Bacillariophyta	245	233
Chlorophycota		
Chlorella sp.	3	1
Scenedesmus bijuga	1	-
Scenedesmus verrucosus	1	-
Tetraedron minimum	-	1
Cryptophycophyta		
Cryptomonas sp.	1	-
Cyanophycota		
Cyanobium parvum	2	-
Jaaginema geminatum	2	5
Jaaginema gracile	11	18
Oscillatoria princeps	1	-
Planktolyngbya limnetica	2	8
Plectonema wollei	6	9
Pseudanabaena biceps	-	1
Pseudanabaena mucicola	-	3
Schizothrix calcicola	4	4
Synechocystis sp.	21	16
Xanthophyta		
Ophiocytium cochleare	-	1

Appendix G-2

Diatom taxa list and number of valves counted to a target of 500 valves for qualitative periphyton collected from samples collected in the Chipola River, upstream and downstream of Dolomite, Inc. on 10/15/12.

	Control Site	Test Site
Bacillariophyta		
Bacillariophyceae		
Achnanthes fluviatilis	2	2
Achnanthes rupestoides	-	2
Achnanthidium exiguum	5	3
Achnanthidium microcephalum	-	11
Achnanthidium minutissimum	2	10
Amphora sp.	1	-
Amphora copulata	3	2
Amphora pediculus	-	4
Bacillaria paxillifer	-	1
Brachysira vitrea	-	4
Capartogramma crucicula	-	1
Cocconeis sp.	19	14
Cocconeis disculus	9	12
Cocconeis pediculus	17	7
Cocconeis placentula	36	25
Cymbella tumidula	1	4
Diadesmis confervacea	-	15
Diploneis sp.	-	1
Encyonema evergladianum	-	29
Geissleria acceptata	19	25
Gomphonema	4	13
Gomphonema affine	3	2
Gomphonema grovei	-	1
Gomphonema minutum	-	3
Gomphonema parvulum	4	-
Gyrosigma sp.	1	-
Hippodonta capitata	1	1
Karayevia clevei	50	37
Navicula sp.	15	5
Navicula cryptocephala	-	7
Navicula cryptotenella	1	-
Navicula germainii	1	-
Navicula minima	-	1
Navicula rhynchocephala	4	-
Navicula viridulacalcis	1	-

Appendix G-2 (continued)

Naviculaceae	7	3
Nitzschia amphibia	2	4
Placoneis elginensis	-	2
Planothidium apiculatum	2	-
Planothidium frequentissimum	8	13
Planothidium rostratum	25	12
Rhoicosphenia sp.	5	-
Sellaphora pupula	-	3
Stauroneis sp.	2	-
Coscinodiscophyceae		
Aulacoseira granulata	4	-
Coscinodiscaceae	1	2
Melosira sp.	-	6
Fragilariophyceae		
Fragilaria capucina	23	16
Fragilaria martyi	1	-
Fragilariaceae	-	11
Opephora sp.	-	1
Pseudostaurosira brevistriata	2	5
Staurosira construens	58	24
Staurosira construens venter	26	-
Staurosirella pinnata	135	145
Tabularia fasciculata	1	11

Appendix H-1

Qualitative benthic macroinvertebrate collapsed taxa list and number of individuals counted from 20-discrete-dipnet sweeps conducted upstream and downstream of Dolomite, Inc. on 10/15/12. See SOP LT 7100 sect. 4.2.1 for method on collapsing taxa.

	Control Site		Test Site	
Annelida	**Rep 1**	**Rep 2**	**Rep 1**	**Rep 2**
Oligochaeta				
Tubificidae	1	-	1	-
Arthropoda				
Arachnida				
Acariformes				
Limnochares sp.	1	-	-	-
Unionicolidae	-	-	1	-
Crustacea				
Amphipoda				
Hyalella azteca	31	20	28	38
Decapoda				
Cambaridae	1	1	1	3
Insecta				
Coleoptera				
Ancyronyx variegatus	-	-	-	1
Dubiraphia vittata	1	8	15	4
Ectopria thoracica	-	-	1	-
Enochrus sp.	-	1	-	-
Hydrocanthus sp.	-	1	-	-
Macronychus glabratus	-	1	6	2
Microcylloepus pusillus	1	5	6	5
Stenelmis sp.	1	1	4	-
Diptera				
Ablabesmyia mallochi	-	-	-	1
Cricotopus bicinctus	1	2	2	2
Cricotopus or *Orthocladius* sp.	9	12	6	6
Labrundinia sp.	-	-	2	-
Microtendipes pedellus grp.	-	1	-	-
Pentaneura inconspicua	-	-	1	3
Polypedilum aviceps	-	-	-	1
Polypedilum flavum	14	10	14	8
*Polypedilum illinoens*e grp.	1	-	-	1
Rheocricotopus robacki	-	-	-	1
Rheotanytarsus exiguus grp.	2	-	2	3
Rheotanytarsus pellucidus	-	-	1	-

Appendix H-1 (continued)

Stenochironomus sp.	1	-	-	-
Tanytarsus sp. T Epler	-	-	-	1
Thienemannimyia grp.	2	-	1	-
Simulium sp.	10	5	-	-
Ephemeroptera				
Acerpenna pygmaea	4	11	5	7
Acentrella sp.	4	5	2	3
Baetis intercalaris	2	1	-	-
Caenis sp.	1	-	-	-
Isonychia sp.	2	2	-	1
Maccaffertium exiguum	-	3	1	-
Maccaffertium sp.	5	-	-	-
Procloeon sp.	2	-	-	-
Pseudocloeon ephippiatum	-	1	-	-
Pseudocloeon propinquum	2	-	1	2
Teloganopsis deficiens	7	9	6	2
Tricorythodes albilineatus	13	13	13	12
Lepidoptera				
Pyralidae	1	1	-	1
Megaloptera				
Corydalus cornutus	-	1	-	-
Odonata				
Calopterygidae	-	-	1	2
Plecoptera				
Perlidae	-	-	-	1
Trichoptera				
Cheumatopsyche sp.	19	16	17	25
Hydropsyche sp.	3	2	2	2
Hydroptila sp.	5	7	6	4
Micrasema sp.	-	1	-	-
Nectopsyche exquisita	1	3	-	-
Nectopsyche sp.	-	-	-	2
Oecetis sp.	-	-	1	-
Polycentropodidae	-	-	1	-
Triaenodes sp.	-	-	-	1
Mollusca				
Bivalvia				
Corbicula fluminea	-	-	1	-
Gastropoda				
Hydrobiidae	-	6	-	-

Appendix H-1 (continued)

Notogillia wetherbyi	6	-	-	-
Pleurocera sp.	4	8	3	2
Platyhelminthes				
Undetermined Platyhelminthes	-	-	1	-

Appendix H-2

Qualitative benthic macroinvertebrate taxa list and number of individuals counted from 20-discrete-dipnet sweeps conducted upstream and downstream of Dolomite, Inc. on 10/15/12.

	Control Site		Test Site	
	Rep 1	**Rep 2**	**Rep 1**	**Rep 2**
Annelida				
Oligochaeta				
Tubificidae	1	-	1	-
Arthropoda				
Arachnida				
Acariformes				
Limnochares sp.	-	-	1	-
Unionicolidae	1	-	-	-
Crustacea				
Amphipoda				
Hyalella azteca	28	38	31	20
Decapoda				
Cambaridae	1	3	1	1
Insecta				
Coleoptera				
Ancyronyx variegatus	-	1	-	-
Dubiraphia vittata	15	4	1	8
Ectopria thoracica	1	-	-	-
Enochrus sp.	-	-	-	1
Hydrocanthus sp.	-	-	-	1
Macronychus glabratus	6	2	-	1
Microcylloepus pusillus	6	5	1	5
Stenelmis sp.	4	-	1	1
Diptera				
Ablabesmyia mallochi	-	1	-	-
Chironomidae	-	3	3	1
Cricotopus bicinctus	2	2	1	2
Cricotopus or *Orthocladius* sp.	6	5	8	11
Labrundinia sp.	2	-	-	-
Microtendipes pedellus grp.	-	-	-	1
Pentaneura inconspicua	1	3	-	-
Polypedilum sp.	1	-	-	-
Polypedilum aviceps	-	1	-	-
Polypedilum flavum	13	6	12	10
Polypedilum illinoense grp.	-	1	1	-
Rheocricotopus robacki	-	1	-	-
Rheotanytarsus exiguus grp.	2	3	2	-

Appendix H-2 (continued)

Rheotanytarsus pellucidus	1	-	-	-
Simulium sp.	-	-	10	5
Stenochironomus sp.	-	-	1	-
Tanytarsus sp.T Epler	-	1	-	-
Thienemannimyia grp.	1	-	2	-
Ephemeroptera				
Acentrella sp.	2	2	2	4
Acerpenna pygmaea	5	5	3	8
Baetidae	-	4	6	4
Baetis intercalaris	-	-	1	1
Caenis sp.	-	-	1	-
Ephemerellidae	-	-	-	1
Ephemeroptera	-	-	2	1
Heptageniidae	-	-	4	2
Isonychia sp.	-	1	2	2
Maccaffertium sp.	-	-	1	-
Maccaffertium exiguum	1	-	-	1
Procloeon sp.	-	-	1	-
Pseudocloeon ephippiatum	-	-	-	1
Pseudocloeon propinquum	1	1	1	-
Teloganopsis deficiens	6	2	7	8
Tricorythodes albilineatus	13	12	11	12
Lepidoptera				
Pyralidae	-	1	1	1
Megaloptera				
Corydalus cornutus	-	-	-	1
Odonata				
Calopterygidae	1	2	-	-
Plecoptera				
Perlidae	-	1	-	-
Trichoptera				
Cheumatopsyche sp.	16	25	19	16
Hydropsyche sp.	2	2	3	2
Hydropsychidae	1	-	-	-
Hydroptila sp.	6	4	5	7
Micrasema sp.	-	-	-	1
Nectopsyche sp.	-	2	-	-
Nectopsyche exquisita	-	-	1	3
Oecetis sp.	1	-	-	-
Polycentropodidae	1	-	-	-
Triaenodes sp.	-	1	-	-

Appendix H-2 (continued)

Mollusca				
Bivalvia				
Corbicula fluminea	1	-	-	-
Gastropoda				
Hydrobiidae	-	-	3	6
Notogillia wetherbyi	-	-	3	-
Pleurocera sp.	2	2	4	8
Undetermined Gastropoda	1	-	-	-
Platyhelminthes				
Undetermined Platyhelminthes	1	-	-	-

Appendix I

Benthic macroinvertebrates collapsed taxa list, counts (number of individuals counted) and density (average number of individuals/m^2 rounded to the nearest individual) from Hester-Dendy artificial substrates (n = 4 samples) incubated for 28 days upstream of Dolomite, Inc. and collected on 10/15/12. See results section for explanation on Test Site data. See SOP LT 7100 sect. 4.2.1 for method on collapsing taxa.

	Control Site	
	# counted	**avg # per m2**
Arthropoda		
Crustacea		
Amphipoda		
Hyalella azteca	46	92
Decapoda		
Cambaridae	1	2
Insecta		
Coleoptera		
Elmidae	1	2
Macronychus glabratus	5	10
Microcylloepus pusillus	11	22
Diptera		
Ablabesmyia rhamphe grp.	1	2
Chironomidae	6	12
Corynoneura sp.	8	16
Cricotopus or O*rthocladius sp.*	3	6
Nilotanypus fimbriatus	5	10
Pentaneura inconspicua	6	12
Polypedilum flavum	23	46
Polypedilum scalaenum grp.	6	12
Rheotanytarsus exiguus grp.	1	2
Tanytarsus sp. A Epler	4	8
Tanytarsus sp. C Epler	2	4
*Tanytarsu*s sp. L Epler	1	2
Tanytarsus sp. Y Epler	1	2
Thienemanniella sp.	7	14
Thienemannimyia grp.	1	2
Tribelos fuscicornis	1	2
Ephemeroptera		
Acerpenna pygmaea	10	20
Baetis intercalaris	1	2
Caenis sp.	5	10
Heptageniidae	30	60
Isonychia sp.	26	52
Plauditus bimaculatus	1	2

Appendix I (continued)

Maccaffertium sp.	26	52
Maccaffertium exiguum	17	34
Stenacron sp.	11	22
Stenacron floridense	20	40
Teloganopsis deficiens	16	32
Tricorythodes albilineatus	9	18
Megaloptera		
Corydalus cornutus	2	4
Odonata		
Argia moesta	1	2
Coenagrionidae	1	2
Trichoptera		
Cheumatopsyche sp.	4	8
Cernotina sp.	1	2
Hydropsychidae	3	6
Hydroptila sp.	2	4

EPA End Sheet

The Priority Pollutants Analysis for Dolomite, Inc. effluent sampled on October 15, 2012, NPDES #FL0101192

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code				NPDES NUMBER										YR/MO/DA						Insp Type		Inspector		Fac Type	
1	N	2	5	3	F	L	0	1	0	1	1	9	2	11 12	1	2	1	0	1	5	#	**X**	#	**S**	#	2

Remarks

#

Biological Analyses of the Dolomite, Inc. effluent sampled on October,15 2012, NPDES #FL0101192

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code				NPDES NUMBER										YR/MO/DA						Insp Type		Inspector		Fac Type	
1	N	2	5	3	F	L	0	1	0	1	1	9	2	11 12	1	2	1	0	1	5	#	**S**	#	**S**	#	2

Remarks

#